9-7-2018

Entrepreneurship Education's Impact on Entrepreneurial Intention: A Predictive Regression Model of Chinese University Students

Brian A. Lavelle
blavelle12@georgefox.edu

Entrepreneurship Education's Impact on Entrepreneurial Intention: A Predictive Regression Model of Chinese University Students

Brian A. Lavelle

Dissertation

George Fox University

Newberg, Oregon

September 7, 2018

In partial fulfillment of the requirements for the degree of

Doctor of Business Administration

Dr. Annette Nemetz, Ph.D., Committee Chair

Dr. Paul Shelton, Ph.D., Committee Member

Dr. Linda Samek, Ed.D., Committee Member

GEORGE FOX UNIVERSITY
COLLEGE OF BUSINESS

Dissertation Completion Approval
Doctor of Business Administration

Student Name: Brian Lavelle Student ID#: 1831956

Cohort #: 10 Concentration: MGMT

Project Title: Entrepreneurship Education's Impact on Entrepreneurial Intention: A Predictive Regression Model of Chinese University Students

has been approved for the
Doctor of Business Administration Program
at George Fox University
as a Dissertation for the DBA degree.

Approval Signatures:

Annette Nemetz Date 9/7/18
Chair

Annette Nemetz Date 9/17/18
Chair (print)

Date 9/7/18
Member

PAUL M SHELTON Date 9/17/18
Member (print)

Linda Samek Date 9-7-18
Member

Linda Samek Date 9-7-18
Member (print)

Date 9-10-18
Justine Haigh, PhD - Director, DBA Program

Submit completed form to the Graduate Program Coordinator of the Doctor of Business Administration program.

Acknowledgments

I wish to express my sincere gratitude to Dr. Annette Nemetz for serving as committee chair. I am thankful for her patient support and valuable advice throughout the preparation of this manuscript, and as my advisor in a professional capacity.

Sincere thanks go to Dr. Paul Shelton and Dr. Linda Samek for their contribution to this study, their timely review of this manuscript, and their service on the dissertation committee. I gratefully acknowledge the support of my doctoral colleagues at George Fox University.

I am very grateful to my associates at Wuxi South Ocean College, in particular for the assistance provided by Dean Annie Wang, Yi Fu Huang, Xiao Ju, and Jian Hu Zhou during the data collection process.

I gratefully acknowledge the tolerance and sacrifices of my wife, Maria, and thank her for her encouragement and loving support.

Table of Contents

List of Tables

List of Figures

Abstract

"Entrepreneurship education's impact on entrepreneurial intention: A predictive regression model of Chinese university students" is a dissertation study by Brian A. Lavelle, doctoral candidate at George Fox University. The study investigates the impact of entrepreneurship education on entrepreneurial intention using quantitative methods and survey data from China. The study uses Ajzen's (1991) Theory of Planned Behavior and the Entrepreneurial Intention Questionnaire (Linan & Chen, 2009) to investigate the impact between personal attitude, subjective norms, perceived behavioral control, and entrepreneurship education on entrepreneurial intention. The data was collected from eleven college and university programs in Wuxi, Jiangsu Province, in the People's Republic of China. The primary methodology of the study was regression analysis which allowed the researcher to assess the individual impact of each antecedent factor in the regression model. The findings of the study provide no evidence that entrepreneurship education positively impacts entrepreneurial intention in China. The author concludes that the self-selection bias and differences between ranked universities and vocational colleges in China may explain the results of the study. This research provides findings with implications to university communities and policy-makers in China, which may serve as a performance measurement of entrepreneurship education policies. This research provides findings with implications to scholars as the entrepreneurship education-entrepreneurial relationship in China is currently inconclusive.

Keywords: entrepreneurship, entrepreneurial intention, entrepreneurship education, China

Chapter 1: Introduction

Entrepreneurship contributes to economic growth and social development by providing technological innovations, increased economic efficiency, and the creation of new jobs (Hindle & Rushworth, 2000; Shane & Venkataraman, 2000). Researchers and public policy-makers have acknowledged the importance of entrepreneurship as a driver of economic growth (Van Praag & Versloot, 2007; Fayolle & Gailly, 2008; Stamboulis & Barlas, 2014). Several countries have invested in entrepreneurship education at universities in order to encourage more entrepreneurship (Walter & Block, 2017; Brush et al., 2003; Katz, 2003). As a result, entrepreneurship education has become the focus of many academic studies.

Entrepreneurship education has been identified as one of several important antecedents of entrepreneurial intention, an antecedent of entrepreneurial behavior itself. Entrepreneurship education is defined as the process whereby individuals learn the concepts and skills needed to recognize entrepreneurial opportunities and take action (McIntyre & Roche, 1999). Entrepreneurial intention is defined as the intention to start a new business (Krueger, 1993). Research analyzing the entrepreneurship education-entrepreneurial intention relationship has produced mixed results with the majority of studies showing a small, but positive relationship (Souitaris, Zerbinati, & Al-Laham, 2007; Martin, McNally, & Kay, 2013; Sanchez, 2013; Bae, Qian, Miao, & Fiet, 2014; Galloway & Brown, 2002; Gorman, Hanlon, & King, 1997; Henderson & Robertson,

2000). Several studies have also found the opposite, meaning a negative and discouraging effect (Oosterbeek, van Praag, & Ijsselstein, 2010; von Graevenitz et al., 2010). In aggregate, the entrepreneurship education–entrepreneurial intention correlation is r = .143, according to the most recent meta-analysis of 73 studies, 74 samples, and 37,285 individuals by Bae et al., (2014).

Problem Statement

Entrepreneurship education has been recognized as an important antecedent of entrepreneurial intention (Donckels, 1991; Crant, 1996; Robinson & Sexton, 1994; Gorman et al., 1997; Zhao, Seibert, & Hills, 2005). Many studies have reported inconsistent and ambiguous findings (Lorz, Volery, & Miller, 2011; Bae et al., 2014). Entrepreneurship education has been empirically explored many times in developed countries (Autio et al., 1997; Peterman & Kennedy, 2003; Kennedy Drennan, Renfrow, & Watson, 2003; Franke & Luthje, 2004; Tounes, 2006), yet little is known about the impact of entrepreneurship education on entrepreneurial intention in developing countries (Karmini, Biemans, Lans, Chizari, & Mulder 2014; Byabashaija & Katono, 2011; Zhang et al., 2014; Hussain & Norashidah, 2015; Nowinski et al., 2017). Many studies have ignored whether entrepreneurship education can have a direct impact on entrepreneurial intention, representing a major void in the literature (Zhang et al., 2014). Understanding the impact of entrepreneurship education on entrepreneurial intention in developing countries is important and timely as these countries are actively attempting to develop their economies. The contribution of pursuing this scholarship to knowledge include better understanding the entrepreneurship education-entrepreneurial intention relationship

in the context of a developing country where empirical evidence is currently limited. The contribution of pursuing this scholarship to practice include potentially increasing the supply of entrepreneurs, leadings to more innovation and prosperity for citizens in developing countries, as well as globally. This scholarship may address our academic and societal need to understand the role of entrepreneurship education and its ability to create more entrepreneurs and economic growth.

Theoretical Framework

The social psychology literature has established intentions as the best predictor of planned individual behavior, especially when the behavior is difficult to observe or involves unpredictable time lags (Krueger, Reilly, & Carsrud, 2000). Entrepreneurship is an example of planned and intentional behavior (Bird, 1988; Krueger & Brazeal, 1994) and is considered voluntary and conscious (Krueger et al., 2000). Entrepreneurial intention represents the first step in the venture creation process (Lee & Wong, 2004) and would be a necessary precursor to performing entrepreneurial behaviors (Fayolle, Gailly, & Lassa-Clerc, 2006; Kolvereid, 1996). According to Linan and Chen (2009), vast amounts of literature argue entrepreneurial intention play an important role in the decision to start a new business.

Entrepreneurial intention may be affected by several factors, or antecedents, related to an individual's needs, wants, values, habits, and beliefs (Bird, 1988; Lee & Wong, 2004). External situational factors also influence entrepreneurial intention, for example time constraints, task difficulty, and social pressures that impact one's attitude toward entrepreneurship (Kreuger, 1993; Ajzen, 1987; Boyd & Vozikis, 1994; Tubbs &

Ekeberg, 1991; Lee & Wong, 2004). Consequently, scholars have developed several intention-based models for understanding and predicting entrepreneurial intention.

Among the most widely applied intention-based models in entrepreneurship research is the Theory of Planned Behavior developed by Ajzen (1991). Krueger and Carsrud (1993) were the first scholars to apply the Theory of Planned Behavior specifically to entrepreneurship education. According to Karimi et al. (2014) the Theory of Planned Behavior has been widely applied in entrepreneurship research due to its efficacy and ability to predict entrepreneurial intention. The theory asserts entrepreneurial intention represents the effort an individual will make toward entrepreneurial behavior by capturing three motivational factors, or antecedents, that influence behavior (Ajzen, 1991; Linan, 2004; Linan & Chen, 2009). These three factors include personal attitude, subjective norms, and perceived behavioral control. Personal attitude represents the attractiveness of entrepreneurship to an individual (Ajzen, 2001). Subjective norms represent the perception that "reference people" would approve or disapprove of an individual's decision to become an entrepreneur (Ajzen, 2001). Perceived behavioral control represents the perception of difficulty or ease an individual would encounter being an entrepreneur (Linan & Chen, 2009). Entrepreneurship education has been used as a fourth antecedent in models interested in its impact on entrepreneurial intention.

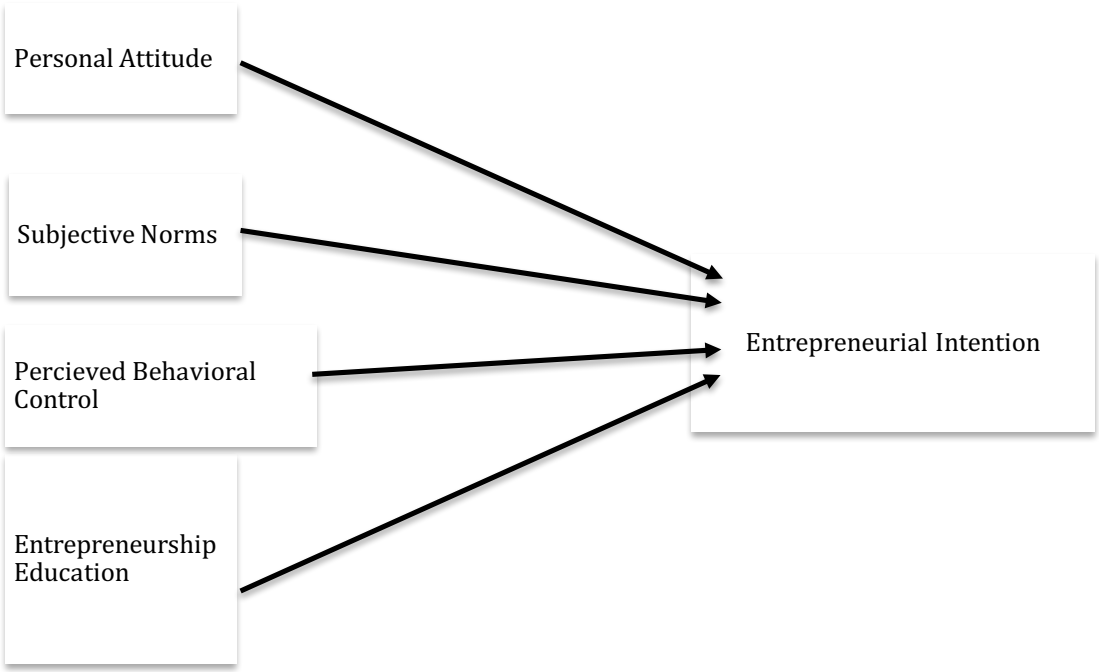


Figure 1. *Theoretical Framework*

The Theory of Planned Behavior provides an appropriate lens to view the problem of additional empirical testing of entrepreneurial intention in a developing country context as it addresses the cognitive relationships between entrepreneurial intention and its antecedents (Hussian & Norashidah, 2015). This study adopts the Theory of Planned Behavior as its theoretical framework for evaluating the impact of entrepreneurship education on entrepreneurial intention among students in China.

Purpose Statement

The purpose of this study is to empirically test the impact of entrepreneurship education on entrepreneurial intention among university students in a developing country context, specifically in China. This study is important due to its implications to policy-

makers, economic growth, and national prosperity among citizens in China. As Nowinski et al. (2017) state, entrepreneurship education can be viewed as part of a policy mix with the objective of increasing entrepreneurial activity. According to Qiang, Yan, and Li (2016), the Chinese government has launched a campaign of "Mass Entrepreneurship and Innovation" at Chinese higher education institutions with the objective of creating a new engine to fuel China's continued economic growth under current downward pressure. "Flexible Academic Systems," a similar initiative, has also been introduced recently (Cai & Kong, 2017). Under these initiatives, Chinese universities and colleges plan to equip students with necessary entrepreneurial ability and skills, turning their approximately seven million graduates per year into an innovative labor force, rather than a burden on the job market (Qiang et al., 2016). This study serves as a measurement of the success of entrepreneurship education programs in China, which were first introduced by the Chinese Ministry of Education at Chinese universities and colleges in April of 2002 and have steadily grown since (Qiang et al., 2016).

This study contributes to academe by adding to the debate concerning the overall impact of entrepreneurship education on entrepreneurial intention via empirical evidence from the developing country context, specifically China. This study contributes to an under-represented area of the literature by providing empirical findings on the direct impact of entrepreneurship education on entrepreneurial intention in China, where findings have been limited despite the country being the world's second largest economy. Finally, this study contributes to practice by providing findings that can be used by educators and administrators to improve the effectiveness of their entrepreneurship education programs.

Research Hypotheses

This study presents several research hypotheses. These hypotheses are formulated using the Theory of Planned Behavior (Ajzen, 1991). Prior findings have confirmed the applicability of the theory in multiple contexts to predict the effects of personal attitude, subjective norms, and perceived behavioral control on entrepreneurial intention (Krueger et al., 2000; Audet, 2002; Paco, Ferreira, Raposo, Rodrigues, & Dinish, 2011; Engle et al., 2010; Linan & Chen, 2009; Iakovleva, Kolvereid, & Stephan, 2011; Karimi et al., 2014). Results often vary from study to study, especially concerning subjective norms (Linan & Chen, 2009) and therefore findings do not represent a conclusive and consistent picture (Karimi et al., 2014).

In the Chinese context, Engle et al. (2010) found the antecedent factors of the Theory of Planned Behavior successful in predicting entrepreneurial intention in 12 countries, including China. Using the Theory of Planned Behavior in conjunction with Shapero's Entrepreneurial Event Model, a similar intention-based model, Zhang et al. (2014) found perceived desirability, equivalent to personal attitude, to significantly impact entrepreneurial intention. Perceived feasibility, equivalent to perceived behavioral control, had no impact, and prior entrepreneurial exposure, equivalent to subjective norms, had a significant negative impact on entrepreneurial intention, much to the surprise of the authors. Using the Theory of Planned Behavior in China, Cai and Kong (2017) found personal attitude and perceived behavioral control to positively impact student entrepreneurial intention. Subjective norms were not significant, demonstrating no evidence that the impact of parents, relatives, and friends is influential on student

entrepreneurial intention. Despite some inconsistency in the literature, the expectations are the following:

Hypothesis 1: Personal attitude is positively related to entrepreneurial intention.

Hypothesis 2: Subjective norms are positively related to entrepreneurial intention.

Hypothesis 3: Perceived behavioral control is positively related to entrepreneurial intention.

The fourth antecedent factor of entrepreneurial intention to be tested is entrepreneurship education. Prior empirical studies have demonstrated a positive impact of general education, business education, and entrepreneurship education on entrepreneurial intention (Charney & Libecap, 2000; Cho, 1998; Donckels, 1991; Gorman et al., 1997; Kuratko, 2003; McMullan, Chrisman, & Vesper, 2002; Peterman & Kennedy, 2003; Bae, et al., 2014). A recent meta-analysis of 74 samples by Bae et al. (2014) found entrepreneurship education to be a more effective pedagogical tool for enhancing entrepreneurial intention than business education. The authors report an overall positive relationship between entrepreneurship education and entrepreneurial intention, with the measurement-adjusted correlation being $r = .143$ (p. 234). A separate meta-analysis produced by Martin and colleagues (2013) found a correlation of $r = .137$ between entrepreneurship education and training and entrepreneurial intention, based on 19 samples. In summary, the majority of studies support the overall small, but positive relationship between entrepreneurship education and entrepreneurial intention.

In the Chinese context, Zhang, Cheng, Fan, and Chu (2012) found no evidence of a direct effect between carve-out education and entrepreneurial intention, however did find an indirect relationship. Carve-out education is defined similarly to entrepreneurship

education. Zhang et al. (2014) found entrepreneurship education to have a significant, positive, and direct impact on entrepreneurial intention. Cai and Kong (2017) also found entrepreneurship education to have a significant, positive, and direct impact on the entrepreneurial intention of students in China. Therefore, the expectation is the following:

> Hypothesis 4: Entrepreneurship education is positively related to entrepreneurial intention.

Significance of the Study

Why study entrepreneurship education? Among the scarce resources of classical economic theory, entrepreneurial ability plays a crucial role in economic development by advancing technological innovations, increasing economic efficiency, creating new jobs, and increasing standards of living (Shane & Venkataraman, 2000; Hindle & Rushworth, 2000). Traditionally these abilities are considered scarce. Consider the economic impact of exceptionally rare entrepreneurs like Henry Ford, Thomas Edison, Bill Gates, Steve Jobs, and Jeff Bezos, for example. Entrepreneurial ability may not be as scarce as previously believed if it can be cultivated through education and training. Better understanding the link between entrepreneurship education and entrepreneurial intention will benefit scholars' knowledge of a generally under-researched relationship (Pittaway & Cope, 2007). This research will help improve educators' pedagogy of entrepreneurship training to future entrepreneurs while also improving policy-maker's economic and entrepreneurship education objectives.

This research adds to the academic literature by providing additional and needed empirical findings of the direct impact of entrepreneurship education on entrepreneurial

intention from a developing country. First, the literature identifies that additional empirical testing is needed to understand the entrepreneurship education-entrepreneurial intention relationship. As Byabashaija and Katono (2011 p. 129) state, "the effect of entrepreneurship education on entrepreneurial intention is limited and still undergoing empirical testing." Second, many studies examining the effect of entrepreneurship education on entrepreneurial intention have focused on developed western economies, while very limited empirical studies have focused on developing countries (Zhang et al, 2014; Byabashaija & Katono, 2011; Hussian & Norashidah, 2015; Nowinski et al., 2017, Karimi et al., 2017). Third, many studies have ignored the potential direct impact entrepreneurship education may have on entrepreneurial intention, "thereby representing a major void in the literature so far" (Zhang et al., 2014, p. 625). This study will address these three gaps of knowledge.

This research intends to improve practice by providing university educators and administrators additional evidence that can be used to improve entrepreneurship pedagogy. Finally, this research will improve policy by providing policy-makers additional evidence regarding the effectiveness of entrepreneurship education as a method of developing entrepreneurial behavior.

Delimitations

There are several delimitations of this study. The data of the study was gathered during the spring months of 2018. The location of the study is Wuxi, Jiangsu Province, in the People's Republic of China. The sample of this study is college and university undergraduate students at institutions in the city of Wuxi, Jiangsu Province. Finally, the

criteria of the study concern the predictability of the factors personal attitude, subjective norms, perceived behavioral control, and entrepreneurship education on entrepreneurial intention using regression modeling.

Assumptions and Limitations

There are several assumptions and limitations of this study. The assumption that the sample of students surveyed are representative of the population of students in China is taken. The study assumes participants understand and truthfully respond to the survey presented to them during the data gathering process. The study assumes all surveyed students are Chinese nationals, traditional undergraduates who have entered university following high school, and have taken a version of the Chinese government mandated compulsory entrepreneurship training required for all incoming university and college freshmen students in China. Finally, an assumption of the study is that student enrollment in non-mandatory entrepreneurship courses are random, as opposed to students purposely enrolling in entrepreneurship courses due to pre-existing entrepreneurial intention, which is a term known as "self-selection bias" in the literature (Linan, 2004; McMullan & Long, 1987; Noel, 2002). The assumption that students enroll randomly allows researchers to make inferences on the impact of entrepreneurship education. The self-selection bias argument states entrepreneurial intention may exist ex-ante, or prior to the delivery of entrepreneurship education, thus questioning the impact of entrepreneurship education as a method of increasing entrepreneurial intention.

Concerning limitations, all studies involving entrepreneurial intention are limited in the sense that it would be preferable for the dependent variable to relate to actual

venture creation rather than the intention to start-up. As a result, some entrepreneurship scholars have questioned the effectiveness of intention to predict entrepreneurial behavior (Douglas & Shepherd, 2002; Bae et al., 2014). This study is limited in that it does not measure the impact between pre-and-post entrepreneurship education on entrepreneurial intention as some studies have done (Karmini et al., 2014; Rideout & Gray, 2013; Byabashaija & Katono, 2011). Due to circumstances related to accessing the sample of this study, a pre-and-post entrepreneurship education analysis was not possible. Perhaps this would have provided a more meaningful description of the impact of entrepreneurship education on entrepreneurial intention. This study is limited in that entrepreneurship education responses from sample participants may be unique and therefore ungeneralizable to past and future studies. A similar limitation concerning subjective norms was noted in Zhang et al. (2014). This study is limited in that data was gathered in one city, Wuxi, Jiangsu. Finally, this study is limited in that it does not investigate narrowly-defined explanatory factors that could impact entrepreneurial intention. Rather, the model factors include entrepreneurship education and those of the Theory of Planned Behavior (Ajzen, 1991) which are broad and all-encompassing. Specific confounding factors such as gender, culture, university type, university major, perceived availability of funding sources from family or others, for example, are not specifically included in this study's model.

Definition of Terms

The following are operational definitions of key terms used in this study. Entrepreneurial intention is defined as the commitment or intention to start a new

business (Krueger, 1993; Krueger, 2009). Entrepreneurship education is defined as the process whereby individuals learn the concepts and skills needed to recognize opportunities others have overlooked, as well as have the insight and self-esteem to take actions where others have hesitated (McIntyre & Roche, 1999, p.33). Semester format entrepreneurship education is defined as education that uses a fixed number of contact hours for 30 sessions or more and is characterized as "distributed practice" duration pedagogy, which allows students more time to absorb learning material (Bae et al., 2014). Workshop format entrepreneurship education is defined as education that uses a "massed practice" duration pedagogy, where complete delivery is provided over several consecutive days (Bloom & Shuell, 1981) with less time to absorb information comparatively. A venture creation course is defined as a course that teaches students practical steps toward the creation of a venture (Rodrigues, Dinis, do Paco, Ferreira, & Raposo, 2012) and often requires students to actively start a new company, known as "learning-by-doing." Business planning is defined as the process of learning how to draft a business plan and is intended to instill knowledge and skills that strengthen one's entrepreneurial intentions (Becker, 1964; Fayolle et al., 2006, von Graevenitz et al., 2010; Youndt, Subramaniam, & Snell, 2004). According to Honig (2004), business planning is the primary method used by the majority of entrepreneurship courses and programs. University-level entrepreneurship education is defined as entrepreneurship training delivered by colleges and universities.

The antecedent factors of entrepreneurial intention according to the Theory of Planned Behavior (Ajzen, 1991) include personal attitude, subjective norms, and perceived behavioral control. Personal attitude refers to the degree of attractiveness an

individual perceives toward being an entrepreneur (Ajzen, 2001; Autio, et al., 2001; Kolverreid, 1996). Subjective norms refer to the perception that "reference people" would approve or disapprove of the decision of an individual to become an entrepreneur, as measured by perceived social pressure (Ajzen, 2001). Perceived behavioral control is defined as the perception of difficulty or ease an individual would encounter being an entrepreneur (Linan & Chen, 2009), and is a concept similar to self-efficacy (Bandura, 1997) and perceived feasibility (Shapero and Sokol, (1982), which are used in similar intention-based models of entrepreneurship.

Organization of the Study

The remainder of this dissertation is organized into several chapters, a references section, and an appendix. Chapter 2 reviews the literature concerning entrepreneurial intention and entrepreneurship education. Chapter 3 explains the research methods, design, and rationale of this study. Chapter 4 presents the findings of the study. Chapter 5 presents conclusions. References for the citations of this study and an appendix section are included. In summary, Chapter 1 has outlined the research problem, the theoretical framework, the purpose statement, the research hypotheses, the significance of the study, the delimitations, the assumptions and limitations, the definition of terms, and the remaining chapters of this dissertation. This chapter has provided background information concerning the importance of entrepreneurship education and its impact to entrepreneurial intention.

Chapter 2: Literature Review

This chapter reviews the literature regarding entrepreneurship education's impact on entrepreneurial intention. This chapter is organized accordingly for this study and contains three important subtopics. First, a discussion of entrepreneurial intention, the dependent variable of this study, is offered. This discussion will focus on two of the predominant intention-based models used in the literature to research entrepreneurial intention. Second, entrepreneurship education and its impact on entrepreneurial intention is discussed. This section will emphasize the importance of entrepreneurship education and its empirical relationship to entrepreneurial intention. Third, the limited studies in developing countries that look at the impact of entrepreneurship education on entrepreneurial intention is discussed. Few studies have explored the link between entrepreneurship education's impact on entrepreneurial intention in the developing country context, which has motivated this study.

Entrepreneurial Intention

Entrepreneurship research has extensively explored issues concerning how new firms form, who starts them, and why (Autio et al., 1997; Gartner, 1988; Low & MacMillan, 1998). Early entrepreneurship research investigated the psychological qualities of successful entrepreneurs. These qualities include a high need for

achievement, a desire for autonomy, a proclivity for moderate risk-taking, aggressive competitiveness, an internal locus of control, and a flair for innovation (Gartner, 1989; Reynolds, 1995; Timmons, 1999). Researchers were unable to identify a standard entrepreneurial profile and research trends shifted to explanatory factors that occur during the early stages of the entrepreneurial process (Byabashaija & Katono, 2011; Schlaegel & Koenig, 2013).

Interest in explanatory factors of entrepreneurship lead to an assortment of theoretical frameworks describing entrepreneurial behavior. Seminal articles argued that entrepreneurial intention is crucial in the creation of new ventures due to the careful planning of the entrepreneur, making entrepreneurship a deliberate and intentional behavior (Shapero 1975; Shapero and Sokol 1982; Bird 1988; Katz & Gartner, 1988). Bird (1988) defines intentionality as a state of mind that directs personal attention, experience, and action toward a specific goal. Gartner and colleagues (1994) argue entrepreneurial intention is fundamental to understanding entrepreneurship as it represents the first step in the entrepreneurial process. Multiple studies regard entrepreneurial intention as an important antecedent of entrepreneurial behavior (Krueger et al., 2000; Lee, Wong, Foo, & Leung, 2011; Bae et al., 2014), despite some doubts among scholars concerning its association (Douglas & Shepherd, 2002).

Entrepreneurial intention is determined by several individual factors. Scholars have identified an individual's traits and personalities (Ciavarella, Buchholtz, Riordan, Gatewood, & Stokes, 2004), risk-taking propensity (Zhao et al., 2005), self-efficacy (Zhao et al., 2005) exposure to entrepreneurial activity (Krueger, 1993; Matthews & Moser, 1996), gender (Eccles, 1994; Wilson, Kickul, & Marlino, 2007; Marlow &

McAdam, 2011; Zhang et al., 2014), attitudes (Ajzen, 1991; Krueger, 2000; Linan & Chen, 2014) and entrepreneurship education (Krueger & Carsud, 1993; Krueger et al., 2000; Fayolle et al., 2006; Linan, 2008; Martin et al., 2013; Bae et al., 2014) as important antecedents of entrepreneurial intention. Entrepreneurial intention-based models were developed to study entrepreneurial activity. Krueger et al. (2000, p. 411) state intentions have proven the best predictor of planned behavior, especially when the behavior is rare, hard to observe, or involves unpredictable time lags, and therefore entrepreneurship represents the precise behavior for which intention-based models are suited for.

Several competing intention-based models, as well as adaptations, extensions, and mixtures of models, attempt to explain entrepreneurial intention. These competing models have produced conflicting and inconclusive empirical findings (Bae et al., 2014; Krueger, 2009; Shook, Priem, & McGee, 2003). Some scholars argue these models are repetitive and little difference exists between approaches (Peterman & Kennedy, 2003; Krueger et al., 2000). Consequently, the literature began to promote the integration of theoretical frameworks to achieve theoretical clarity and empirical precision (Shook et al., 2003). The predominant intention-based models in the literature are The Theory of Planned Behavior (Ajzen, 1991) and the Entrepreneurial Event Model (Shapero & Sokol, 1982), which will be discussed respectively.

The Theory of Planned Behavior. The Theory of Planned Behavior was formulated by Ajzen (1991) and asserts behavioral intentions are the most immediate predictor of actual behavior. Ajzen (1991) asserts behavior requires planning, which can be predicted using intention. The Theory of Planned Behavior has been successfully applied to several research contexts (Krueger et al., 2000), and was first introduced to the

entrepreneurship literature by Krueger and Carsrud (1993). According to the theory, entrepreneurial intention signifies the effort a person will carry out entrepreneurial behavior (Linan & Chen, 2009) and can be captured by three motivational antecedent factors, which influence the behavior (Ajzen, 1991; Linan, 2004). These three antecedent factors include the personal attitude toward the behavior, subjective norms, and the degree of perceived behavioral control. Each of these antecedents will now be discussed.

Personal attitude, in Ajzen's (1991) theory, represents an individual's appraisal, or reflection, of the given behavior. This appraisal can may be placed on a continuum from favorable to unfavorable. Ajzen (1991) states the more favorable the personal attitude toward the given behavior, the greater the intention. Among entrepreneurship intention studies using the theory, attitude toward the behavior is regarded as personal attitude toward starting-up and refers to an individual's positive or negative personal valuation about being an entrepreneur (Ajzen, 2001; Autio et al., 2001; Kolvereid, 1996). This valuation includes an appraisal of the attractiveness or lack thereof, and advantages and disadvantages of being an entrepreneur (Linan & Chen, 2009).

Subjective norms, in Ajzen's (1991) theory, represents the degree to which family, friends, peers, and society influence or pressure the individual to perform the given behavior. Ajzen (1991) states the greater the influence or pressure, the greater the gravitation or avoidance toward the behavior. Applied to entrepreneurial intention, subjective norms refer to the degree an individual perceives social pressure to engage in entrepreneurial behaviors (Linan & Chen, 2009), as well as the perception that reference people would approve or disapprove of the decision to become an entrepreneur (Ajzen, 2001). Several scholars have modified or eliminated the use of subjective norms in their

studies of entrepreneurial intention (Krueger et al., 2000; Zhang et al., 2014) on the grounds that this factor is difficult to capture and less predictive of intentions for individuals with a highly internal locus of control, as admitted by Ajzen (1987); as well as issues related to an individual's strong orientation toward taking action, as stated by Bagozzi, Baumgartner, and Yi (1992).

Perceived behavioral control, in Ajzen's (1991) theory, represents the extent to which an individual feels capable of performing the given behavior. This component is equivalent to self-efficacy (Davidsson, 1995; Krueger, 2003; Bandura, 1997) and perceived feasibility (Shapero & Sokol, 1982) in other models and is based on knowledge, experience, and perceptions of possible obstacles when performing the given behavior. Ajzen (1991) states the greater the feeling of behavioral control, the greater the intention to perform the given behavior. Applied to entrepreneurial intention, perceived behavioral control is defined as an individual's perception of ease or difficulty becoming an entrepreneur (Linan & Chen, 2009). The next section will discuss a competing intention-based model commonly used in the entrepreneurial intention literature.

Entrepreneurial Event Model. The Entrepreneurial Event Model was introduced by Shapero (Shapero, 1975; Shapero & Sokol, 1982; Shapero, 1984), and is alternatively known as the Shapero Model, among other names. Like other entrepreneurship models, intention is used to describe the entrepreneurial process. The Entrepreneurial Event Model asserts business creation is an event explained by the interaction between initiative, ability, management, relative autonomy, and risk (Shapero & Sokol, 1982). According to Krueger et al. (2000), "Shapero's model assumes that inertia guides human behavior until something interrupts or displaces that inertia" (p. 418). Displacements can

be both negative or positive and include examples such as the loss of a job, a divorce, migration, a milestone birthday, an inheritance, or winning the lottery (Krueger et al., 2000). As a result of the displacement, a change in human behavior occurs where the individual seeks the best opportunity among a set of alternatives (Katz, 1992). Entrepreneurial events occur if the opportunity is perceived as desirable and feasible, and the individual possesses a propensity to act (Shapero, 1982). Therefore, the model states entrepreneurial intention is the result of three factors that include an individual's perceived feasibility, perceived desirability, and the propensity to act on opportunities, which are affected by the social and cultural context (Shapero, 1975; Shapero & Sokol, 1982). Each of these three factors will now be briefly described.

Perceived desirability refers to the extent individuals feel attracted to becoming an entrepreneur, representing the individual's preference for entrepreneurial behavior (Shapero & Sokol, 1982). Byabashaija and Katono (2011) define perceived desirability as the individual's assessment of the intrinsic value of entrepreneurship. Perceived feasibility refers to the extent an individual is confident they can start their own business, as well as their view that becoming an entrepreneur is achievable (Shapero & Sokol, 1982). Byabashaija and Katono (2011) define perceived feasibility as the individual's assessment of the chances entrepreneurial activity will succeed given both supporting and constraining factors. The propensity to act refers to an individual's disposition to act on their decisions (Shapero & Sokol, 1982). In addition, the propensity to act depends on the individual's locus of control. In the model, individuals can demonstrate their preference to acquire control by acting (Krueger et al., 2000) or an orientation to control events in their life (Shapero,1975). Krueger et al. (2000) proposed learned optimism as an

operationalization of the propensity to act, which has subsequently been adopted by other scholars (Seligman, 1990).

Theory Overlap. Reviews of the entrepreneurial intention literature (Krueger, 2009; Shook et al., 2003; Schlaegel & Koenig, 2013) show empirical studies have exclusively used the Theory of Planned Behavior (Ajzen, 1991) and the Entrepreneurial Event Model (Shapero & Sokol, 1982). Several scholars suggest both theories overlap (Krueger & Brazeal,1994; Krueger et al., 2000; Zhang et al., 2014; Karimi et al., 2014), which lead Shook et al. (2003) to urged scholars to integrate the two competing models. Other scholars argue that the Entrepreneurial Event Model is superior due to its volitional element to intention, the propensity to act, which combats the effect of nascent entrepreneurs who demonstrate the intention to start-up but never do, or entrepreneurs who had little intention to start-up a few years before they take action (Katz, 1992; Reynolds, 1994; Krueger et al., 2000; Davidsson & Honig, 2003).

In a meta-analysis of the literature, Schlaegel and Koenig (2013) identified 98 studies in more than 30 countries, done in the past 25 years that used either one of the two models, an extension of either model, or a combination of the two models. Of these studies, 72% were published in journals and 65% were based on student samples (Schlaegel & Koenig, 2013). Schlaegel and Koenig (2013) found the Theory of Planned Behavior (Ajzen, 1991) has been the dominant model in the literature with 30 studies using all three factors, and 12 studies using two of the three factors, compared to only one study using all three factors of the Entrepreneurial Event Model (Shapero & Sokol, 1982). In addition, 17 studies were conducted using a model that combined at least one factor from each model.

Problems have emerged as empirical analyzes of entrepreneurial intention are increasingly common (Autio et al., 2001; Fayolle et al., 2006; Kolvereid & Isaksen, 2006; Krueger et al., 2000; Lee & Wong, 2004; Peterman & Kennedy, 2003; Reitan, 1998; Zhao et al., 2005; Linan & Chen, 2009). In addition to several intention-based models in use, many scholars have developed their own "ad hoc" research instruments, making comparisons between studies problematic according to Linan and Chen (2009). As a response to this challenge, Linan and Chen (2009) use the Theory of Planned Behavior (Ajzen, 1991) to develop the Entrepreneurial Intention Questionnaire (EIQ) in order that future entrepreneurial intention research be comparable and measurement instruments be standardized. The EIQ measures the three antecedent factors of the Theory of Planned Behavior, including personal attitude, subjective norms, and perceived behavioral control, as well as entrepreneurial intention via a seven-point Likert-scale. Linan and Chen (2009) demonstrate the EIQ's robust reliability through its ability to work across different languages and cultures, signifying that the cognitive process from perceptions to intention is similar in different environments. These findings encourage entrepreneurial intention scholars to use the EIQ in future empirical studies.

Entrepreneurship Education

Early entrepreneurship research explored the personal circumstances, factors, and social environments of entrepreneurs. Within this context researchers identified the impact of general education on entrepreneurial intention as an important area of study. Past studies explored the influence of general education on the development of perceptions and intentions of becoming an entrepreneur, finding that educational

background has a significant indirect impact on entrepreneurial intention (Hisrich & Peter, 1989; Krueger, 1993; Wu & Wu, 2008). Cho (1998) argued that education encourages entrepreneurial intention as knowledge and skills useful to entrepreneurship stimulates and motivates an individual to create new businesses. Donckels (1991) acknowledges the importance of general education's effect on entrepreneurial intention in a study among university students in Belgium, stating that education stimulates entrepreneurial behavior.

Despite improving our understanding of entrepreneurs, some scholars argued this stream of research did not imply "causality" (Krueger & Brazeal, 1994; Byabashaija & Katono, 2011), and researchers decided that to demonstrate "causality" it would be necessary to study individuals before the entrepreneurial event (Gartner, 1989; Reynolds, 1995; Gartner et al., 2004; Davidsson, 2006). Consequently, the effect of general education on entrepreneurial intention is considered widely explored (Hisrich & Peters, 1989; Gartner et al., 2004).

The effect of business education on entrepreneurial intention has also been explored (Crant, 1996; Douglas & Shepherd, 2002; Farrington, Venter, & Louw, 2012; Hassan & Waffa, 2012; Moi Adeline, & Dyana, 2011; Schwartz, Wdowiak, Almer-Jarz & Brietenecker, 2009). Business education refers to business school majors, such as economics, accounting, finance, marketing, and management. The meta-analysis by Bae et al. (2014) report that among 14 studies, the correlation between business education and entrepreneurial intention is r =.051. Linan (2008) points out that business education's weak influence on entrepreneurship is due to its emphasis on technical knowledge for business administration rather than the creation process of an organization. Business

education is designed to assist students when working at large, established companies (Grey, 2002; Davidsson, 1995) rather than starting-up. This logic is supported by the findings of Charney and Libecap (2000) who report that entrepreneurship graduates are three times more likely than non-entrepreneurship graduates to start a new business venture. As a result of less interest in general education and business education, scholars shifted their attention to entrepreneurship education.

Empirical findings of entrepreneurship education studies. As scholars began to consider the effects of various factors on individuals before the entrepreneurial event, entrepreneurship education and training was identified as an important area for exploration. Entrepreneurship education refers to "any pedagogical program or process of education for entrepreneurial attitudes and skills" (Fayolle et al., 2006, p. 702). Several types of entrepreneurship education formats have developed to target different stages of development (Bridge, O'Neill, & Cromie, 1998; Gorman et al., 1997; McMullan & Long, 1987) and different audiences (Jamieson, 1984; Linan, 2004). At the university level, the majority of programs aim to increase entrepreneurial awareness and prepare aspiring entrepreneurs (Garavan & O'Cinneide, 1994; Weber, 2011). Such awareness allows students to develop entrepreneurial skills and assist them in choosing a career (Linan, 2004).

The relationship between entrepreneurship education and entrepreneurial intention has become an area of interest for scholars. In the most recent meta-analysis, Bae et al. (2014) aggregated the findings of 73 studies, 74 samples, and 37,285 participants, finding a significant, but small correlation ($r = .143$) between entrepreneurship education and entrepreneurial intention. An earlier meta-analysis by

Martin et al. (2013) also found similar results, providing some support that entrepreneurship can be learned and encouraged through education (Gorman et al., 1997; Kuratko, 2003).

Despite an aggregate positive relationship, many studies demonstrate inconsistency and ambiguous findings (Lorz et al., 2011; Honig, 2004; Bae et al., 2014). A potential explanation for some of this variability is the "self-selection bias" (Linan, 2004; McMullan & Long, 1987; Noel, 2002). This bias occurs when post-education (ex-post) entrepreneurial intentions are not the result of entrepreneurship education but rather student pre-existing (ex-ante) desires to be an entrepreneur, leading to their enrollment in the entrepreneurship course. Kolvereid and Moen (1997) state students who wish to be entrepreneurs will likely choose an entrepreneurship major. Further, von Graeventiz et al. (2010) found a strong and positive correlation between ex-ante beliefs of entrepreneurship and ex-post intentions. Empirically, the meta-analysis by Bae et al. (2014) found that pre-education entrepreneurial intentions appears to be a major source of the inconsistent results in the literature, and when controlling for pre-education entrepreneurial intentions, the entrepreneurship education-entrepreneurial intentions relationship is not significant. These surprising findings provide some support to selection-based explanations, such as the self-selection bias, rather than treatment-based explanations, which assume entrepreneurship education can change a student's entrepreneurial intention.

Outcomes of entrepreneurship education. Studies investigating the impact of entrepreneurship education on entrepreneurial intention have reported some important outcomes. Entrepreneurship education enhances entrepreneurial attitudes among

university and college students by creating a positive association between social desirability and entrepreneurship as a career, making entrepreneurship more attractive and socially acceptable (Potter, 2008; Tkachev & Kolvereid, 1999). Entrepreneurship education provides the knowledge and skills to pursue and identify opportunities. Several scholars argue (Zhao et al., 2005; Davidsson & Honig, 2003) that entrepreneurship education allows students to get information about starting a business more efficiently and effectively, which allows for more value for the identical opportunity. Entrepreneurship education at the university and college level increases the potential supply of entrepreneurs by making students consider entrepreneurship as a career (Hussian & Norashidah, 2015). Krueger et al. (2000) and Zhao et al. (2005) show that learning entrepreneurial skills leads students to increase their perceived feasibility and perceived behavioral control of new ventures, making them more likely to start-up.

Entrepreneurship Education Studies in Developing Countries

Economic growth is a priority in developing countries and scholars and policy-makers have recognized the importance of entrepreneurship as a driver of growth (Van Praag & Versloot, 2007, Fayolle & Gailly, 2008; Stamboulis & Barlas, 2014). Entrepreneurship education can serve as a catalyst for entrepreneurial behavior (Byabashija & Katono, 2011; Nowinski et al., 2017). A major void in the literature is the lack of studies that explore entrepreneurship education's impact on entrepreneurial intention in developing countries. This final section of the literature review highlights several studies from developing countries. These studies are seminal, relevant to the current study, recent, or relate to entrepreneurship education's impact in China. Currently

there are a limited but growing number of studies done in developing countries, and very few studies done in China.

Entrepreneurship education in Uganda. A seminal work in the developing country context is Byabashaija and Katono (2011). These scholars investigate the impact of entrepreneurship education and societal subjective norms on entrepreneurial intention among university students in Uganda. The scholars employed a conceptual model that isolates entrepreneurship education, societal subjective norms, and situational factors, specifically the availability of paid employment and perceived future family commitments. This conceptual model was derived from the Theory of Planned Behavior (Ajzen, 1991), the Entrepreneurship Event Model (Shapero & Sokol, 1982), and the work of Reitan (1996).

Byabashaija and Katono (2011) hypothesized that entrepreneurship education would significantly impact perceived desirability and feasibility, which would then have a significant influence on entrepreneurial intention. Unlike many studies in the literature, data was collected before and after entrepreneurship courses at several universities to account for changes in attitudes as a result of the entrepreneurship education. Among the sample of 167 participants, the researchers surprisingly found that despite small, but significant improvements in student perceived feasibility, perceived desirability, and self-efficacy, entrepreneurial intention decreased following the entrepreneurship courses. These surprising results differ greatly from past studies done in developed countries and the researchers offer an explanation using Tounes (2006) logic for the need to incorporate qualitative aspects in the measurement of entrepreneurship education, as well as to

account for the effectiveness of the entrepreneurship education training (Timmons & Spinelli, 2004).

The study by Byabashaija and Katono (2011) is important to this study as it provides surprising findings from a developing country that can be compared to this and other studies done in developing countries. Interestingly, the Byabashaija and Katono (2011) study reported a large number of unusable survey data. Of the 750 returned questionnaires, the researchers only used 167, citing incomplete questionnaires or the researcher's failure to match the respondents' pre-and-post questionnaires. Babbie (2008) states a rate of less than 50% is not adequate for reporting, and at risk of a non-response bias (Aday, 1996; Rea & Paker, 1997). Byabashaija and Katono (2011) demonstrate the clear need for larger datasets and more empirical testing in developing countries. This study acknowledges the low response rate of Byabashaija and Katono (2011) and concludes that in order to reduce non-response bias, the researcher should visit each class in person during data collection and make the survey conducive for students to complete.

Entrepreneurship education in Pakistan. A relevant work by Hussian and Norashidah (2015) investigate the impact of entrepreneurship education on entrepreneurial intentions among final year business students in Pakistan. The researchers used an intention-based model derived from the Theory of Planned Behavior (Ajzen, 1991) with the objective of investigating the impact of several components of entrepreneurship education, including theoretical knowledge, or know-what, and social networking, or know-who.

Hussian and Norashidah (2015) hypothesized attitudes, subjective norms, perceived behavioral control, and entrepreneurship education positively impacts

entrepreneurial intention. Data was collected at nine private and public universities in Sindh, Pakistan using an adapted EIQ from Linan and Chen (2009) and Lo (2011), with a sample size of 499 students. Using structured equation modeling, the researchers found that theoretical knowledge and social networking had a significant impact on entrepreneurship education, and entrepreneurship education had a significant impact on entrepreneurial intention.

The study by Hussian and Norashidah (2015) is important to this study as it empirically validates the impact of entrepreneurship education on entrepreneurial intentions from the context of developing countries using the Theory of Planned Behavior (Ajzen, 1991) and the EIQ (Linan & Chen, 2009) similarly used in this study. Hussian and Norashidah (2015) demonstrate that entrepreneurship education can promote entrepreneurship in developing countries. However, more empirical findings are needed in the developing country context.

Entrepreneurship education in the Visegrad countries. A recent study by Nowinski et al. (2017) investigates the impact of entrepreneurship education on entrepreneurial intention in the Visegrad countries, which include the Czech Republic, Hungary, Poland, and Slovakia. While the Visegrad countries may not be considered developing countries, the authors emphasize that much less research has been done outside the western world. The scholars used a conceptual framework popularized by Krueger and Reilly (2000) that links perceptions of entrepreneurial self-efficacy to entrepreneurial intention using aspects of Ajzen's Theory of Planned Behavior and Shapero's Entrepreneurial Event Model. Nowinski et al. (2017) used the EIQ from Linan and Chen (2009) to measure entrepreneurial intention and instrumentation from McGee

et al. (2009) to measure entrepreneurial self-efficacy. The scholars collected data both in person and electronically, producing a large sample of 1,022 participants. Nowinski et al. (2017) measured entrepreneurship education by using a single-item which asked participants to self-assess how much of their university studies were devoted to entrepreneurship using a five-point scale.

Using a partial least square structural equation modeling method, Nowinski et al. (2017) reported that entrepreneurship education does not directly contribute to entrepreneurial intention, however it does indirectly via entrepreneurial self-efficacy. Interestingly, the scholars found that the direct impact of entrepreneurship education was significant and slightly positive in only one country, Poland. Nowinski et al. (2017) suggest that entrepreneurship training at the high school level in Poland may explain these results as graduates entering university possess some basic knowledge of entrepreneurship.

The study by Nowinski et al. (2017) is important to this study as it demonstrates the need for additional empirically testing outside western-developed countries. Nowinski et al. (2017) demonstrate the growing acceptance in the literature of the EIQ (Linan & Chen, 2009) as the dominant entrepreneurial intention instrument.

Entrepreneurship education's impact in China. To the best knowledge of the researcher, few studies explore the impact of entrepreneurship education on entrepreneurial intention in China. This section will discuss several of the studies conducted in China. Zhang, Cheng, Fan, and Chu (2012) investigate the impact of college "carve-out education" on entrepreneurial intention in China. The authors state "carve-out education" aims to motivate students to start their own businesses and may contribute to

an individual's managerial ability making them more likely to start-up (Zhang et al., 2012). Based on this description, carve-out education highly resembles entrepreneurship education. Zhang et al. (2012) used structured equation modeling to study the relationships among five variables, including carve-out education, business knowledge, entrepreneurial abilities, psychological quality, and entrepreneurial intention. Zhang et al. (2012) collected sample data from undergraduates at "universities and colleges all over China" resulting in a total sample of 200 participants. The researchers found carve-out education improves student business knowledge, entrepreneurial abilities, and psychological quality. However, Zhang et al. (2012) found carve-out education did not directly impact entrepreneurial intention, rather indirectly by updating students' knowledge, developing their entrepreneurial abilities, and reinforcing their determination. The study by Zhang et al. (2012) is important to this study as it demonstrates the need for additional empirical testing of the direct impact of entrepreneurship education on entrepreneurial intention among Chinese university and college students.

Presenting at a conference, Chen (2010) described the impact of entrepreneurship education on entrepreneurial intention using entrepreneurial self-efficacy as a mediating variable in China. Empirically applying Social Cognitive Theory (Bandura, 1977), Chen (2010) found entrepreneurship education had a positive indirect impact on entrepreneurial intention among university students in China where the impact differed depending on the education level. Chen (2010) postulates that learning and inspiration have a positive impact on entrepreneurial intention through the mediating role of entrepreneurial self-efficacy, while incubation resources have a direct impact on entrepreneurial intention. While Chen's (2010) work does not demonstrate direct impact between entrepreneurship

education and entrepreneurial intention, it provides a comparable example from China.

Cai and Kong (2017) investigate the impact of entrepreneurship education on entrepreneurial intention among Fuzhou University students. Fuzhou University is a "Project 221" and "Double First-Class" university in China. These classifications represent a higher educational quality within China. According to Cai and Kong (2017), in December of 2014 the Chinese Ministry of Education requested that all colleges and universities in China establish "Flexible Academic Systems" that would enable students to create more jobs, potentially solving an employment problem among recent college graduates in China. Cai and Kong (2017) use the Theory of Planned Behavior (Ajzen, 1991) and the Entrepreneurial Event Model (Shapero & Sokol, 1982) in conjunction with a variety of personal factors to construct a conceptual model for testing. The scholars used a random stratified sampling method to select students from six different majors, resulting in a sample size of 274, where 23.1% of the total sample had entrepreneurship education. Cai and Kong (2017) used a Probit regression model to test the relationships among the various factors, finding that entrepreneurship education positively impacts entrepreneurial intention. When testing the antecedents of the Theory of Planned Behavior (Ajzen, 1991), Cai and Kong found that personal attitude and perceived behavioral control/self-efficacy had a positive and significant impact on entrepreneurial intention, whereas subjective norms did not. Cai and Kong's (2017) findings are limited as data originates from a single, highly-ranked university in China and its measurement of entrepreneurship education is simplistic and binary. Yet, the study demonstrates the direct impact of entrepreneurship education on entrepreneurial intention in China using Ajzen's Theory of Planned Behavior.

Finally, Zhang et al. (2014) investigate the relationship between entrepreneurship education, prior entrepreneurial exposure, perceived desirability, and perceived feasibility on entrepreneurial intention in China. The researchers employed a conceptual framework that combined the Entrepreneurial Event Model (Shapero & Sokol, 1982), the Theory of Planned Behavior (Ajzen, 1991), and aspects of the Entrepreneurial Cognition Theory (Mitchell et al., 2007).

Zhang et al. (2014) hypothesized that entrepreneurship education, prior entrepreneurial exposure, perceived desirability, and perceived feasibility are positively related to entrepreneurial intention. Data was collected at ten leading universities across various regions of China, of which five offered entrepreneurship courses. The total sample size was 494 participants. The researchers used Likert-scale questionnaires based on a robust questionnaire from Shapero and Sokol (1982) to measure perceived desirability, perceived feasibility, and prior entrepreneurial exposure. Entrepreneurial intention was measured as a dummy variable, using a yes=1, no =2 response to the question "Do you think you will start a business in the future?" Using a Probit Maximum Likelihood Regression, Zhang et al. (2014) found that entrepreneurship education had a significant positive impact on entrepreneurial intention. Surprisingly, prior entrepreneurial exposure had a significant negative impact on entrepreneurial intention.

The study by Zhang et al. (2014) is particularly important to this study as it empirically tests the direct impact of entrepreneurship education on entrepreneurial intention in China. The objective of additional empirical testing of the entrepreneurship education-entrepreneurial intention relationship, combined with an emphasis on the direct impact of this relationship, and in the context of developing countries, specifically China

is shared. A criticism of the Zhang et al. (2014) study is the binary measures of entrepreneurship education and entrepreneurial intention, as well as the sample participants consisting of students from China's elite universities, which may not accurately represent the population of students in China.

Table 1

Entrepreneurship Education's Impact on Entrepreneurial Intention Studies in China Summary

Author	Model(s)	Method	Sample	EE-EI Findings
Zhang et al., 2012.	Carve-out Education & Entrepreneurial Intention	SEM	200 participants across China	Indirect Impact
Chen, 2010.	Social Cognitive Theory	Not specified	Not specified	Indirect Impact
Cai & Kong, 2017.	Theory of Planned Behavior; Entrepreneurial Event Model	Probit Regression Model	274 participants at Fuzhou University	Direct and Positive Impact
Zhang et al., 2014.	Theory of Planned Behavior; Entrepreneurial Event Model; Entrepreneurial Cognition Theory	Probit Regression Model	494 participants, 10 elite universities	Direct and Positive Impact

This Study's Contribution to the Literature

A review of the literature demonstrates a clear need for further empirical testing of entrepreneurship education's impact on entrepreneurial intention, especially in the context of a developing country. Investigating the impact of entrepreneurship education on entrepreneurial intention in China is also needed as it is currently unclear if courses in entrepreneurship lead to more entrepreneurs. This study employs the conceptual framework of Ajzen's Theory of Planned Behavior (1991) using the Entrepreneurial Intention Questionnaire developed by Linan and Chen (2009), while also following the footsteps of Nowinski et al. (2017), Zhang et al. (2012), Zhang et al. (2014) and Cai and Kong (2017). This study contributes to the literature by empirically testing the direct impact of entrepreneurship education and the three antecedent factors of the Theory of Planned Behavior (Ajzen, 1991) on entrepreneurial intention. This study contributes to the ongoing debate concerning the relationship between entrepreneurship education and entrepreneurial intention from the perspective of a developing country. This study is unique in that data has been collected from a diverse sample of university and college programs, despite sharing the same geographic region in China. This study is unique in that entrepreneurship education is measured using a seven-point Likert-scale format rather than a simple binary yes-no format, which has been the method of measurement in previous studies in China that report a positive effect of entrepreneurship education on entrepreneurial intention (Zhang et al., 2014; Cai & Kong, 2017). As economies continue to transition and develop, especially in countries like China, the need to understand the impact of entrepreneurship education on entrepreneurial intention among university students becomes imperative.

Chapter 3: Methodology

This chapter presents the methodology of the research study. The methodology was selected by considering the research problem, the purpose of the study, theoretical frameworks used in previous studies, and availability of sample data to the researcher. This chapter discusses the research design, population and sample, sampling procedures, instrumentation, data collection procedures, data analysis, and limitations. As mentioned in Chapter 1, the purpose of this study is to empirically test the impact of entrepreneurship education on entrepreneurial intention in a developing country context, specifically among university and college students in China. The research hypotheses of this study are as follows:

Hypothesis 1: Personal attitude is positively related to entrepreneurial intention.

Hypothesis 2: Subjective norm is positively related to entrepreneurial intention.

Hypothesis 3: Perceived behavioral control is positively related to entrepreneurial intention.

Hypothesis 4: Entrepreneurship education is positively related to entrepreneurial intention.

Research Design

This study is quantitative and uses least-squares multiple regression modeling to produce a structured equation that isolates the direct impact of entrepreneurship education. The regression analysis additionally isolates the direct impact of each antecedent factor of the Theory of Planned Behavior (Ajzen, 1991) and predicts entrepreneurial intention. These objectives form the purpose of this research study. As Zhang and colleagues (2014) explain, entrepreneurial intention studies have tended to ignore whether entrepreneurship education can have a direct effect on entrepreneurial intention, representing a major void in the literature which this study will address. The rationale for selecting this method is also supported by prior research studies that use similar regression modeling techniques to predict entrepreneurial intention (Krueger et al., 2000; Audet, 2002; Byabashaija & Katono, 2011; Zhang et al., 2014; Hussain & Norashidah, 2015; Nowinski et al., 2017).

Population and Sample

The population of this study is Chinese university and college students. The results of this study should not be extrapolated to students in other developing countries. The sample of this study is Chinese university and college undergraduate students in the city of Wuxi, Jiangsu Province, in the People's Republic of China. An assumption of this study is that participants in the sample are Chinese nationals, traditional undergraduate students having entered university-level study directly following high school, and have taken Chinese government mandated compulsory entrepreneurship training. These participants were selected due to convenience. Non-probability convenience sampling is

a common approach in entrepreneurship studies (Coviello & Jones, 2004; Ahl, 2006) as it allows the researcher the ability to ensure the appropriateness of participants (Carland, Carland, & Ensely, 2001). Entrepreneurship scholars are advised to survey an adequate sample size in order to reduce the generalizability issue and compensate for a sample's non-random character (Nowinski et al., 2017).

The sample consist of participants from eleven Chinese university and college programs. Each program differs in the area of study offered to students. Several of the universities or colleges in the sample overlap, however the programs of study are different. The eleven university and college programs that were surveyed are presented in Table 2. Demographic data was not collected to avoid response fatigue.

Table 2.

The Eleven University and College Programs Surveyed

Program Surveyed
1. Wuxi South Ocean College - Early Child Education
2. Jiangnan University - Business School
3. Wuxi South Ocean College - Automotive Technology
4. Wuxi South Ocean College - Business School - Marketing Major
5. Wuxi South Ocean College - Business School - Accounting Major
6. Wuxi South Ocean College - University of New England Pathway Cohort 15
7. Wuxi Institute of Technology - Business School
8. Wuxi South Ocean College - University of New England Pathway Cohort 16
9. Wuxi South Ocean College - Hotel Management
10. Wuxi South Ocean College - Aviation Services
11. Wuxi South Ocean College - Construction Management

Sampling Procedure

The sampling procedure used to collect data was a stratified-convenience approach where university and college programs were initially sorted into groups, or strata, based on their potential to offer more advanced entrepreneurship courses. After programs near the researcher were identified, data was collected from these strata using a convenience sampling approach where the researcher visited classrooms to administer the survey. Non-probability convenience sampling is common among entrepreneurship studies (Coviello & Jones, 2004; Ahl, 2006) allowing researchers to ensure the appropriateness of participants (Carland et al., 2001). The sample size, or number of students who participated in this study, is n = 321, with the number of students differing across the strata. This sample size was selected due to the call for larger data sets when analyzing empirical studies of entrepreneurship education's impact on entrepreneurial intention (Zhang et al., 2014). Prior to collecting data, the researcher expected the response rate for this study to be above 50%. Babbie (2008) recommends a response rate above 50% to be suitable for reporting. The criteria used for inclusion in this sample include university and college students who are Chinese nationals, in undergraduate programs in the city of Wuxi, Jiangsu, from any specialization of study, with or without entrepreneurship education experience. An assumption of this study is that all participants are Chinese nationals, traditional undergraduate students, and have taken Chinese government mandated compulsory entrepreneurship training. The reason this sample was selected is due to convenience as the researcher lives in the city of Wuxi, Jiangsu, and has access to these participants.

Instrumentation

The instrument used to collect data was the Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009). The EIQ was developed in an effort to standardize the instrumentation of entrepreneurial intention studies so that different research can be comparable and the literature can overcome the problematic issues of ad hoc research instruments, substantial differences in construct measures, and inconsistent results (Linan & Chen, 2009). Linan and Chen (2009) found the EIQ to be an adequate instrument across different languages and cultures, including Mandarin Chinese, with EIQ results confirming that the cognitive process from perception to intention to be similar across cultures. The EIQ uses Ajzen's (1991) Theory of Planned Behavior to measure personal attitude, subjective norms, perceived behavioral control, and entrepreneurial intention, within a 1-7 Likert-type scales format. The researcher obtained the Traditional Mandarin Chinese Character version of the EIQ from Linan and Chen via email correspondence, as seen in Appendix A and B. This language version of the EIQ was used to collect the data of this study. An English language copy of the EIQ is available in Appendix C.

The EIQ is highly robust in terms of reliability with Cronbach's alpha values ranging from .773 to .943 in Linan and Chen's (2009) original cross-cultural application of the instrument. Linan and Chen (2009) recommend Cronbach's alpha values of .7 or higher as cited by Nunnally (1978). However, Nunnally (1978) also states Cronbach's alpha values can be smaller when fewer than ten items are used, as is the case in this study. Hair, Black, Babin, Anderson, & Tatham, (2006) acknowledge the "generally agreed" .7 limit, but state Cronbach's alphas may decrease to .60 and still be acceptable

in exploratory studies or research in social sciences. Aron and Aron (1999) agree that .60 could be acceptable, however .7 is the preferred threshold. Spector and colleagues (2015) argue that lower Cronbach's alpha values can result when an existing scale is introduced to a dissimilar culture, or when translation issues occur. In this case, a Cronbach's alpha value below .7 is acceptable (Spector et al., 2015). Given the design of the current study, Cronbach's alpha values of .6 or higher is considered acceptable, while values of .7 or higher is considered preferred.

The EIQ (Linan & Chen, 2009) does not measure entrepreneurship education. The researcher employed a single-item method derived from Nowinski et al. (2017) where entrepreneurship education is measured using one question which asks participants to consider the cumulative amount of their university studies devoted to entrepreneurship (p. 6). However, whereas Nowinski et al. (2017) uses a 1-5 scale, this study will employ a 1-7 scale in order to be consistent with the EIQ. Furthermore, whereas Nowinski et al. (2017) classified 1 as being "no-to-little time" and 5 as "a lot of time" (p. 6 - 7), this study will classify the entrepreneurship education scale as follows:

1 – No Entrepreneurship Education

2 – Entrepreneurship training in non-entrepreneurship class (Workshop Format)

3 – Entrepreneurship training with Business Plan in non-entrepreneurship class (Workshop-Format + Business Planning)

4 – Entrepreneurship Class with Business Plan (Semester + Business Planning)

5 – Entrepreneurship Class with Venture Creation (Semester + Venture Creation)

6 – Entrepreneurship Major with Business Plan (Multi-Semester + Business Planning)

7 – Entrepreneurship Major with Venture Creation (Multi-Semester + Venture Creation)

As the measurement of entrepreneurship education is original, the researcher used a sub-sample test-retest approach to demonstrate measurement reliability. A value of .7 or higher is considered acceptable. The EIQ (Linan & Chen, 2009) and modified single-item measure of entrepreneurship education were presented in Mandarin Chinese, both traditional (EIQ) and simplified (EE), for the convenience of participants of this study. An example of the complete instrument used in this study can be found in Appendix D.

Data Collection Procedures

The procedures for collecting data included the following steps. First, university and college programs in Wuxi, Jiangsu were identified. The researcher could not find programs that offered specialized courses in entrepreneurship. Second, the researcher contacted university and college instructors for permission to administer the survey in their classrooms. Third, the researcher physically visited each of the program classrooms at a scheduled time to administer the survey. The researcher explained the purpose of the research and instructed participants how to correctly take the survey, including the importance of signing the consent statement. The researcher had between one to three student translators during each classroom visit to translate research and survey details

into Mandarin Chinese for the participants of this study.

Before surveys were given to students, the researcher stated clearly and with the help of student translators that participation in the survey was completely voluntary. The survey itself was printed and handed out to participants, then after a suitable amount of time collected by the researcher. Future researchers looking to reproduce this study should note that the best time to collect such data is during the academic semester when students are at university and college campuses.

Data Analysis

This section provides an explanation for how data is reported and a rationale for the analysis methods used. This study is quantitative and reports both descriptive and inferential statistical tests. Data was analyzed to determine the descriptive characteristics of the sample and to analyze the model factors used in this study. Descriptive characteristics of the sample provide an explanation of the composition of the participants in the sample. Descriptive analysis of the factors used in this study provide measures of central tendency, normality, and correlation (r). EIQ instrument reliability was tested using Cronbach's alpha. Entrepreneurship education single-item reliability was tested using a test-retest correlation coefficient (r). Regression analysis was used to test the four hypotheses of this study. The regression equation demonstrates the regression coefficient values, which were used to determine the direct impact of entrepreneurship education and other factors. An analysis of the overall regression model was used to test the significance of the model. This analysis included the adjusted coefficient of multiple

determination, the overall F test, and residual analysis. These tests allow researchers to determine the robustness of the regression model produced in this study.

Limitations

The limitations of this study are the following: This study has a geographic bias as data was collected from university and college programs in the same city, Wuxi, Jiangsu. The majority of participants are likely from Jiangsu Province. Therefore, the findings of this study may be limited. This study has a selection bias as the participants have been chosen due to convenience. The responses provided by participants concerning entrepreneurship education may be unique and therefore ungeneralizable to the larger population, which would limit the study's impact. This study used the antecedent factors of the Theory of Planned Behavior (Ajzen, 1991) and entrepreneurship education to predict entrepreneurial intention. Any confounding or more narrowly defined variables that may influence entrepreneurial intention beyond this framework cannot be accounted for in this model.

Chapter 4: Findings

The purpose of this study was to empirically test the impact of entrepreneurship education on entrepreneurial intention among university students in a developing country, specifically China. Meta-analytic investigations of the entrepreneurship education-entrepreneurial intention relationship report mixed results, stating an overall significant, but small positive correlation (Bae et al., 2014; Martin et al., 2013). According to Zhang et al. (2014), many studies have ignored whether entrepreneurship education can have a direct impact on entrepreneurial intention, representing a major void in the literature, which has motivated this study.

This chapter is organized as follows: First, descriptive characteristics of the sample will be presented. Second, instrument reliability tests will be presented. Third, a descriptive analysis of the factors used in the study will be presented. Fourth, the findings of each of the four hypotheses will be presented. Fifth, an analysis of the significance of the regression model will be presented. Finally, the findings of this study will be related to those in the literature.

Descriptive Characteristics of the Sample

This study obtained student questionnaire data from eleven Chinese university programs. Two of these programs, Wuxi South Ocean College Hotel Management and

Wuxi South Ocean College Aviation Services, are listed together as students from both programs were surveyed simultaneously. The criteria for participation in this study included being a Chinese national, university or college undergraduate student, majoring in any subject area, with or without entrepreneurship education, from the city of Wuxi, Jiangsu Province. Assumptions of the study include that participants are Chinese nationals, traditional undergraduate students, and have completed Chinese government mandated compulsory entrepreneurship training. A total of 423 questionnaires were returned to the researcher, of which 102 were unusable due to incompleteness, failure to correctly complete the questionnaire, or failure to sign the consent statement. An effective response rate of 75.8% was achieved with n = 321. Demographic data was not collected to avoid response fatigue.

Table 3 presents university program frequency and percentages. Of the eleven programs surveyed, nine were from the researcher's institution, Wuxi South Ocean College (WSOC), equaling 89.0% (n = 286) of the sample. Jiangnan University Business School is the only "Project 211" and "Double First-Class" institution in the sample, which are Chinese government educational policies and represent a university ranking system within China. The remaining institutions are vocational, non-ranked universities or colleges within China.

Table 3

Participants (n = 321) across University Program – Frequencies and Percentages

University Program	Frequency	Percentage
WSOC - Early Child Education	103	32.1%
Jiangnan University - Business School	30	9.3%
WSOC - Automotive Technology	11	3.4%
WSOC - Business School - Marketing Major	18	5.6%
WSOC - Business School - Accounting Major	46	14.3%
WSOC - University of New England Pathway Cohort 15	16	5.0%
Wuxi Institute of Technology - Business School	5	1.6%
WSOC - University of New England Pathway Cohort 16	8	2.5%
WSOC - Hotel Management & Aviation Services	71	22.1%
WSOC - Construction Management	13	4.0%
Total	321	100.0%

Instrument Reliability

This study used the Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009) to measure the antecedent factors of the Theory of Planned Behavior (Ajzen, 1991). The EIQ was developed to standardize instrumentation across different studies, making them more easily comparable. The EIQ measures personal attitude, subjective norms, perceived behavioral control, and entrepreneurial intention. Linan and Chen (2009) report Cronbach's alpha values between .773 and .943 in their original cross-cultural application of the instrument. Table 4 compares their original Cronbach's alpha values for each factor with those of this study, which range between .616 and .916. Personal attitude, perceived behavioral control, and entrepreneurial intention meet the preferred .7-or-higher reliability threshold recommended by Nunnally (1978) and Linan and Chen (2009). Subjective norms meet the .6 acceptable-reliability threshold recommended by Hair et al. (2006), Aron and Aron (1999). This result is

acceptable given subjective norms' lower number of items (Nunnally, 1978; Field, 2009) in the EIQ, and the instruments use in a new and culturally dissimilar context (Spector et al., 2015).

Table 4

Entrepreneurial Intention Questionnaire Reliability

Factor	Linan & Chen's (2009) Cronbach's Alpha	Current Study's Cronbach's Alpha
Personal Attitude	.897	.852
Subjective Norms	.773	.616
Perceived Behavioral Control	.885	.888
Entrepreneurial Intention	.943	.916

This study measured entrepreneurship education using a single-item method derived from Nowinski et al. (2017) where entrepreneurship education is measured using a seven-point scale. Reliability of the Nowinski et al. (2017) five-point, single-item method was not mentioned in their study, nor by correspondence (see Appendix E). This study used a test-retest correlation coefficient on a small subset of the sample as a measure of reliability. The subset chosen was WSOC University of New England pathway cohorts 15 & 16 (n = 24), with the test-retest equal to r = .978, p = .000, d = 9.219.

Descriptive Analysis

This section presents a descriptive analysis of the factors used in this study, including personal attitude (PA), subjective norms (SN), perceived behavioral control

(PBC), entrepreneurship education (EE), and entrepreneurial intention (EI). Table 5 summarizes the results.

Table 5

Descriptive Analysis of Model Factors

	PA	SN	PBC	EE	EI
Mean	4.8	4.6	3.3	1.6	3.5
Median	4.8	4.7	3.3	1.0	3.3
Mode	4.6	4.0	3.5	1.0	3.3
Standard Error	0.1	0.1	0.1	0.1	0.1
Standard Deviation	1.3	1.1	1.2	1.1	1.3
Sample Variance	1.6	1.2	1.4	1.2	1.8
Kurtosis	0.1	0.2	-0.5	4.1	-0.4
Skewness	-0.4	0.0	0.2	2.1	0.2
Range	6.0	6.0	5.2	5.0	6.0
Minimum	1.0	1.0	1.0	1.0	1.0
Maximum	7.0	7.0	6.2	6.0	7.0
Observations	321	321	321	321	321

Personal Attitude (PA). Personal attitude is defined as the degree of attractiveness an individual perceives toward being an entrepreneur (Ajzen, 2001; Autio, et al., 2001; Kolverreid, 1996). The instrument used to measure personal attitude was the Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009). The EIQ consists of five questions specific to personal attitude. Participants were able to respond on a scale ranging from 1 (total disagreement) to 7 (total agreement), with 4 representing a neutral response. Chinese and English versions of the EIQ can be viewed in the Appendix.

The mean score for personal attitude was 4.8. The median was 4.8 and the mode was 4.6. The mean, median, and mode scores are above a neutral response of 4. The standard deviation was 1.3. Skewness for the sample was -0.4. This result is within the guideline of +1.00 through -1.00 and considered approximately normal (Morgan, Leech, Gloeckner, & Barrett, 2004). Kurtosis for the sample was 0.1. This result is considered lepokurtic (Levine, Stephan, & Szabat, 2014) and within the guideline of +2 through -2 for approximate normality (Gravetter & Wallnau, 2014). Figure 2 presents the frequency distribution for personal attitude with a normal distribution curve given a mean value of 4.8 and a standard deviation of 1.3.

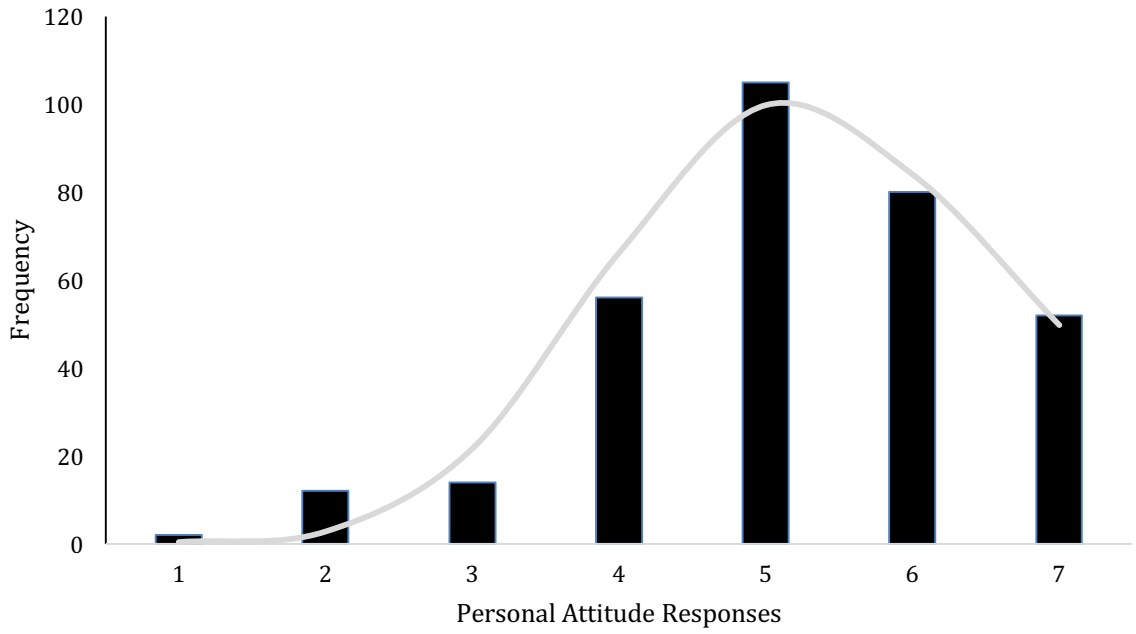


Figure 2. *Personal Attitude Frequency Distribution*

Subjective Norms (SN). Subjective norms are defined as the perception that "reference people" would approve or disapprove of an individual's decision to become an

entrepreneur (Ajzen, 2001). The instrument used to measure subjective norms was the EIQ (Linan & Chen, 2009). The EIQ consists of three questions specific to subjective norms. Participants were able to respond on a scale ranging from 1 (total disapproval) to 7 (total approval), with 4 representing a neutral response. Chinese and English versions of the EIQ are available in the Appendix.

The mean score for subjective norms was 4.6. The median was 4.7 and the mode was 4.0. The mean, median, and mode scores are at or above a neutral response of 4. The standard deviation was 1.1. Skewness for the sample was 0.0. This result meets guidelines of normality (Levine et al., 2014). Kurtosis for the sample was 0.2. This result is considered lepokurtic (Levine et al., 2014) and approximately normal (Gravetter & Wallnau, 2014). Figure 3 presents the frequency distribution for subjective norms with a normal distribution curve given a mean value of 4.6 and a standard deviation of 1.1.

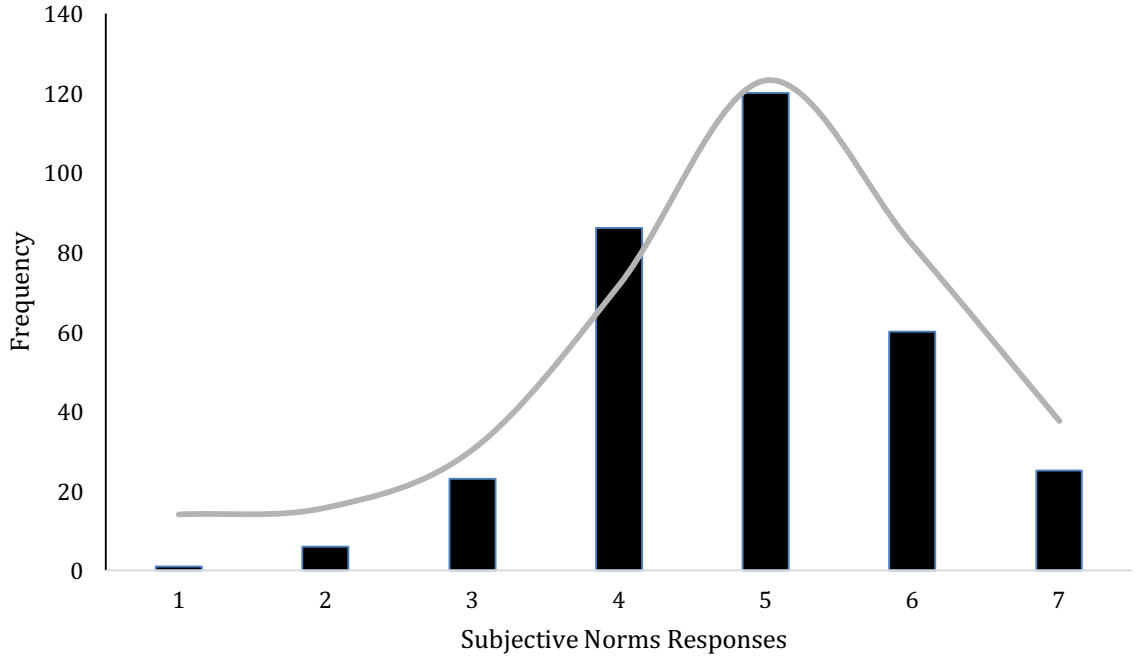


Figure 3. *Subjective Norms Frequency Distribution*

Perceived Behavioral Control (PBC). Perceived behavioral control is defined as the perception of difficulty or ease an individual would encounter being an entrepreneur (Linan & Chen, 2009). The instrument used to measure perceived behavioral control was the EIQ (Linan & Chen, 2009). The EIQ consists of six questions specific to perceived behavioral control. Participants were able to respond on a scale ranging from 1 (total disagreement) to 7 (total agreement), with 4 representing a neutral response. Chinese and English versions of the EIQ are available in the Appendix.

The mean score for perceived behavioral control was 3.3. The median was 3.3 and the mode was 3.5. The mean, median, and mode scores are below a neutral response of 4. The standard deviation was 1.2. Skewness for the sample was 0.2. This result meets guidelines of normality (Morgan et al., 2004). Kurtosis for the sample was -0.5. This

result is considered platykurtic (Levine et al., 2014) and approximately normal (Gravetter & Wallnau, 2014). Figure 4 presents the frequency distribution for perceived behavioral control with a normal distribution curve given a mean value of 3.3 and a standard deviation of 1.2.

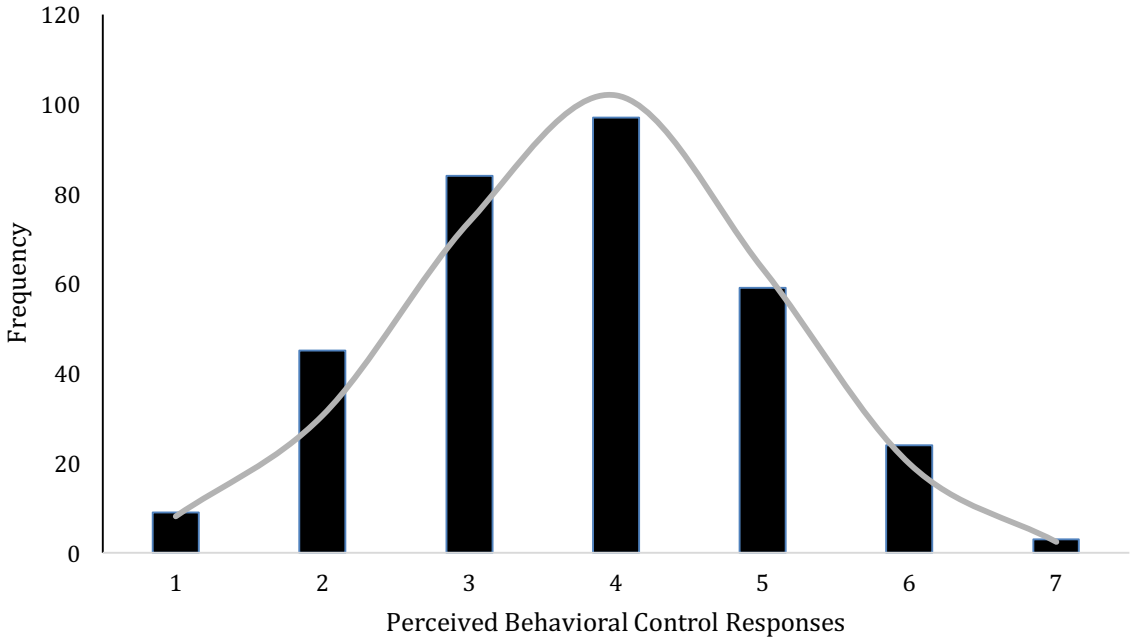


Figure 4. *Perceived Behavioral Control Frequency Distribution*

Entrepreneurship Education (EE). Entrepreneurship education is defined as the process whereby individuals learn the concepts and skills needed to recognize opportunities and have the insight and self-esteem to take action (McIntyre & Roche, 1999). The instrument used to measure entrepreneurship education is derived from Nowinski et al. (2017) and asked participants to classify their entrepreneurship education

on a scale ranging from 1 (no entrepreneurship education) to 7 (entrepreneurship major with venture creation experience).

The mean score for entrepreneurship education was 1.6. The median was 1.0 and the mode was 1.0. These scores indicate the sample has between no entrepreneurship education to workshop format training in a non-entrepreneurship class. The standard deviation was 1.1. Skewness for the sample was 2.1. This result suggests a positive, right-skewed distribution (Levine et al., 2004). Kurtosis for the sample was 4.1. This result is considered lepokurtic (Levine et al., 2014) and outside the range of approximate normality (Gravetter & Wallnau, 2014). Figure 5 presents the frequency distribution for entrepreneurship education with a normal distribution curve given a mean value of 1.6 and a standard deviation of 1.1.

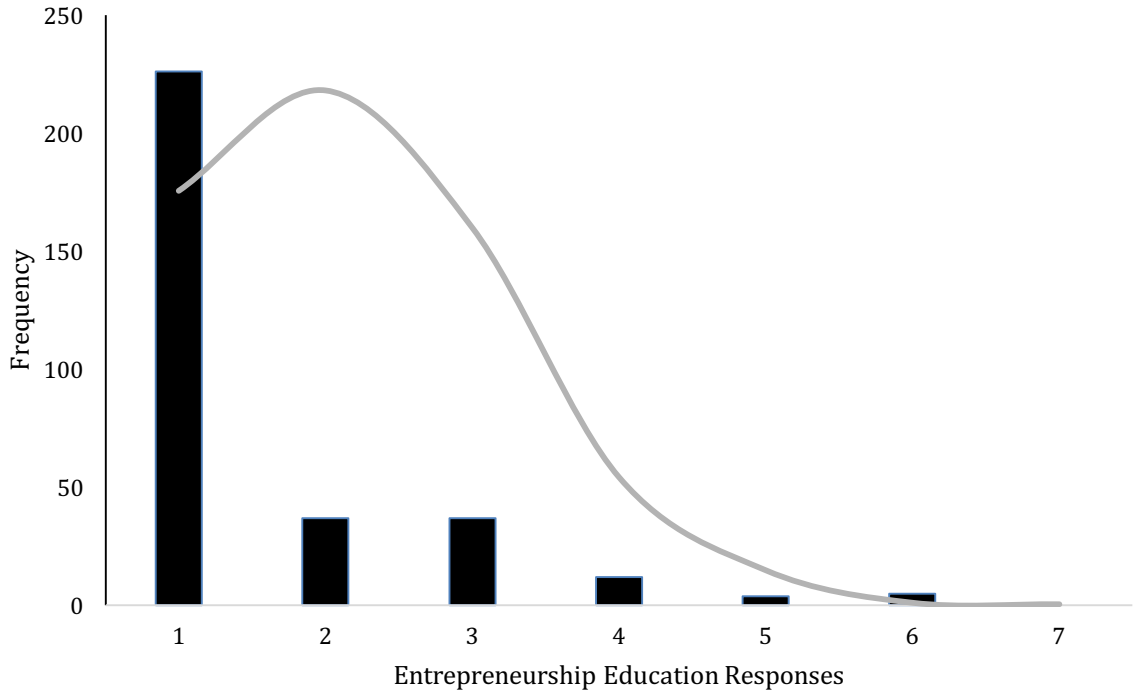


Figure 5. *Entrepreneurship Education Frequency Distribution*

Entrepreneurial Intention (EI). Entrepreneurial intention is defined as the intention to start a new business (Krueger, 2009). The instrument used to measure entrepreneurial intention was the EIQ (Linan & Chen, 2009). The EIQ consists of six questions specific to entrepreneurial intention. Participants were able to respond on a scale ranging from 1 (total disagreement) to 7 (total agreement), with 4 representing a neutral response. Chinese and English versions of the EIQ are available in the Appendix.

The mean score for entrepreneurial intention was 3.5. The median was 3.3 and the mode was 3.3. The mean, median, and mode scores are below a neutral response of 4. The standard deviation was 1.3. Skewness for the sample was 0.2. This result meets guidelines of normality (Morgan et al., 2004). Kurtosis for the sample was -0.4. This

result is considered platykurtic (Levine et al., 2014) and approximately normal (Gravetter & Wallnau, 2014). Figure 6 presents the frequency distribution for entrepreneurial intention with a normal distribution curve given a mean value of 3.5 and a standard deviation of 1.3.

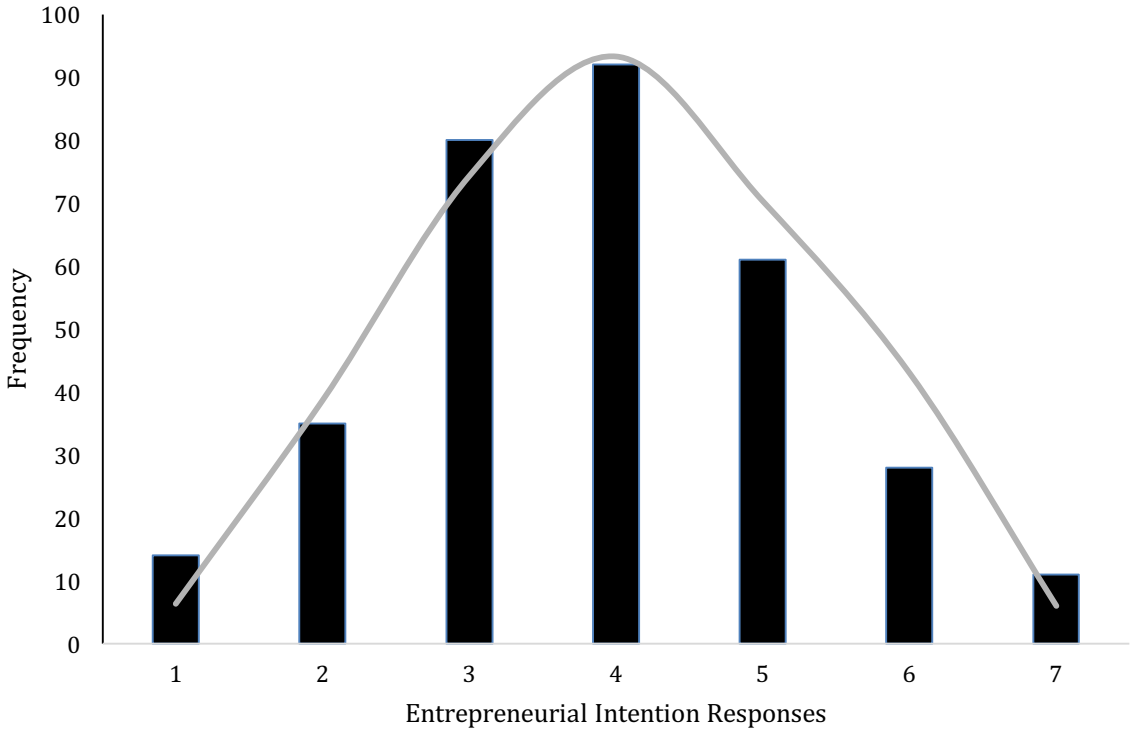


Figure 6. *Entrepreneurial Intention Frequency Distribution*

Correlation analysis. Table 6 presents the correlation analysis of model factors. The most recent meta-analysis of Bae et al. (2014) found the aggregate entrepreneurship education–entrepreneurial intention correlation to be r =.143 based on 74 samples (n = 37,285). This study finds r = .189, p = .000, d = .384, similarly indicating a small, but positive and statistically significant relationship. The strongest relationship among factors

was between perceived behavioral control and entrepreneurial intention (r = .652, p = .000, d = 1.718).

Table 6

Correlation Analysis of Model Factors

	PA	SN	PBC	EE	EI
PA	1	-	-	-	-
SN	0.434**	1	-	-	-
PBC	0.402**	0.234**	1	-	-
EE	0.154**	0.036	0.183**	1	-
EI	0.474**	0.242**	0.652**	0.189**	1

* and ** denote statistical significance at 5% and 1% respectively

Effect size. Table 7 presents the effect size results for each factor with entrepreneurial intention using Cohen's d test for separate groups t-test. The following is the formula used to calculate Cohen's d:

$$d = 2t / \sqrt{df}$$

where:

d = Cohen's d

t = t-test value

df = degrees of freedom

Cohen (1977; 1988) suggests interpreting effect size by the following guidelines: small effect (0.0 - 0.2), medium effect (0.3 - 0.5), large effect (0.6 - 0.8) very large effect (0.9 - 1.5) and extremely large effect (2.0).

Table 7

Effect Size using Cohen's d

	PA	SN	PBC	EE
EI	1.074	0.497	1.718	0.384
Effect Interpretation	Very Large	Medium	Extremely Large	Medium

Research Hypotheses

The regression analysis produced the following output, presented in Table 8.

Table 8

Regression Output

	β-Coefficients	P-value
Intercept	0.054	0.84
PA	0.259	0.00**
SN	0.008	0.88
PBC	0.607	0.00**
EE	0.064	0.21

* and ** denote statistical significance at 5% and 1% respectively

The following is the predictive regression equation:

$$\hat{Y}_{EI} = 0.054 + 0.259PA_i + 0.008SN_i + 0.607PBC_i + 0.064EE_i$$

where:

$\hat{Y}_{EI}$ = predicted entrepreneurial intention

0.54 = intercept

PA_i = personal attitude for student *i*

SN_i = subjective norms for student i

PBC_i = perceived behavioral control for student i

EE_i = entrepreneurship education for student i

Hypothesis 1 states personal attitude is positively related to entrepreneurial intention. Hypothesis 1 is supported, suggesting that personal attitude has a significant positive impact on entrepreneurial intention. Hypothesis 2 states subjective norms are positively related to entrepreneurial intention. Hypothesis 2 is not supported, indicating that the results are not statistically significant. Hypothesis 3 states perceived behavioral control is positively related to entrepreneurial intention. Hypothesis 3 is supported, suggesting that perceived behavioral control has a significant positive impact on entrepreneurial intention.

Hypothesis 4 states entrepreneurship education is positively related to entrepreneurial intention. Hypothesis 4 is not supported. The regression equation demonstrates that the predicted change in entrepreneurial intention per unit change in entrepreneurship education, holding constant the impact of personal attitude, subjective norms, and perceived behavioral control is minimal (β = 0.064). More importantly, this direct impact is not statistically significant (p = .21). As a result, there is no evidence to suggest that entrepreneurship education can stimulate entrepreneurial intention.

Table 9

Hypothesis Summary

Hypothesis	Statement	Findings	Conclusion
1	PA is positively related to EI	Significant & Positive	Supported
2	SN is positively related to EI	Not Significant - Positive	Not Supported
3	PBC is positively related to EI	Significant & Positive	Supported
4	EE is positively related to EI	Not Significant - Positive	Not Supported

Robustness and Significance of the Model

The robustness and significance of the overall regression model is evaluated by the adjusted coefficient of multiple determination (r^2_{adj}), the overall F test, and residual analysis. Table 10 presents the regression statistics, where r^2_{adj} = 0.4749. Therefore, 47.49% of the variation in entrepreneurial intention is explained by the regression model (adjusted for when df = k = 4, n = 321), making the model highly robust according to Cohen (1988; 1992).

Table 10

Regression Statistics

Multiple R	0.6939
R Square	0.4815
Adjusted R Square	0.4749
Standard Error	0.9766
Observations	321

Table 11 presents the ANOVA summary where the overall F test (Significance F) is equal to 0.000. This result indicates there is a significant relationship between entrepreneurial intention and the entire set of factors in the model (PA, SN, PBC, EE). In other words, the overall model is significant.

Table 11

ANOVA Summary

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	279.8389	69.9597	73.3538	0.0000**
Residual	316	301.3789	0.9537		
Total	320	581.2177			

* and ** denote statistical significance at 5% and 1% respectively

Residual analysis was conducted to visually evaluate the appropriateness of the model. This analysis tests the four assumptions of linear regression, including linearity, equal variance or homoscedasticity, normality, and independence of errors. The data collected for this study is not considered time-series data, therefore the independence of errors assumption is valid. Figure 7 presents the residual plot containing a polynomial trendline for the residuals (e_i) against the predicted entrepreneurial intention values ($\hat{Y}_{EI}$). There is little pattern in the relationship between the residuals and the values of $\hat{Y}_{EI}$, *PA, SN, PBC*, or *EE.* Therefore, it appears the regression model is appropriate for predicting entrepreneurial intention.

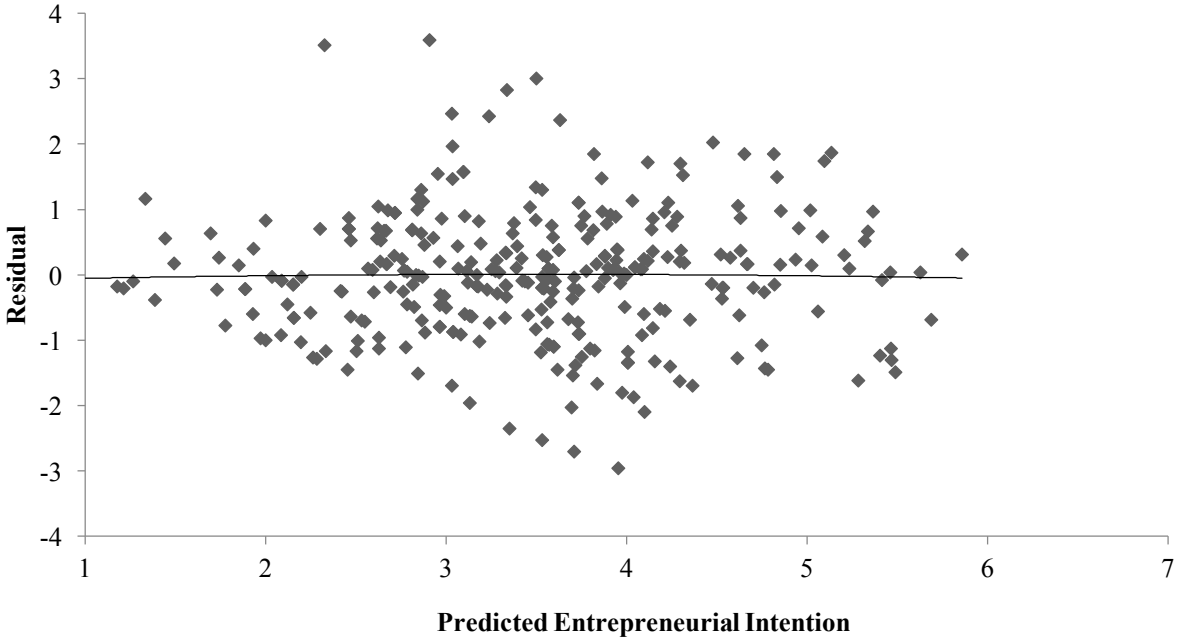


Figure 7. *Residual Plot with Polynomial Trendline - Residuals against Predicted EI*

Figures 8 though 11 present the residual plots with polynomial trendlines for each of the factors in the model. There is no obvious pattern or relationship between the residuals and the factors, despite widespread scatter in the residual plots and minor bending of the polynomial trendlines. The residual plots for personal attitude and entrepreneurship education marginally resemble a quadratic relationship, which may indicate the existence of a curvilinear effect and a potential violation of the linearity assumption.

The residual plots of personal attitude (Figure 8) and subjective norms (Figure 9) marginally resemble a fan shape where the variability of the residuals increase as these factors increase. There is some evidence that the equal variance assumption is violated. On the other hand, the residual plots for perceived behavioral control (Figure 10) and entrepreneurship education (Figure 11) demonstrate equal variance.

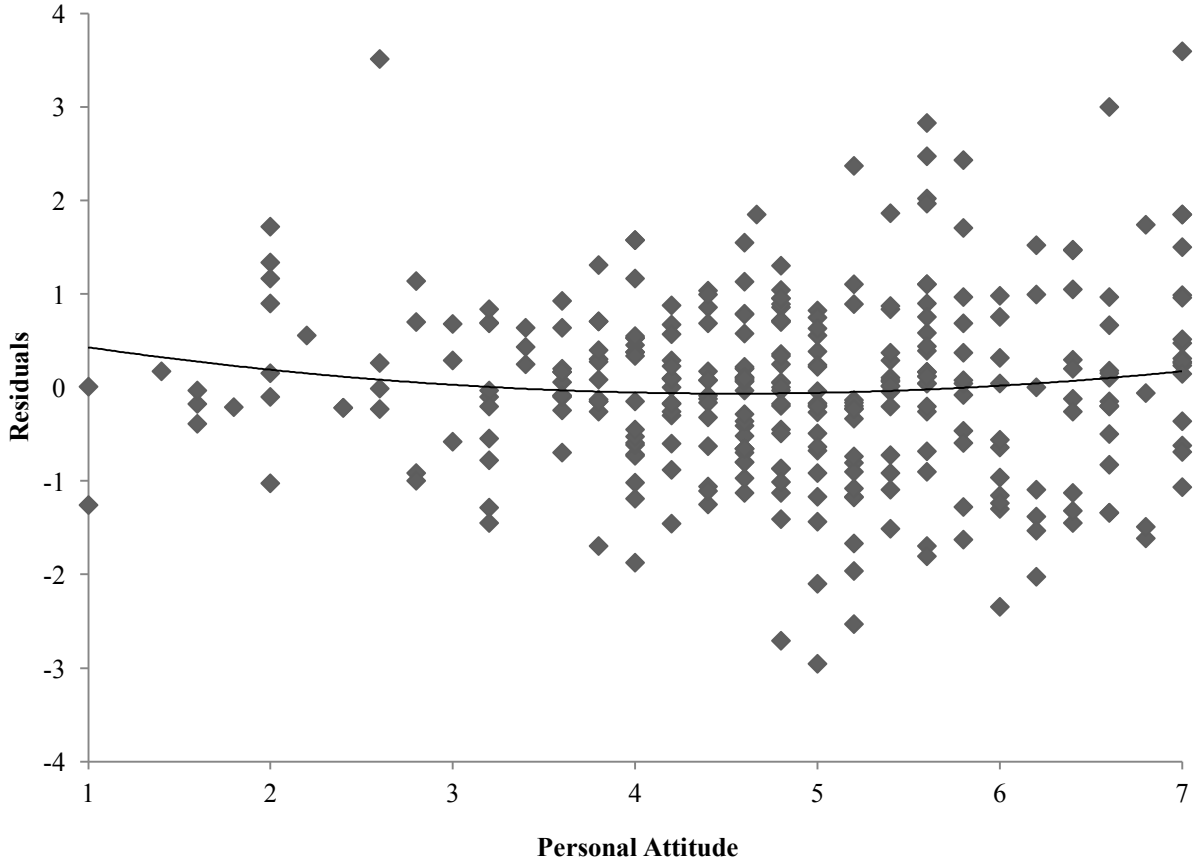


Figure 8. *Residual Plot with Polynomial Trendline - Residuals against Personal Attitude*

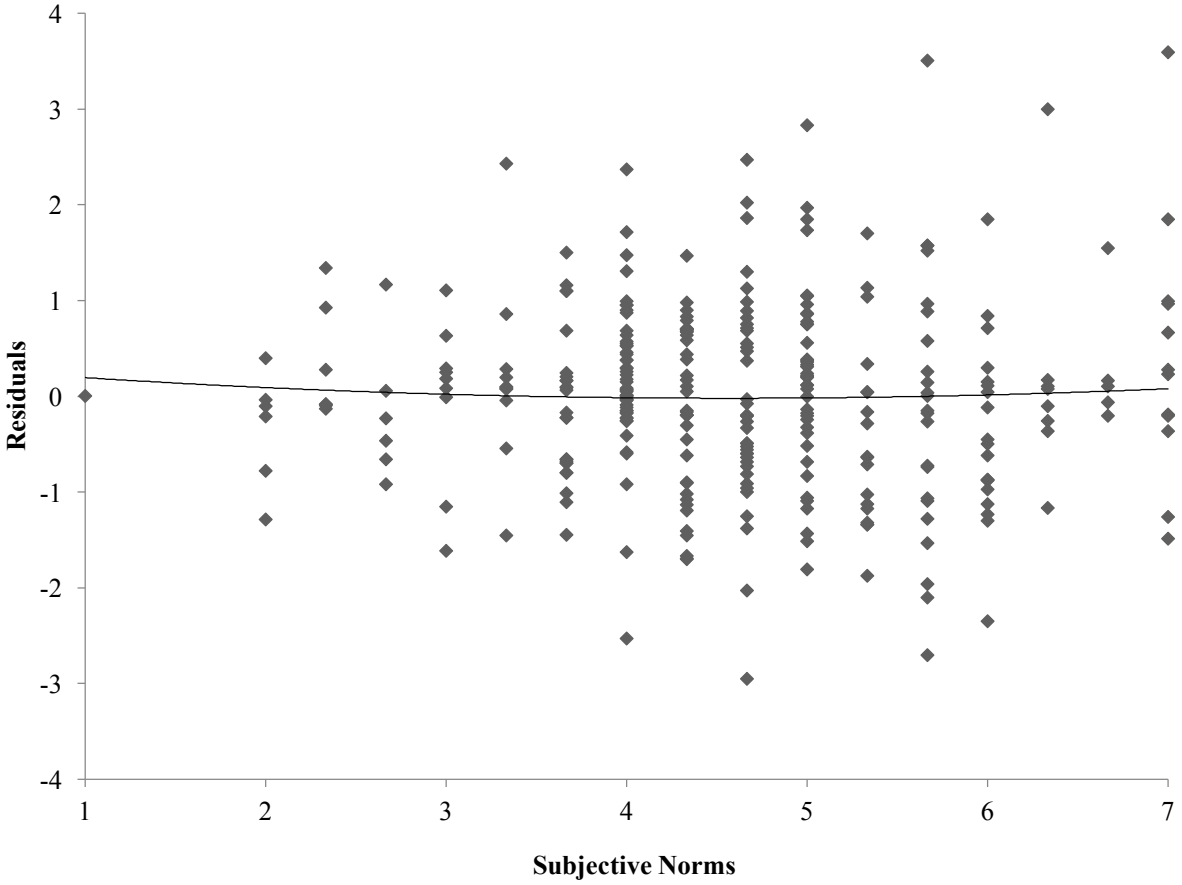


Figure 9. *Residual Plot with Polynomial Trendline - Residuals against Subjective Norms*

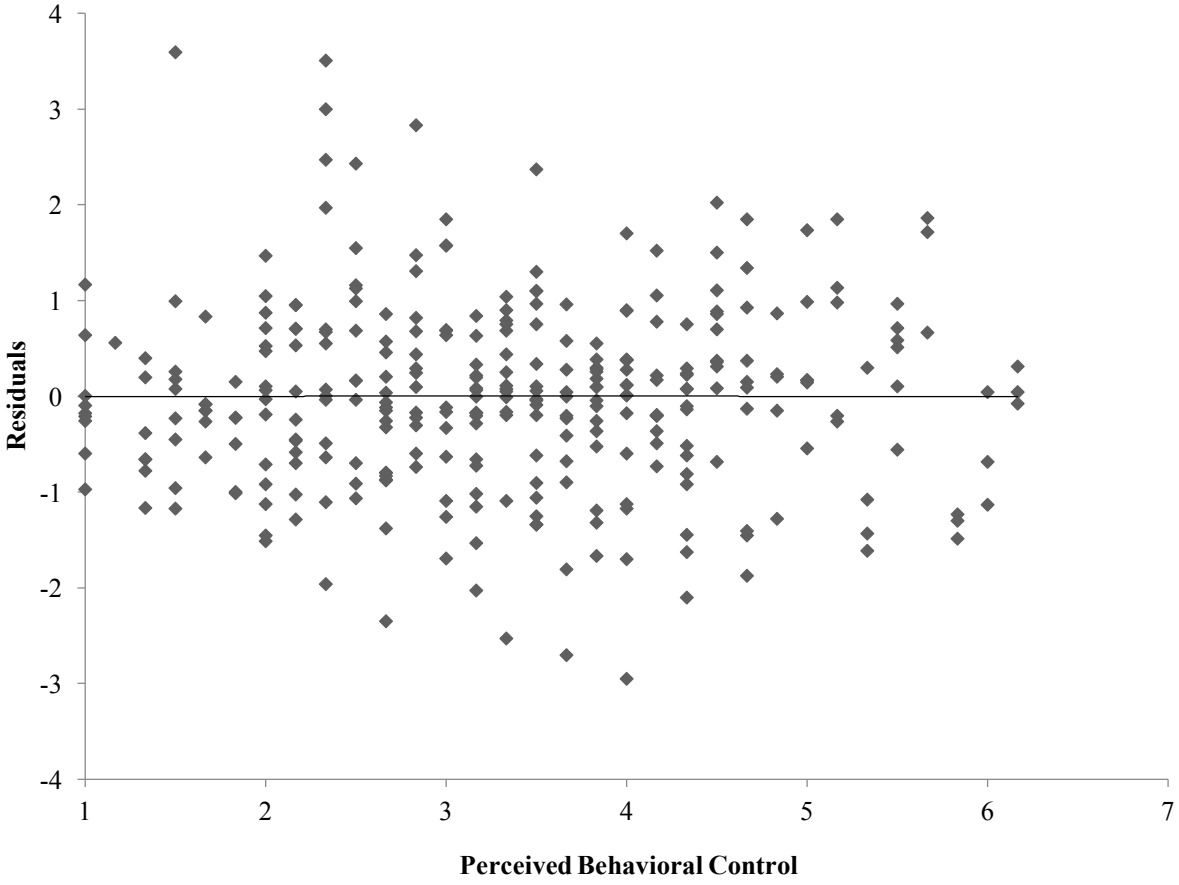


Figure 10. *Residual Plot with Polynomial Trendline - Residuals against Perceived Behavioral Control*

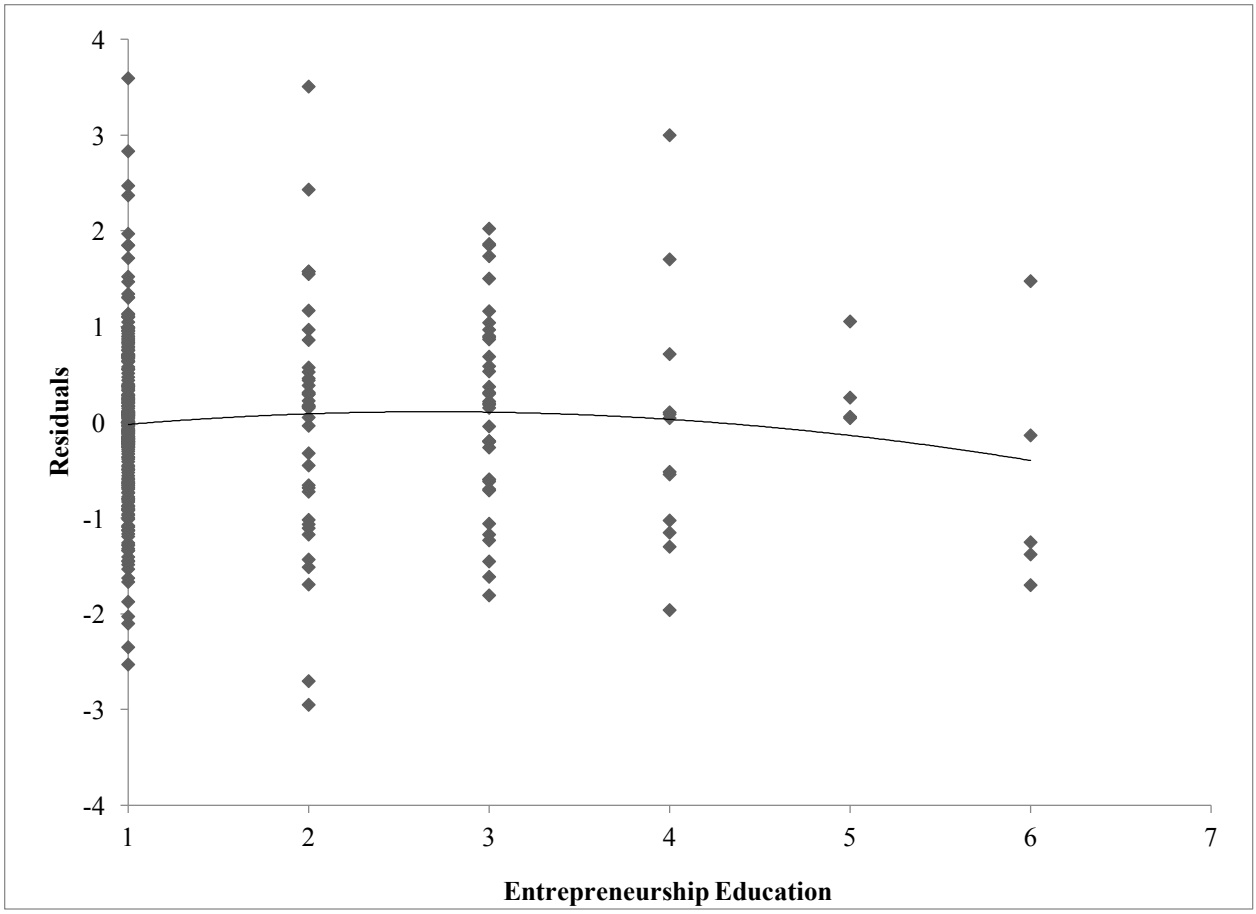


Figure 11. *Residual Plot with Polynomial Trendline - Residuals against Entrepreneurship Education*

Figure 12 presents the normal probability plot. The normal probability plot demonstrates that the points fall approximately along a straight line and that data do not depart substantially from a normal distribution, thus not violating the normality assumption.

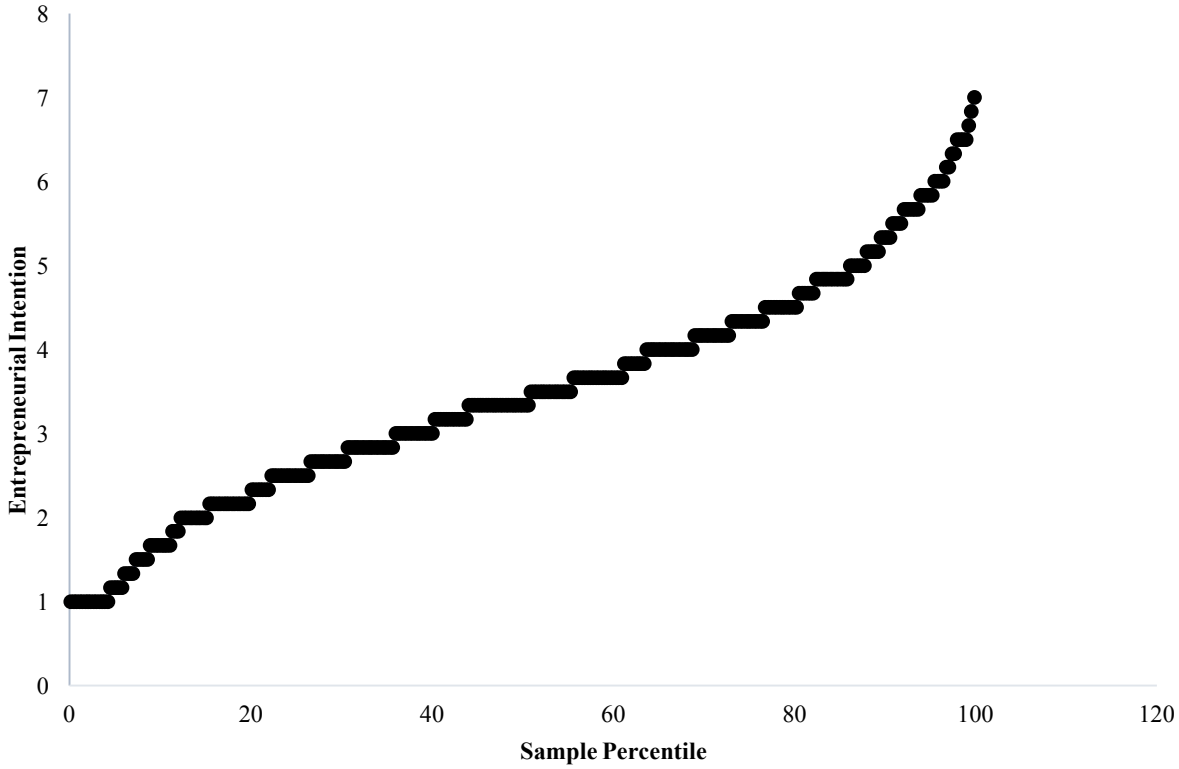


Figure 12. *Normal Probability Plot*

Summary of Findings

This study examined the impact of entrepreneurship education and antecedent factors of the Theory of Planned Behavior (Ajzen, 1991) on entrepreneurial intention. The findings presented in this chapter were analyzed using a sample of Chinese university students (n = 321). Descriptive characteristics demonstrated a diverse sample in terms of area of study, with many participants originating from vocational colleges. Reliability measures were acceptable among all factors. Descriptive analysis demonstrated the sample was normally distributed in all factors except entrepreneurship education and that significant positive correlations existed between all factors, including

entrepreneurship education, with entrepreneurial intention. Predictive regression modeling demonstrated significant positive impacts between personal attitude and perceived behavioral control with entrepreneurial intention, thus supporting hypothesis 1 and 3. Hypothesis 2 and 4 were not supported. This analysis provides no evidence that subjective norms or entrepreneurship education positively impact entrepreneurial intention. The robustness of the regression model was tested and proved to be significant. When taken together, the residual analysis also demonstrated the overall robustness of the regression model. Despite modest violations regarding the equal variance assumption, the regression model used in this study exhibits appropriateness for these data. The next chapter will present the implications of this study.

Chapter 5: Conclusions

This chapter summarizes the study starting with a review of the research methods presented in Chapters 1 and 3, followed by the findings presented in Chapter 4. The implications of the study's findings are then related to the literature examined in Chapter 2. Surprises are discussed and the study concludes with implications of this research for action and future research.

Summary of the Study

This study examined the impact of entrepreneurship education on entrepreneurial intention using quantitative methods and survey data from China. The study adopts Ajzen's (1991) Theory of Planned Behavior as the theoretical framework and Linan and Chen's (2009) Entrepreneurial Intention Questionnaire as the primary research instrument. The findings of this study suggest that entrepreneurship education is not positively related to entrepreneurial intention. This summary overviews the problem statement, purpose statement, research hypotheses, methodology, and major findings of the study.

Overview of the problem statement. Entrepreneurial intention is considered the first step in the entrepreneurial process (Lee & Wong, 2004; Fayolle et al., 2006; Kolvereid, 1996). Entrepreneurship education is an important antecedent of

entrepreneurial intention (Donckels, 1991; Crant, 1996; Robinson & Sexton, 1994; Gorman et al., 1997; Zhao et al., 2005). Studies investigating the entrepreneurship education-entrepreneurial intention relationship have produced mixed results, with an overall small, but positive and significant correlation (Bae et al., 2014). Few studies have investigated this relationship in the context of developing countries (Byabashaijia & Katono, 2011; Nowinksi et al., 2017; Hussian & Norashidah, 2015), and even less in China (Zhang et al., 2014; Cai & Kong, 2017). Many studies have ignored whether entrepreneurship education can have a direct impact on entrepreneurial intention (Zhang et al., 2014). Understanding the impact of entrepreneurship education on entrepreneurial intention in China is important as the country continues to develop its economy.

Overview of the purpose statement. The purpose of this study was to empirically test the impact of entrepreneurship education on entrepreneurial intention among university students in China. Better understanding the entrepreneurship education-entrepreneurial intention relationship provides implications for economic growth, national prosperity, and living standards to citizens in China and around the world. The Chinese government's "Mass Entrepreneurship and Innovation" campaign at Chinese colleges and universities has the objective of equipping students with entrepreneurial skills and abilities (Qiang et al., 2016). In December of 2014 the Chinese Ministry of Education requested all colleges and universities in China establish "Flexible Academic Systems" that enable students to create more jobs (Cai & Kong, 2017). This study provides a measurement for the effectiveness of entrepreneurship education policies in China. This study provides additional evidence to the ongoing debate concerning the overall relationship between entrepreneurship education and entrepreneurial intention.

This study contributes to the literature by providing additional empirical evidence from China, which has been an underrepresented thus far despite the country's global economic importance. Finally, this study provides practical implications to educators and administrators that wish to improve the effectiveness of their entrepreneurship pedagogy in China.

Research hypotheses. This study has four research hypotheses that were empirically tested. The Theory of Planned Behavior (Ajzen, 1991) provides three antecedent factors of entrepreneurial intention, including personal attitude, subjective norms, and perceived behavioral control. These three factors, in addition to entrepreneurship education, were used to formulate the research hypotheses. Prior empirical studies in China and elsewhere have produced mixed results (Zhang et al., 2014; Engle et al., 2010; Cai & Kong, 2017; Bae et al., 2014; Martin et al., 2013). Despite inconsistency in the literature, the expectations for the research hypotheses were the following:

Hypothesis 1: Personal attitude is positively related to entrepreneurial intention.

Hypothesis 2: Subjective norms are positively related to entrepreneurial intention.

Hypothesis 3: Perceived behavioral control is positively related to entrepreneurial intention.

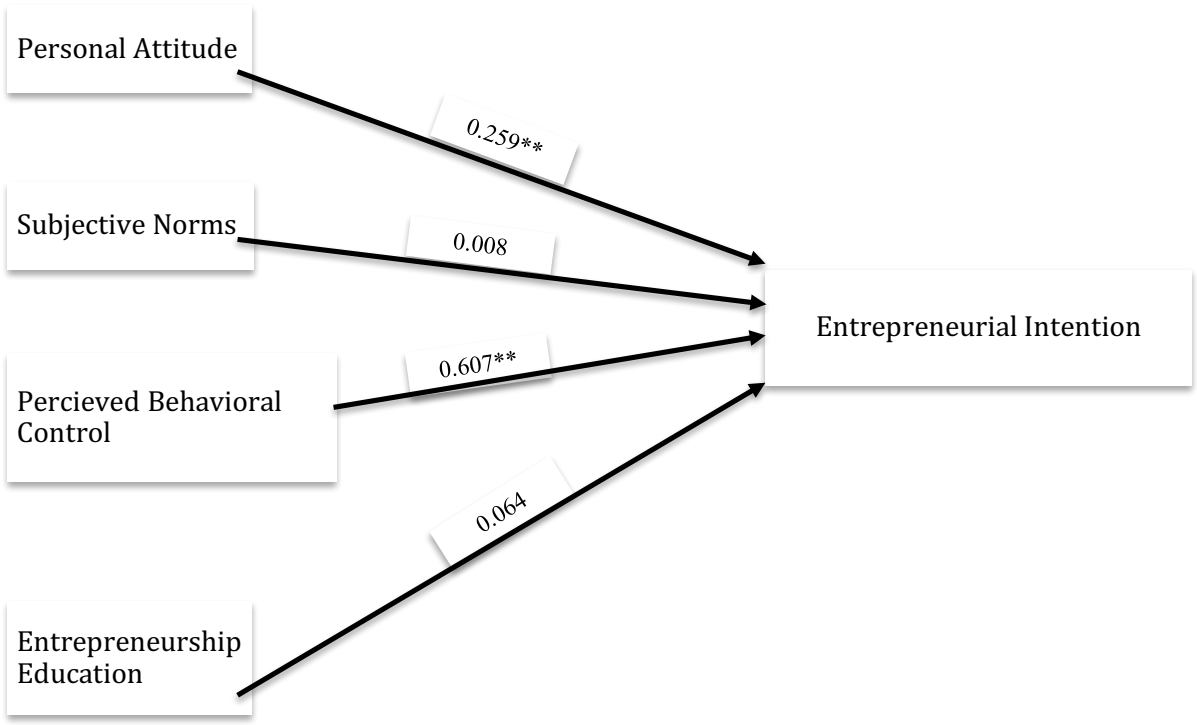
Hypothesis 4: Entrepreneurship education is positively related to entrepreneurial intention.

Review of the methodology. This study used quantitative methods and survey data from Chinese university students to test the four research hypotheses listed above. Data was collected using the Entrepreneurial Intention Questionnaire (Linan & Chen,

2009) and a single-item measure of entrepreneurship education. Undergraduate students from eleven Chinese university and college programs in the city of Wuxi, Jiangsu were surveyed. The majority of sample participants attended vocational colleges. The researcher visited ten classrooms in person to administer the questionnaire. Two programs, Wuxi South Ocean College Hotel Management and Wuxi South Ocean College Aviation Services, were surveyed together. Questionnaires were printed and given to each student. The researcher provided an explanation for the purpose of the research and made clear that participation in the study was voluntary. At least one Chinese-speaking translator was present for each of the ten classroom visits to assist the researcher. The researcher collected a total of 423 questionnaires and was able to use 321 for analysis (n = 321). The data analysis techniques of this study included descriptive statistics such as measures of central tendency and normality, as well as inferential statistical tests such as regression and variance analysis. The regression model was also tested for significance and robustness.

Major findings. The findings presented in Chapter 4 demonstrate a diverse sample in terms of area of study, with the majority of participants originating from vocational college programs. Sample inclusion of vocational college students differs substantially from past studies done in China and represents a major contribution of this study to the field. Measures of reliability were acceptable among all factors. Sample data was normally distributed in all factors, except entrepreneurship education, which limits the findings of this study. Significant positive correlations existed among all factors in the model, including between entrepreneurship education and entrepreneurial intention ($r = .189$, $p = .000$, $d = .384$). The regression model demonstrated that personal attitude (ß =

.259, p = .000) and perceived behavioral control (β = .607, p = .000) are positively related to entrepreneurial intention, thus supporting hypothesis 1 and 3. The regression model also demonstrated that subjective norms (ß = .008, p = .879) and entrepreneurship education (ß = .064, p = .211) are not positively related to entrepreneurial intention, thus providing no evidence to support hypothesis 2 and 4. The regression model was tested for significance and robustness finding that the model is both significant and robust given the data. Figure 13 presents the direct impact of each of the antecedent factors on entrepreneurial intention.



* and ** denote statistical significance at 5% and 1% respectively

Figure 13. *Theoretical Framework Revisited – Summary Results*

Implications Related to the Literature

This section discusses the implications of this study to previous studies in the literature with emphasis on past studies done in China.

The Theory of Planned Behavior. The study's findings confirm the applicability of Ajzen's (1991) Theory of Planned Behavior as the overall regression model was both significant (f = .000) and robust (r^2_{adj} = 0.4749). The implication of this result to the literature is validation of the theory in China. This study is among several that have found various factors of the Theory of Planned Behavior (Ajzen, 1991), or their equivalents, successful in predicting entrepreneurial intention in China (Engle et al., 2010; Cai & Kong, 2017; Zhang et al., 2014).

Entrepreneurial Intention Questionnaire. This study used the Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009) to measure the factors of the Theory of Planned Behavior (Ajzen, 1991). Linan and Chen found the EIQ to be robust across different languages and cultures with Cronbach's alpha values ranging from .773 to .943. Linan and Chen cite Nunnally's (1978) recommended reliability threshold of .7 or higher as a preferred level for Cronbach's alpha values. This study found Cronbach's alpha values between .616 and .916. Only subjective norms did not meet the preferred .7 threshold, however did met the .6 acceptable threshold suggested by several scholars (Hair et al., 2006; Aron & Aron, 1999; Spector et al., 2015). The implication of the divergent reliability result is that the EIQ measurement of subjective norms may need improvement in China. Subjective norms seem to be problematic either as a factor in the model or as its being measured in the EIQ. Reliability improvements in

the subjective norms component of the EIQ is recommended before challenges or modifications can be made to the Theory of Planned Behavior (Ajzen, 1991).

The entrepreneurship education-entrepreneurial intention relationship. This study found no evidence that entrepreneurship education positively impacts entrepreneurial intention in China. This result is similar to Zhang et al. (2012) who also found no direct impact. This study differs from Cai and Kong (2017) and Zhang et al. (2014) who found a positive and significant relationship. The implication of this result to the literature is that empirically it is unclear how entrepreneurship education impacts entrepreneurial intention in China. A potential explanation for the divergent findings of this study with those that reported a significant relationship may be due to differences in instrumentation and analysis, and the composition of sample participants.

Instrumentation and analysis. Where Cai and Kong (2017) and Zhang et al. (2014) measured entrepreneurship education with a yes or no, single-item instrument coupled with a Probit Maximum Likelihood Regression, this study used a single-item 7-point classification instrument to determine the participants degree of entrepreneurship education and a Least-Squares Multiple Regression Model. This study's sample lacked higher levels of entrepreneurship education ($\bar{x}$ = 1.6), and measures of central tendency demonstrated violations of a normal distribution (Skewness = 2.1, Kurtosis = 4.1) which likely differed with Cai and Kong (2017) and Zhang et al. (2014).

Sample participants. Importantly, students surveyed in the Zhang et al. (2014) and Cai and Kong (2017) studies were from China's leading universities. The Zhang et al. (2014) sample in particular included several "C9" institutions. Half of the Zhang et al. (2014) sample consisted of institutions considered entrepreneurship education focused.

The Chinese government labels universities as “Project 211” or “Double First-Class” universities when educational quality measures are met and these terms are used as a ranking system within China. It is possible leading universities could impact student entrepreneurial intention more strongly than regional or community vocational colleges, as seen in this study. This result may be due to higher pre-existing student entrepreneurial intention and better access to educational and entrepreneurial resources at higher ranked universities in China. Table 12 summarizes findings across these studies in China.

Table 12

Entrepreneurship Education's Impact on Entrepreneurial Intention Studies in China Revisited

Author	Model(s)	Method	Sample	EE-EI Findings
Zhang et al. 2012	Carve-out Education & Entrepreneurial Intention	SEM	200 participants across China	No Impact (Indirect Impact)
Chen, 2010	Social Cognitive Theory	Not specified	Not specified	Indirect Impact
Cai & Kong 2017	Theory of Planned Behavior; Entrepreneurial Event Model	Probit Regression Model	274 participants at Fuzhou University	Direct and Positive Impact
Zhang et al. 2014	Theory of Planned Behavior; Entrepreneurial Event Model; Entrepreneurial Cognition Theory	Probit Regression Model	494 participants, 10 leading Chinese universities	Direct and Positive Impact
Current Study	Theory of Planned Behavior	Least-Squares Multiple Regression Model	321 participants, 11 programs, 3 universities	No Impact

Comparisons across studies. This study found significant positive effects between personal attitude (PA: ß = .259, p = .000) and perceived behavioral control (PBC: ß = .607, p = .000) with entrepreneurial intention (EI). No impact was found between subjective norms (SN: ß = .008, p = .879) and entrepreneurial intention (EI). Cai and Kong (2017) found similar results among these factors. Zhang et al. (2014) found the equivalent of personal attitude to be positive and significant with entrepreneurial

intention. However, Zhang et al. (2014) found the equivalent of subjective norms to be negative and significant, and perceived behavioral control to be not significant. The implications of these results demonstrate the clear need for additional empirical testing in China. Table 13 compares findings in China and demonstrates the inconsistency across studies.

Table 13

Factor Relationships or Equivalents across studies in China

	PA - EI	SN - EI	PBC - EI	EE - EI
Zhang et al. 2012	N/A	N/A	N/A	No Impact
Cai & Kong 2017	Positive/Significant	No Impact	Positive/Significant	Positive/Significant
Zhang et al. 2014	Positive/Significant r = 0.57 ß = 1.02**	Negative/Significant r = -0.04 ß = -0.48*	No Impact r = 0.45 ß = 0.14	Positive/Significant r = 0.32 ß = 0.45**
Current Study	Positive/Significant r = 0.474** ß = 0.25**	No Impact r = 0.242** ß = 0.008	Positive/Significant r = 0.652** ß = 0.607**	No Impact r = 0.189** ß = 0.064

* and ** denote statistical significance at 5% and 1% respectively

Surprises

This section discusses unusual problems and surprising outcomes of the study. An unusual problem of the study was the lack of participants with higher levels of entrepreneurship education. Initiatives by the Chinese government has made entrepreneurship training compulsory for incoming universities students, likely increasing the exposure of such education. Yet, the researcher had difficulty finding

semester format courses offered by universities in and near Wuxi, Jiangsu Province. Participants of this study may have forgotten or been confused whether their compulsory training constitutes actual entrepreneurship education. As a result, entrepreneurship education sample responses were positively skewed (Skewness = 2.1, Kurtosis = 4.1).

Perhaps not surprising, the subjective norms-entrepreneurial intention relationship appears to be complex. Prior findings have confirmed the applicability of subjective norms within Theory of Planned Behavior models in multiple contexts (Krueger et al., 2000; Audet, 2002; Paco et al., 2011; Engle et al., 2010; Linan & Chen, 2009; Iakovleva et al., 2011; Karimi et al., 2014). Findings in China have varied thus far. Carr and Sequeira (2007) argue that prior entrepreneurial exposure, or subjective norms, depend on the experiences of the participants. Individual experiences vary from person to person. Students may have witnessed positive or negative outcomes of entrepreneurship among their family and friends, such as entrepreneurial success, wealth creation, higher standards of living, or the opposite such as bankruptcy, long work hours, and stress (Carr & Sequeira, 2007; Zhang et al., 2014). It is also possible that students lack exposure to entrepreneurship altogether, making them unknowledgeable and unable to draw from experience. The volatile and often non-significant findings discussed in this study and others (Zhang et al., 2014; Linan & Chen, 2009) indicate this factor deserves more attention from entrepreneurship scholars.

A surprising result of this study is the contrasting findings with Zhang et al. (2014). Where this study found no evidence of a significant positive effect between entrepreneurship education and entrepreneurial intention, Zhang et al. (2014) did. Where this study found a strong effect between perceived behavioral control, alternatively

perceived feasibility, and entrepreneurial intention, Zhang et al. (2014) found no impact. Where this study found no impact between subjective norms, alternatively prior entrepreneurial exposure, and entrepreneurial intention, Zhang et al. (2014) found a significant negative impact.

The composition of sample participants between the two studies deserves additional attention. Zhang et al. (2014) surveyed students from ten leading Chinese universities, including two prestigious "C9" universities, and three "Class A" universities. The remaining five universities surveyed are considered "Double First Class" universities by the Chinese government. The other study that demonstrated a positive and significant impact between entrepreneurship education and entrepreneurial intention in China, done by Cai and Kong (2017), surveyed students from Fuzhou University, also a "Double First Class" university. It may be possible that higher ranked universities contribute toward a positive entrepreneurship education-entrepreneurial intention relationship. Table 14 compares universities and colleges across studies in China.

Table 14

Universities and Colleges across studies in China

Study/University	Government University Rank
Zhang et al. 2014	
Chinese Academy of Science	Double First Class
Tsinghua University	C9, Class A
Beihang University	Class A
Renmin University	Class A
Beijing Institute of Technology	Class A
Bejing University of Technology	Double First Class
Central University of Finance and Economics	Double First Class
Shanghai University	Double First Class
Wuhan University of Technology	Double First Class
Zhejiang University	C9, Class A
Cai & Kong, 2017	
Fuzhou University	Double First Class
Current Study	
Wuxi South Ocean College	Vocational College
Jiangnan University	Double First Class
Wuxi Institute of Technology	Vocational College

C9 = Top 9 university, Class A = Top 36 university, Double First Class = Top 95 university

Within the current study's sample, only Jiangnan University is considered a "Double First Class" university, representing 9.3% of the sample. The remainder of the sample consists of students from vocational colleges. Consequently, this study is largely an out-of-sample test from the universities surveyed by Zhang et al. (2014) and Cai and Kong (2017). The findings of this study challenge the conclusions made by Zhang et al. (2014) that "taking entrepreneurship education can stimulate entrepreneurial intention and improve the probability of this intention-making" (p. 637). This statement may not be accurate at Chinese vocational colleges.

Conclusions

This final section presents the implications of the study, recommendations for future research, and concluding remarks. The researcher offers recommendations based on the findings of this and other studies which may improve outcomes for students, educators, university administrators, policy-makers, and entrepreneurship scholars.

Implications for action. This study found no evidence that entrepreneurship education positively impacts entrepreneurial intention among university students in China. This finding is limited as the mean score for entrepreneurship education from the sample was comparatively low ($\bar{x}$ = 1.6), resulting in a right-skewed distribution (Skewness = 2.1, Kurtosis = 4.1). This finding is consistent with Zhang et al. (2012), but deviates from the recent findings of Zhang et al. (2014) and Cai and Kong (2017). The beneficiaries of this study include students, educators, university administrators, policy-makers, and entrepreneurship scholars.

This study suggests to university students, educators, and administrators in China that entrepreneurship education programs are not effective in developing a student's intention of starting a business. University communities in China gain from this knowledge by understanding that entrepreneurship education may not be an effective practice for increasing student entrepreneurial intention. Universities and colleges in China that wish to encourage entrepreneurship are recommended to consider selection-based approaches rather than treatment-based approaches. Selection-based approaches consider the self-selection bias, which refers to an individual's pre-existing entrepreneurial intention (Linan, 2004; McMullan & Long, 1987; Noel, 2002).

One explanation for why Zhang et al. (2014) and Cai and Kong (2017) found a significant, positive effect between entrepreneurship education and entrepreneurial intention, while this study did not, may be due to a pre-existing self-selection bias among sample participants. Zhang et al. (2014) and Cai and Kong (2017) surveyed students who attended China's leading, most prestigious, and technologically-focused universities. It may be possible that students who meet this profile have higher levels of pre-existing entrepreneurial intention regardless of whether they attain entrepreneurship education. Contrastingly, students from this study's sample primarily attended vocational colleges where entrance exam scores, known as the Gao Kao, educational and entrepreneurial resources, as well as tuition are likely much lower. Sample participants' areas of study consisted of such majors as early childhood education, construction management, hotel management, accounting, and other vocational areas. It is likely students who attend these and similar vocational colleges in China originate from lower income families compared to those that attend top universities. Many of the students surveyed in this study appeared to forget they attended the government mandated entrepreneurship training or did not think it qualified as entrepreneurship education, which is also an indication of program ineffectiveness.

This study suggests to policy-makers in China that current entrepreneurship initiatives, such as the "Mass Entrepreneurship and Innovation" campaign (Qiang et al., 2016) and "Flexible Academic Systems" (Cai & Kong, 2017) may not be effective. Policy-makers gain from this knowledge by accepting this study as a measure of entrepreneurship-policy performance. Policy-makers are recommended to use their resources to better support current and active entrepreneurs, possibly with

entrepreneurship education, rather than attempt to increase the entrepreneurial intention of students in the mass population. Policy-makers may feel it necessary to increase mandatory training as a result of this study. However, the meta-analysis of Bae et al. (2014) found no support that long-duration semester-format entrepreneurship education improved entrepreneurial intention better than short-duration seminar-style, which is currently offered to students in China. Bae et al., (2014) found no support that a pedagogical design which includes venture creation improves student entrepreneurial intention better than a design which includes the drafting of a business plan. It is important that policy-makers in China keep in mind that the impact of entrepreneurship education on entrepreneurial intention is currently unclear.

This study suggests to entrepreneurship scholars that entrepreneurship education does not lead to a greater intention of starting a business among Chinese university students. Scholars gain from this knowledge by understanding that the entrepreneurship education-entrepreneurial intention relationship in China is currently inconclusive. Further empirical research in China is needed to better understand this relationship. Several recommendations to scholars are offered for future research in the following section.

Recommendations for future research. The lack of a conclusive understanding between entrepreneurship education and entrepreneurial intention in China warrants further research. Recommendations offered here may improve future studies of entrepreneurial intention.

Subjective norms measurement. Subjective norms refer to the perception that "reference people" would approve or disapprove of an individual's decision to become an

entrepreneur (Ajzen, 2001). The Entrepreneurial Intention Questionnaire lists reference people as family, friends, and colleagues (Linan & Chen, 2009). Studies using subjective norms to predict entrepreneurial intention have produced mixed results (Linan & Chen, 2009; Karimi et al., 2014), including this study and others done in China (Cai & Kong, 2017; Zhang et al., 2014). This has driven some scholars to modify or eliminate the use of subjective norms from their intention-based models (Krueger et al., 2000; Bagozzi et al., 1992; Zhang et al., 2014).

Clearly subjective norms are an important and complex antecedent factor of entrepreneurial intention. Current research methods are failing to accurately capture its significance. Future research should expand on the Entrepreneurial Intention Questionnaire (Linan & Chen, 2009) in order to more narrowly describe, measure, and report its influence on entrepreneurial intention. Wang (2012) states Chinese families provide advantages to student entrepreneurs through personal involvement, financial support, leveraging of social networks, and promoting achievement-oriented education. At the same time, Chinese families can negatively impact student entrepreneurship by discouraging proactive behavior in formal settings, over-concerning themselves with others' estimation of their self-image, and an over-dependence on implicit rules that restrain entrepreneurial and innovative activities (Wang, 2012). Studies that more precisely measure subjective norms, including such elements of family influence as describe by Wang (2012), would produce important findings.

Sampling procedures. Future studies that investigate the impact of entrepreneurship education on entrepreneurial intention in China are recommended to survey larger, more diverse samples. The dataset used in this study consisted of

university and college students in the city of Wuxi, Jiangsu. The majority of participants surveyed state they did not receive entrepreneurship education. This sample differed with those of Zhang et al. (2014) and Cai and Kong (2017), which in turn produced different results. Findings thus far may not accurately represent students in China. Future studies where samples contain a diverse range of cities, regions, universities, types of universities, both leading and vocational, areas of study, gender, age, education-level, and entrepreneurship education experience would produce more robust findings. Larger sample sizes would also assist the development of this research.

Data collection procedures. Future studies investigating entrepreneurship education can benefit from conducting both ex-ante and ex-post testing. This procedure would control for the self-selection bias which jeopardizes the credibility of entrepreneurship education research findings. Many scholars have recommended future studies conduct pre-post testing to determine differences in entrepreneurial intention (Byabashaija & Katono, 2011; Rideout & Gray, 2013; Karmini et al., 2014) however it has been slowly adopted by researchers.

Entrepreneurship education measurement. This study measured entrepreneurship education using a single-item seven-point scale derived from the Nowinski et al. (2017) single-item five-point scale. This method determines an individual's quantity of entrepreneurship education, ranging from (none = 1) to (an entrepreneurship major with venture creation experience = 7). Agreeing with Nowinski et al. (2017), future studies can benefit from multi-item measures of entrepreneurship education. While this study is an improvement from simplistic (yes-have/no-do not have) methods used by Zhang et al. (2014) and Cai and Kong (2017), it fails to account for

potential influences such as the quality of the instruction. Tounes (2006) argues for the need to incorporate qualitative aspects in the measurement of entrepreneurship education, while Timmons and Spinelli (2004) stress the need to account for the effectiveness of the entrepreneurship education training. It is reasonable to assume that an educator's delivery of entrepreneurship can greatly impact a student's entrepreneurial intention and therefore should be considered in future studies.

The intention-behavior relationship. Future research should focus on the intention-behavior relationship, which has been studied even less than the relationship between antecedent factors and entrepreneurial intention (Karmini et al., 2014). Future longitudinal studies that compare entrepreneurial intention long after entrepreneurship education is delivered, as well as studies that examine whether students started businesses years later would also be insightful.

Concluding remarks. Entrepreneurship is vital to humanity given its impact on jobs, economic efficiency, and innovation (Shane & Venkataraman, 2000; Hindle & Rushworth, 2000). One of the central questions in entrepreneurship research asks why some people become entrepreneurs and others do not (Barron, 2004). Intention-based models, such as the Theory of Planned Behavior (Ajzen, 1991), attempt to answer this question. While the theory's antecedent factors are broad and cover the general influences of entrepreneurial intention well, these factors may need to be further deconstructed and measured more precisely to produce richer findings. For example, perceived behavioral control measures a student's perception of their ability to access financial capital for potential entrepreneurial endeavors, however it is likely not captured well during the data gathering process. Subjective norms as measured by the EIQ (Linan

& Chen, 2009) likely does not sufficiently capture the advantages and disadvantages related to Chinese family dynamics as stated by Wang (2012). Perhaps these influences would be better understood if they were independent factors in an intention-based model.

The chief finding of this study is that entrepreneurship education does not positively impact entrepreneurial intention among university and college students in China. In other words, entrepreneurship courses and training do not increase a student's intention of starting a business. The participants surveyed in this study differ substantially from those in past studies that reported a positive and significant relationship and therefore largely represented an out-of-sample test of the a priori hypothesis. As a result of this study, the relationship between entrepreneurship education and entrepreneurial intention in China is still unclear and in need of further empirical testing. If scholars are to believe that entrepreneurship education is in fact a positive influence on entrepreneurial intention in China, then it must be demonstrated beyond the country's leading, most prestigious, and technologically focused universities. Any hypothesis must be validated in an out-of-sample test to prove its robustness as a predictive factor.

References

Aday, L. (1996). *Designing and conducting health surveys*. San Francisco: Jossey-Bass.

Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory and Practice, 30*(5), 595-621.

Ajzen, I. (1987). Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social-psychology. In L. Berkowitz, *Advances in Experimental Social Psychology*, (pp. 1-63). New York: Academic Press.

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

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology, 52*, 27-58.

Aron, A., & Aron, E. (1999). *Statistics for psychology* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Audet, J. (2002). A longitudinal study of the entrepreneurial intentions of university students. *Academy of Entrepreneurship Journal, 10*(1), 1-15.

Autio, E., Keeley, R., Klofsten, M., & Ulfstedt, T. (1997). Entrepreneurial intent among students: Testing an intent model in Asia, Scandinavia and in the USA. In *Frontiers of Entrepreneurship Research*, p. 133-147. Wellesley, MA: Babson College.

Autio, E., Keeley, R., Klofsten, M., Parker, G., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies, 2*(2), 145-160.

Babbie, E. (2008). *The basics of social research, 4th ed*. Belmont, CA: Thomson-

Wadsworth.

Bae, T. J., Qian, S., Miao, C., & Fiet, O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. *Entrepreneurship Theory and Practice, 38*(2), 217-254.

Bagozzi, R. P., Baumgartner, H., & Yi, Y. (1992). Appraisal processes in the enactment of intentions to use coupons. *Psychology and Marketing, 9*(6), 469-486.

Bandura, A. (1977). *Social learning theory*. New York: General Learning Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Barron, R. (2004). The cognitive perspective: A valuable tool for answering entrepreneurship's basic 'why' questions. *Journal of Business Venturing, 19*(2), 221-239.

Becker, G. S. (1964). *Human capital*. Chicago: University of Chicago Press.

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

Bloom, K. C., & Shuell, T. J. (1981). Effects of massed and distributed practice on the learning and retention of second-language vocabulary. *Journal of Educational Research*, *74*(4), 245-248.

Boyd, N. G., & Vozikis, G. S. (1994). The influences of self-efficacy on development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice, 14*(3), 63-77.

Bridge, S., O'Neill, K., & Cromie, S. (1998). *Understanding enterprise, entrepreneurship and small firms*. London: Macmillan.

Brush, C. G., Duhaime, I. M., Gartner, W. B., Stewart, A., Katz, J. A., Hitt, M. A.,

Alvarez, S. A., Meyer, G. D., & Venkataraman, S. (2003). Doctoral education in the field of entrepreneurship. *Journal of Management, 29*(3), 309-331.

Byabashaija, W., & Kantono, I. (2011). The impact of college entrepreneurial education on entrepreneurial attitudes and intention to start a business in Uganda. *Journal of Development Entrepreneurship, 16*(1), 127-144.

Cai, J., & Kong, D. (2017). Study of the impact of entrepreneurship education in colleges and university students' entrepreneurial intention. *Revista de la Facultad de Ingenier a U.C.V., 32*(14), 899-903. Available at http://revistadelafacultaddeingenieria.com/index.php/ingenieria/article/viewFile/2795/2754

Carland, J. W., Carland, J. C., & Ensely, M. D. (2001). Hunting the Heffalump: The theoretical basis and dimensionality of the Carland Entrepreneurship Index. *Academy of Entrepreneurship Journal, 7*(2), 51-84.

Carr, J. C., & Sequeira, J. M. (2007). Prior family business exposure as intergenerational influence and entrepreneurial intent: A theory of planned behavior approach. *Journal of Business Research, 60*(10), 1090-1098.

Charney, A., & Libecap, G. (2000). *Impact of entrepreneurship education.* Kansas City, MO: Kauffman Center for Entrepreneurial Leadership.

Cho, M. H. (1998). Ownership structure, investment, and the corporate value: An empirical analysis. *Journal of Financial Economics, 47*(1), 103-121.

Ciavarella, M. A., Buchholtz, A. L., Riordan, C. M., Gatewood, R. D., & Stokes, G. S. (2004). The big five and venture survival: Is there a link? *Journal of Business Venturing, 19*(4), 465-483.

Cohen J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New Jersey: L. Erlbaum Associates.

Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159.

Coviello, N. E., & Jones, M. V. (2004). Methodological issues in international entrepreneurship research. *Journal of Business Venturing, 19*(4), 485-508.

Crant, J. M. (1996). The proactive personality scale as a predictor of entrepreneurial intentions. *Journal of Small Business Management, 34*(3), 42-50.

Davidsson, P. (1995, November 23–24). Determinants of entrepreneurial intentions. Paper presented at the RENT IX Workshop, Piacenza, Italy.

Davidsson, P. (2006). Nascent entrepreneurship: Empirical studies and developments. *Foundations and Trends in Entrepreneurship Research, 2*(1), 1-76.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301-331.

Donckels, R. (1991). Education and entrepreneurship experiences from secondary and university education in Belgium. *Journal of Small Business and Entrepreneurship, 9*(1), 35-42.

Douglas, E. J., & Shepherd, D. A. (2002). Self-employment as a career choice: Attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship Theory and Practice, 26*(3), 81-90.

Eccles, J. (1994). Understanding women's educational and occupational choices. *Psychology of Women Quarterly, 18*(4), 589–609.

Engle, R. L., Dimitriadi, N., Gavidia, J. V., Schlaegel, C., Delanoe, S., Alvarado, I., He, X., Buame, S., & Wolff, B. (2010). Entrepreneurial intention: A twelve-country evaluation of Ajzen's model of planned behaviour. *International Journal of Entrepreneurial Behaviour and Research, 16*(1), 36-58.

Farrington, S. M., Venter, D. J. L., & Louw, M. J. (2012). Entrepreneurial intentions: Demographic perspectives of South African business students. *South African Journal of Business Management, 43*(3), 41-49.

Fayolle, A., Gailly, B. (2008). From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training, 32*(2), 569-593.

Fayolle, A., Gailly, B., & Lassa-Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: A new methodology. *Journal of European Industrial Training, 30*(9), 701-720.

Field, A. P. (2009). *Discovering statistics using SPSS*. London: Sage.

Franke, N., & Luthje, C. (2004). Entrepreneurial intentions of business students: A benchmarking study. *International Journal of Innovation and Technical Management, 1*(3), 269-288.

Galloway, L., & Brown, W. (2002). Entrepreneurship education at university: A driver in the creation of high growth firms? *Education and Training, 44*(8/9), 398-405.

Garavan, T. N., & O'Cinneide, B. (1994). Entrepreneurship education and training programmes: A review and evaluation Part 1. *Journal of European Industrial Training, 18*(8), 3-12.

Gartner, W. B. (1988). "Who is an entrepreneur?" is the wrong question. *American*

Journal of Small Business, 12(4), 11-31.

Gartner, W. B. (1989). "Who is an entrepreneur?" is the wrong question. *Entrepreneurship Theory and Practice, 13*(4), 47-68.

Gartner, W. B., Shaver, K. G., Carter, N. M., & Reynolds, P. D. (eds.) (2004). *Handbook of entrepreneurial dynamics: The process of business creation*. Thousand Oaks, CA: Sage.

Gorman, G., Hanlon, D., & King, W. (1997). Some research perspectives on entrepreneurship education, enterprise education and education for small business management: A ten-year literature review. *International Small Business Journal, 15*(3), 56-77.

Gravetter, F., & Wallnau, L. (2014). *Essentials of statistics for the behavioral sciences* (8th ed.). Belmont, CA: Wadsworth.

Grey, C. (2002). What are business schools for? On silence and voice in management education. *Journal of Management Education, 26*(5), 496-511.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson-Prentice Hall.

Hassan, R., & Wafa, S. A. (2012). Predictors towards entrepreneurial intention: A Malaysian case study. *Asian Journal of Business and Management Sciences, 1*(11), 1-10.

Henderson, R., & Robertson, M. (2000). Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a career. *Career Development International, 5*(6), 236-245.

Hindle, K., & Rushworth, S. (2000). Global entrepreneurship monitor: Hawthorne, Victoria, Swinburne University of Technology. Australia.

Hisrich, R. D., & Peters, M. P. (1989). *Entrepreneurship: Starting, developing, and managing a new enterprise*. Homewood, IL: BPI Irwin.

Honig, B. (2004). Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning and Education, 3*(3), 258-273.

Hussian, A., & Norashidah, H. (2015). Impact of entrepreneurial education on entrepreneurial intentions of Pakistani students. *Journal of Entrepreneurship and Business Innovation, 2*(1), 43-53.

Iakovleva, T., Kolvereid, L., & Stephan, U. (2011). Entrepreneurial intentions in developing countries. *Education and Training, 53*(5), 353-370.

Jamieson, I. (1984). Schools and enterprise. *Education for Enterprise, 1*(1), 7-18.

Karmini, S., Biemans, H., Lans, T., Chizari, M., & Mulder, M. (2014). The impact of entrepreneurship education: A study of Iranian students' entrepreneurial intentions and opportunity identification. *Journal of Small Business Management, 54*(1), 187-209.

Katz, J. (1992). A psychological cognitive model of employment status choice. *Entrepreneurship Theory and Practice, 17*(1), 29-37.

Katz, J. (2003). The chronology and intellectual trajectory of American entrepreneurship education 1876-1999. *Journal of Business Venturing, 18*(2), 283-300.

Kennedy, J., Drennan, J., Renfrow, P., & Watson, B. (2003, Sept. 28 – Oct. 1.). Situational factors and entrepreneurial intentions. Paper presented at the 16th

Annual Conference of Small Enterprise Association of Australia.

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

Kolvereid, L., & Isaken, E. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing, 21*(6), 866-885.

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

Krueger, N. (2009). Entrepreneurial intentions are dead: Long live entrepreneurial intentions. In A. L. Carsrud & M. Brannback (eds.). *Understanding the entrepreneurial mind, international studies in entrepreneurship* (pp. 51-72), New York: Springer.

Krueger, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice, 18*(3), 91-104.

Krueger, N. F., & Carsrud, A. (1993). Entrepreneurial intentions: Applying the theory of planned behavior. *Entrepreneurship and Regional Development, 5*(4), 315-330.

Krueger, N., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(1), 411-432.

Kuratko, D. F. (2003). Coleman white paper: Entrepreneurship education—emerging trends and challenges for the 21st century. Proceedings of the 17th United States Association of Small Business & Entrepreneurship Conference. Hilton Head Island, January, 3-20.

Lee, L., Wong, P. K., Foo, M. D., & Lueng, A. (2011). Entrepreneurial intentions: The

influence of organizational and individual factors. *Journal of Business Venturing, 26*(1), 124-136.

Lee, S. H., & Wong, P. K. (2004). An exploratory study of technopreneurial intentions: A career anchor perspective. *Journal of Business Venturing, 19*(1), 7-28.

Levine, D. M., Stephan, D. F., & Szabat, K. A. (2014). Statistics for managers using Microsoft Excel (7th ed.). Boston, MA: Pearson.

Linan, F. (2004). Intention-based models of entrepreneurship education. *Piccola Impresa/Small Business, 2004*(3), 11-35.

Linan, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice, 33*(3), 593-617

Linan, F., Rodríguez-Cohard, J. C., & Rueda-Cantuche, J. M. (2011). Factors affecting entrepreneurial intention levels: A role for education. *International Entrepreneurship and Management Journal, 7*(2), 195-218.

Lorz, M., Volery, T., & Muller, C. A. (2011). The impact of entrepreneurship education on entrepreneurial intention. Doctoral dissertation, The University of St. Gallen.

Low, M. B., & MacMillan, I. (1988). Entrepreneurship: Past research and future challenges. *Journal of Management, 14*(2), 139-161.

Marlow, S., & McAdam, M. (2011). Analyzing the influence of gender upon high-technology venturing within the context of business incubation. *Entrepreneurship Theory and Practice, 36*(4), 655-676.

Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education

outcomes. *Journal of Business Venturing, 28*(2), 211-224.

Matthews, C. H., & Moser, S. B. (1996). A longitudinal investigation of the impact of family background and gender on interest in small firm ownership. *Journal of Small Business Management, 34*(2), 29-43.

McIntyre, J. R., & Roche, M. (1999). University education for entrepreneurs in the United States: A critical and retrospective analysis of trends in the 1990s. Center for International Business and Research, Georgia Institute of Technology, Working Paper Series, 99/00-021.

McMullan, W. E., & Long, W. A. (1987). Entrepreneurship education in the nineties. *Journal of Business Venturing, 2*(3), 261-275.

McMullan, W. E., Chrisman, J. J., & Vesper, K. H. (2002). Lessons from successful innovations in entrepreneurial support programming. In J. J. Chrisman, J. A. D. Holbrook, & J. H. Chua (Eds.), *Innovation and entrepreneurship in Western Canada: From family businesses to multinationals*. Calgary: University of Calgary Press.

Mitchell, R. K., Busenitz, L. W., Bird, B., Gaglio, C. M., McMullen, J. S., Morse, E. A., & Smith, J. B. (2007). The central question in entrepreneurial cognition research 2007. *Entrepreneurship Theory and Practice*, *31*(1), 1-27.

Moi, T., Adeline, Y. L., & Dyana, M. L. (2011). Young adult responses to entrepreneurial intent. *Journal of Arts Science & Commerce, 2*(3), 37-52.

Noel, T. W. (2002). Effects of entrepreneurial education on intent to open a business: An exploratory study. *The Journal of Entrepreneurship Education, 5*(1), 3-13.

Nowinski, W., Haddoud, M. Y., Lancaric, D., Egerova, D., & Czegledi, C. (2017). The

impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 18 August 2017. 1-19.

Nunnally, J. C. (1978). *Psychometric theory*. New York: McGraw-Hill.

Oosterbeek, H., van Praag, H. M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review, 54*(3), 442-454.

Paco, A. M. F., Ferreira, J. M., Raposo, M., Rodrigues, R. G., & Dinis, A., (2011). Behaviours and entrepreneurial intention: Empirical findings about secondary students. *Journal of International Entrepreneurship, 9*(1), 20-38.

Peterman, N. E., & Kennedy, J. (2003). Enterprise education: influencing students' perceptions of entrepreneurship. *Entrepreneurship Theory and Practice, 28*(2), 129-144.

Pittaway, L., & Cope, J. (2007). Entrepreneurship education. *International Small Business Journal, 25*(5), 479-510.

Potter, J. (2008). *Entrepreneurship and higher education* Paris: Organization for Economic Co-operation and Development.

Qiang, Z., Yan, G., & Li, Z. (2016). China's university-industry partnership, cooperative education, and entrepreneurship education in a global context. *Chinese Education & Society, 49*(3), 115-120.

Rea, L., & Parker, R. (1997). *Designing and conducting survey research: A comprehensive guide*. San Francisco: Jossey-Bass.

Reitan, B. (1996). Where do we learn that entrepreneurship is feasible, desirable and/or

profitable? Paper presented to the ICSB World Conference.

Reitan, B. (1998). *Perspectives on new venture creation. The simulation of entrepreneurial potential and new venture attempts among young people*. Unpublished Doctoral Dissertation. The Norwegian University of Science and Technology, Department of Social Sciences and Technology Management, Trondheim, Norway.

Reynolds, P. D. (1994). *The entrepreneurial process: Preliminary explorations in the U. S.* Paper at 1st Eurostate International Workshop on Techniques of Enterprise Panels, Luxembourg.

Reynolds, P. D. (1995). Who starts new firms? Linear additive versus interaction based models. *Frontiers of Entrepreneurship Research 1995, Proceeding of the Fifteenth Annual Entrepreneurship Research Conference*. Available at https://fusionmx.babson.edu/entrep/fer/papers95/reynolds.htm

Rideout, E. C., & Gray, D. O. (2013). Does entrepreneurship education really work? A review and methodological critique of the empirical literature on the effects of university-based entrepreneurship education. *Journal of Small Business Management, 51*(3), 329-351.

Robinson, P. B., & Sexton, E. A. (1994). The effect of education and experience on self-employment success. *Journal of Business Venturing, 9*(2), 141-156.

Rodrigues, R. G., Dinis, A., Paco, A., Ferreira, J., & Raposo, M. (2012). The effect of an entrepreneurial training programme on entrepreneurial traits and intention of secondary students. In T. Burger-Helmche (Ed.), *Entrepreneurship-born, made and education* (pp77-92). Rijeka, Croatia: InTech.

Sanchez, J. C. (2013). The impact of entrepreneurship education programs on entrepreneurial competencies and intention. *Journal of Small Business Management, 51*(3), 447-465.

Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: A meta-analytic test and integration of competing models. *Entrepreneurship: Theory and Practice, 38*(2), 291-332.

Schwartz, E. J., Wdowiak, M. A., Almer-Jarz, D. A., & Brietenecker, R. J. (2009). The effects of attitudes and perceived environment conditions on students' entrepreneurial intent: An Austrian perspective. *Education + Training, 51*(4), 272-291.

Seligman, M. E. P. (1990). *Learned optimism.* New York: Knopf.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review, 25*(1), 217-226.

Shapero, A (1975). The displaced, uncomfortable entrepreneur. *Psychology Today, 9*(6), 83-88.

Shapero, A. (1984). Why entrepreneurship? Working paper, Babson College.

Shapero, A., & Sokol, L. (1982). Social dimensions of entrepreneurship. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), *Encyclopedia of entrepreneurship* (pp. 72-90). Englewood Cliffs: Prentice-Hall.

Shook, C. L., Priem, R. L., & McGee, J. E. (2003). Venture creation and the enterprising individual: A review and synthesis. *Journal of Management, 29*(3), 379-399.

Souitaris, V., Zerbinati, S., & Allaham, A. (2007). Do entrepreneurship programs raise entrepreneurial intention of science and engineering students? The effect of

learning, inspiration and resources. *Journal of Business Venturing, 22*(4), 566-591.

Spector, P. E., Liu, C., & Sanchez, J. I. (2015). Methodological and substantive issues in conducting multinational and cross-cultural research. *Annual Review of Organizational Psychology and Organizational Behavior, 2*(1), 101-103.

Stamboulis, Y., & Barlas, A. (2014). Entrepreneurship education impact on student attitudes. *The International Journal of Management Education, 12*(3), 365-373.

Timmons J., & Spinelli, S. (2004). *New venture strategies: Entrepreneurship for the 21st century*. Burr Ridge, IL: Irwin-McGraw-Hill Publishers.

Timmons, J. (1999). *New venture creation: Entrepreneurship for the 21st Century* (5th ed.). Boston: Irwin/McGraw-Hill.

Tkachev, A., & Kolvereid, L. (1999). Self-employment intentions among Russian students. *Entrepreneurship and Regional Development*, 11(3), 269-280.

Tounés, A. (2006, August 11-16.). Students' entrepreneurial intentions in France. Paper presented at the Annual Academy of Management Conference; Atlanta, Georgia.

Tubbs, M. E. & Ekeberg, S. E. (1991). The role of intentions in work motivation: Implications for goal-setting theory and research. *Academy of Management Review, 16*(1), 180-199.

Van Praag, C. M., Versloot, P. H. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics, 29*(4), 351-382.

Von Gravenitz, G., Harhoff, D., Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior & Organization, 76*(1), 90-112.

Walter, S. G., & Block, J. H. (2016). Outcomes of entrepreneurship education: An

institutional perspective. *Journal of Business Venturing, 31*(2), 216-233.

Wang, R. X. (2012). Chinese culture and its potential influence on entrepreneurship. *International Business Research, 5*(10), 76-90.

Weber, R. (2011). *Evaluating entrepreneurship education*. Munich: Springer.

Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: Implications for entrepreneurship education. *Entrepreneurship Theory and Practice, 31*(3), 387-406.

Wu, S., & Wu, L. (2008). The impact of higher education on entrepreneurial intentions of university students in China. *Journal of Small Business and Enterprise Development, 15*(4), 752-774.

Youndt, M. A., Subramaniam, M., & Snell, S. A. (2004). Intellectual capital profiles: An examination of investment and returns. *Journal of Management Studies, 41*(2), 335-361.

Zhang, G., Cheng, P., Fan, L., & Chu, Z. (2012). An empirical study on impact of college carve-out education on entrepreneurial intention. Available at SSRN http://ssrn.com/abstract=2034168 or http://dx.doi.org/10.2139/ssrn.2034168, accessed March 2018.

Zhang, Y., Duysters, G., & Cloodt, M. (2014). The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal, 10*(3), 623-641.

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

Appendix A

Email Correspondence with Linan & Chen

GEORGE FOX UNIVERSITY

Brian Lavelle <blavelle12@georgefox.ed

EIQ in Mandarin Chinese?

Yi-Wen Chen <137186@mail.tku.edu.tw> Sun, Apr 22, 2018 at 8:16 F
Reply-To: 137186@mail.tku.edu.tw
To: flinan@us.es, blavelle12@georgefox.edu

Dear Professor Liñán and Brian,

Yes, I do have an EIQ questionnaire in Chinese version, which is used to test the Taiwanese sample and presented at a conference in Taiwan, please refer to the attached file.

And yes, there are some terms that I need to check carefully, please wait for one day.

Thanks!

Best regards,
Yi-Wen

Yi-Wen Chen

Chairman and Associate Professor,
Department of Information and Communication,
Tamkang University,

No.151, Yingzhuan Rd., Tamsui Dist., New Taipei City 25137, Taiwan (R.O.C.)
E-mail: 137186@mail.tku.edu.tw
Phone: 886-2-2621-5656 Ext. 3112
Fax: 886-2-2623-4052

[Quoted text hidden]

影響創業意圖的關鍵因素分析v6.pdf
323K

Appendix B

EIQ Traditional Mandarin Chinese Version

大學生的創業態度與意圖

Version 2.05

No. of questionnaire: _____

研究團隊正在進行一項學生及校友創業的研究，接下來的問題包括教育、經驗等層面的項目或創業活動的價值評估。

我們將在競賽後持續追蹤受訪者的發展。因此，請您留下聯絡資料，如果您不想參與此項追蹤研究，您可以不要留下聯絡資料。

請您詳細回答每項問題，某些題目需要您將回答填寫在橫線上。題目皆為**單選。**衡量標準以 1 為最低程度， 7 為最高程度。非常謝謝您的合作。

問題

教育與經驗

1. 請問您的科系是_____

2. 請問您將於何時畢業？

☐ 2005 ☐ 2006 ☐ 2007 以後

3. 下列為選擇科系的理由，請指出影響您選擇該系的重要程度為何？1 表示一點也不重要，7 表示非常重要。

	1	2	3	4	5	6	7
- 未來職業	☐	☐	☐	☐	☐	☐	☐
- 就業機會	☐	☐	☐	☐	☐	☐	☐
- 父母或朋友的建議	☐	☐	☐	☐	☐	☐	☐

4. 請問您有工作經驗嗎？ ☐ 有 ☐ 沒有

若有，

a. 職稱為何？（請填任職最久的） _____

b. 是否曾經管理過他人？ ☐ 是 ☐ 否

c. 工作經驗多長？（總共多少年） _____

d. 距離您上一份工作多久？ (多少年？若現在正在工作請填 0) _____

e. 您公司的員工數多少？（請填任職最久的） _____

5.您是否曾為自由業? ☐ 是 ☐ 否

若是：

a. 多久？ (幾年) _____

b. 您已離職多久？ (幾年？若現在仍是自僱員請填 0) _____

創業知識

6. 您是否有親身認識任何創業者？ ☐ 有 ☐ 沒有

若有，請指出您和他(她)的關係並回答接續的問題？從 1 (完全不同意) 到 7 (完全同意)。

	1	2	3	4	5	6	7
☐ 家人							
- 你同意他(她)的作為稱得上是位創業者？	☐	☐	☐	☐	☐	☐	☐
- 你同意他(她)是一位「好的創業者」？	☐	☐	☐	☐	☐	☐	☐
☐ 朋友							
- 你同意他(她)的作為稱得上是位創業者？	☐	☐	☐	☐	☐	☐	☐
- 你同意他(她)是一位「好的創業者」？	☐	☐	☐	☐	☐	☐	☐

	1	2	3	4	5	6	7
☐ 雇主 / 領班							
- 你同意他(她)的作為稱得上是位創業者？	☐	☐	☐	☐	☐	☐	☐
- 你同意他(她)是一位「好的創業者」？	☐	☐	☐	☐	☐	☐	☐
☐ 其他							
- 你同意他(她)的作為稱得上是位創業者？	☐	☐	☐	☐	☐	☐	☐
- 你同意他(她)是一位「好的創業者」？	☐	☐	☐	☐	☐	☐	☐

7.你對於相關協會和輔導機構的了解程度，對於從 1(完全忽略)到 7 (完全了解)。

	1	2	3	4	5	6	7
-協會。（如：中國青年創業協會、中華民國創業投資商業同業公會、等國內外聯盟）	☐	☐	☐	☐	☐	☐	☐
- 輔導機構 。（如：行政院青年輔導委員會等）	☐	☐	☐	☐	☐	☐	☐

8. 下列為協助一家公司創立的面向，請您指出對它們的瞭解程度？從 1(完全不瞭解)到 7(完全了解)。

- 對年輕創業者的專門訓練。	☐	☐	☐	☐	☐	☐	☐
- 具有特別優惠條件的資金。	☐	☐	☐	☐	☐	☐	☐
- 對新創公司的技術資源。	☐	☐	☐	☐	☐	☐	☐
- 事業核心。	☐	☐	☐	☐	☐	☐	☐
-具有特別優惠條件的諮詢服務。	☐	☐	☐	☐	☐	☐	☐

角色吸引力

9. 在您學業結束後，您想立刻投入哪方面的工作？以下的選擇從 1 (最不喜歡) 到 7 (最喜歡).

	1	2	3	4	5	6	7
- 職員	☐	☐	☐	☐	☐	☐	☐
- 創業	☐	☐	☐	☐	☐	☐	☐
- 再進修	☐	☐	☐	☐	☐	☐	☐

10. 就中長期而言，考量所有的優缺點 (經濟、個人、社會認同、工作穩定性等)， 請您指出下列各項職業對您的吸引程度？從 1(最小吸引力)到 7(最大吸引力)。

- 受薪階級。	☐	☐	☐	☐	☐	☐	☐

- 自由業。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 創業者。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

11. 請您指出下列論述的同意程度？從 1 (完全不同意) 到 7 (完全同意)。

- 做為創業者對我而言利多於弊。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 做為創業者對我是相當有吸引力的。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 假若我有機會和資源，我會想創立一間公司。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 當一位創業者會提高我的滿足感。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 眾多選擇中，我會傾向做為一位創業者。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

社會規範

12. 請指出您身邊的人認為從事創業活動比起從事其他職業較好或較差？從 1 (最差)到 7 (最好)。

	1	2	3	4	5	6	7
- 家庭成員。	☐	☐	☐	☐	☐	☐	☐
- 朋友之間。	☐	☐	☐	☐	☐	☐	☐
- 同事和同學之間。	☐	☐	☐	☐	☐	☐	☐

13. 若您決定創立一間公司，您身邊的人會贊成這決定嗎？ 從 1 (完全不贊成)到 7 (完全贊成)。

- 家庭成員 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 朋友之間。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 同事和同學之間。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

14. 請您指出下列論述的同意程度？從 1 (完全不同意) 到 7 (完全同意)。

- 創業行為與我國文化產生牴觸。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 創業者的角色在經濟中並不完全被認可。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 許多人很難接受成為一位創業者。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 創業活動被視為過於冒險以至於不值得去參與。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

- 一般而言，創業者被認為會利用其他人。 ☐ ☐ ☐ ☐ ☐ ☐ ☐

自我效能感

15.下列關於您創業能力的描述，請指出您的同意程度為何？從 1 (完全不同意) 到 7 (完全同意)。

	1	2	3	4	5	6	7
- 創立一家公司且保持永續經營對我而言很容易。	☐	☐	☐	☐	☐	☐	☐
- 我準備創立一家可營運的公司。	☐	☐	☐	☐	☐	☐	☐
- 我可以掌控創立一家新公司的流程。	☐	☐	☐	☐	☐	☐	☐
- 我知道成立一家公司的必要細節。	☐	☐	☐	☐	☐	☐	☐
- 我知道如何勾勒出一件創業企劃。	☐	☐	☐	☐	☐	☐	☐
- 假如我試著創立一家新公司，我將很有可能成功。	☐	☐	☐	☐	☐	☐	☐

16.您認為您有令人滿意的創業能力嗎？從 1(能力最低)到 7(能力最高)。

- 對機會的掌握	☐	☐	☐	☐	☐	☐	☐
- 創造力	☐	☐	☐	☐	☐	☐	☐
- 問題解決能力	☐	☐	☐	☐	☐	☐	☐
- 領導與溝通的技巧 s	☐	☐	☐	☐	☐	☐	☐
- 發展新產品與新服務	☐	☐	☐	☐	☐	☐	☐
- 建立人際網路能力並與專業人士連結	☐	☐	☐	☐	☐	☐	☐

創業意圖

17. 您是否曾經認真的考慮過成為一位創業家嗎？ ☐ 是 ☐ 否

18. 請您指出下列論述的同意程度？從 1 (完全不同意) 到 7 (完全同意)。

	1	2	3	4	5	6	7
- 我已經準備好不顧一切要創業。	☐	☐	☐	☐	☐	☐	☐
- 我的職涯目標就是成為一個創業者。	☐	☐	☐	☐	☐	☐	☐
- 我將盡我所能去開創與經營我的公司。	☐	☐	☐	☐	☐	☐	☐
- 我未來決定要開創一家公司。	☐	☐	☐	☐	☐	☐	☐
- 我強烈地的想要開創一家公司。	☐	☐	☐	☐	☐	☐	☐
- 我有堅定的意圖在未來要開創一家公司。	☐	☐	☐	☐	☐	☐	☐

個人資料

25. 年齡：_____

26. 性別： ☐ 男性 ☐ 女性

27. 出生地： _____ . 居住地： _____

28. 家中成員人數 （包含自己）：_____

29. 雙親的教育程度：

父親：	☐ 小學	☐ 國中	☐ 專科/職業學校	☐ 大專院校	☐ 其他
母親：	☐ 小學	☐ 國中	☐ 專科/職業學校	☐ 大專院校	☐ 其他

30. 雙親目前職業：

	私部門職員	**公部門職員**	**自雇者或創業者**	**退休**	**待業**	**其他**
父親：	☐	☐	☐	☐	☐	☐
母親：	☐	☐	☐	☐	☐	

31. 請問您**家戶所得**大約多少？（包含家中的每一位成員） 單位：新台幣

☐ 2 萬元以下 ☐2 萬元至 4 萬元 ☐ 4 萬元至 6 萬元 ☐ 6 萬元至 8 萬元

☐ 8 萬元至 10 萬元 ☐ 10 萬元至 12 萬元 ☐ 12 萬元以上

聯絡資料

請填寫下列資料以助於我們對您的後續評估，任何您提供的資料將保密，僅供學術用途。

姓名：_____

聯絡地址：_____ 郵遞區號_____

e-mail: _____ 聯絡電話 _____ 行動電話_____

Appendix C

Entrepreneurial Intention Questionnaire

Entrepreneurial Intention Questionnaire (EIQ) by Linan & Chen (2009, pg. 612)

Measures of Core Entrepreneurial Intention Model Elements

Personal Attitude

11. Indicate your level of agreement with the following sentences from 1 (total disagreement) to 7 (total agreement).

	1	2	3	4	5	6	7
11.a- Being an entrepreneur implies more advantages than disadvantages to me	☐	☐	☐	☐	☐	☐	☐
11.b- A career as entrepreneur is attractive for me	☐	☐	☐	☐	☐	☐	☐
11.c- If I had the opportunity and resources, I'd like to start a firm	☐	☐	☐	☐	☐	☐	☐
11.d- Being an entrepreneur would entail great satisfactions for me	☐	☐	☐	☐	☐	☐	☐
11.e- Among various options, I would rather be an entrepreneur	☐	☐	☐	☐	☐	☐	☐

Subjective Norm

13. If you decided to create a firm, would people in your close environment approve of that decision? Indicate from 1 (total disapproval) to 7 (total approval).

	1	2	3	4	5	6	7
13.a- Your close family	☐	☐	☐	☐	☐	☐	☐
13.b- Your friends	☐	☐	☐	☐	☐	☐	☐
13.c- Your colleagues	☐	☐	☐	☐	☐	☐	☐

Perceived Behavioral Control

15. To what extent do you agree with the following statements regarding your entrepreneurial capacity? Value them from 1 (total disagreement) to 7 (total agreement).

	1	2	3	4	5	6	7
15.a- To start a firm and keep it working would be easy for me	☐	☐	☐	☐	☐	☐	☐
15.b- I am prepared to start a viable firm	☐	☐	☐	☐	☐	☐	☐
15.c- I can control the creation process of a new firm	☐	☐	☐	☐	☐	☐	☐
15.d- I know the necessary practical details to start a firm	☐	☐	☐	☐	☐	☐	☐
15.e- I know how to develop an entrepreneurial project	☐	☐	☐	☐	☐	☐	☐
15.f- If I tried to start a firm, I would have a high probability of succeeding	☐	☐	☐	☐	☐	☐	☐

Entrepreneurial Intention

18. Indicate your level of agreement with the following statements from 1 (total disagreement) to 7 (total agreement)

	1	2	3	4	5	6	7
18.a- I am ready to do anything to be an entrepreneur	☐	☐	☐	☐	☐	☐	☐
18.b- My professional goal is to become an entrepreneur	☐	☐	☐	☐	☐	☐	☐
18.c- I will make every effort to start and run my own firm	☐	☐	☐	☐	☐	☐	☐
18.d- I am determined to create a firm in the future	☐	☐	☐	☐	☐	☐	☐
18.e- I have very seriously thought of starting a firm	☐	☐	☐	☐	☐	☐	☐
18.f- I have the firm intention to start a firm some day	☐	☐	☐	☐	☐	☐	☐

Appendix D

Survey used in Study (Chinese & English)

同意声明：

本研究的目的是探讨创业教育与创业意向之间的关系。本研究将以博士论文的形式呈现。 参与本研究可能存在未知的风险。参与这项研究的好处包括帮助研究人员更好地了解创业教育—创业关系、改善创业教育以及对可能导致经济增长和发展的发现作出贡献。这项研究是匿名的。研究人员不会保留有关您身份的任何信息。参加这项研究的决定完全取决于你。您可以在任何时候拒绝参与本研究，而这样做不会影响您与研究人员的关系。在参与研究之前，你有权利问一些关于研究的问题，并得到回答之后开始参与研究。通过以下签名，您已表明您同意作为研究参与者，并且您已阅读并理解上面提供的信息。

_____

___

签名 **日期**

角色吸引力

11. 請您指出下列論述的同意程度？從 1 (完全不同意) 到 7 (完全同意)。

	1	2	3	4	5	6	7
11.a.- 做為創業者對我而言利多於弊。	☐	☐	☐	☐	☐	☐	☐
11.b.- 做為創業者對我是相當有吸引力的。	☐	☐	☐	☐	☐	☐	☐
11.c.- 假若我有機會和資源，我會想創立一間公司。	☐	☐	☐	☐	☐	☐	☐
11.d.- 當一位創業者會提高我的滿足感。	☐	☐	☐	☐	☐	☐	☐
11.e.- 眾多選擇中，我會傾向做為一位創業者。	☐	☐	☐	☐	☐	☐	☐

社會規範

13. 請指出您身邊的人認為從事創業活動比起從事其他職業較好或較差？從 1 (最差)到 7 (最好)。

1	2	3	4	5	6	7

13.a.- 家庭成員。	☐	☐	☐	☐	☐	☐	☐
13.b.- 朋友之間。	☐	☐	☐	☐	☐	☐	☐
13.c.- 同事和同學之間。	☐	☐	☐	☐	☐	☐	☐

自我效能感

15. 下列關於您創業能力的描述，請指出您的同意程度為何？從 1 (完全不同意) 到 7 (完全同意)。

	1	2	3	4	5	6	7
15.a.- 創立一家公司且保持永續經營對我而言很容易。	☐	☐	☐	☐	☐	☐	☐
15.b.- 我準備創立一家可營運的公司。	☐	☐	☐	☐	☐	☐	☐
15.c.- 我可以掌控創立一家新公司的流程。	☐	☐	☐	☐	☐	☐	☐
15.d.- 我知道成立一家公司的必要細節。	☐	☐	☐	☐	☐	☐	☐
15.e.- 我知道如何勾勒出一件創業企劃。	☐	☐	☐	☐	☐	☐	☐
15.f.- 假如我試著創立一家新公司，我將很有可能成功。	☐	☐	☐	☐	☐	☐	☐

創業意圖

18. 請您指出下列論述的同意程度？從 1 (完全不同意) 到 7 (完全同意)。

	1	2	3	4	5	6	7
18.a.- 我已經準備好不顧一切要創業。	☐	☐	☐	☐	☐	☐	☐
18.b.- 我的職涯目標就是成為一個創業者。	☐	☐	☐	☐	☐	☐	☐
18.c.- 我將盡我所能去開創與經營我的公司。	☐	☐	☐	☐	☐	☐	☐
18.d.- 我未來決定要開創一家公司。	☐	☐	☐	☐	☐	☐	☐
18.e.- 我強烈地的想要開創一家公司。	☐	☐	☐	☐	☐	☐	☐
18.f.- 我有堅定的意圖在未來要開創一家公司。	☐	☐	☐	☐	☐	☐	☐

请在下面选项中选择最适合你的创业教育水平的选项：

1 - 无创业教育

2 - 非创业类创业培训（研讨会形式）

3 - 创业培训与非创业类商业计划（研讨会和商业计划形式）

4 - 创业课程与商业计划（一学期+商业策划）

5 - 创业课程并在课堂上创建商业项目（一学期+创业）

6 - 创业专业+设计过商业计划（多个学期+商业策划）

7 - 创业专业+创建过商业项目（多个学期+创业）

(English Version)

Consent statement:

The purpose of this study is to explore the relationship between entrepreneurship education and entrepreneurial intention. This research will be presented as a doctoral dissertation. There may be unknown risks of participating in this study. The benefits of participating in this study include helping researchers better understand the entrepreneurship education- entrepreneurial intention relationship, improving entrepreneurship pedagogy, and contributing to findings that may lead to increased economic growth and development. This study is anonymous. The researcher will not be retaining any information about your identity. The decision to participate in this study is entirely up to you. You may decline to participate in this study at any time without affecting your relationship with the researcher. You have the right to ask questions about the research study and have those questions answered before you participate in the study. By signing below, you have indicated your consent as a research participant, and that you have read and understand the information provided above.

_____

____

Signature Date

11. Personal Attitude

Indicate your level of agreement with the following sentences from 1 (total disagreement) to 7 (total agreement).

11. a – Being an entrepreneur implies more advantages than disadvantages to me

11. b – A career as an entrepreneur is attractive for me

11. c – If I had the opportunity and resources, I'd like to start a firm

11. d – Being an entrepreneur would entail great satisfaction for me

11. e – Among various options, I would rather be an entrepreneur

13. Subjective Norms

If you decided to create a firm, would people in your close environment approve of that decision? Indicate from 1 (total disapproval) to 7 (total approval).

13. a – Your close family

13. b – Your friends

13. c – Your colleagues

15. Perceived Behavioral Control

To what extent do you agree with the following statements regarding your entrepreneurial capacity? Value them form 1 (total disagreement) to 7 (total agreement).

15. a – To start a firm and keep it working would be easy for me

15. b – I am prepared to start a viable firm

15. c – I can control the creation process of a new firm

15. d – I know the necessary practical details to start a firm

15. e – I know how to develop an entrepreneurial project

15. f – If I tried to start a firm, I would have a high probability of succeeding

18. Entrepreneurial Intention

Indicate your level of agreement with the following statements from 1 (total disagreement) to 7 (total agreement).

18. a – I am ready to do anything to be an entrepreneur

18. b – My professional goal is to become an entrepreneur

18. c – I will make every effort to start and run my own firm

18. d – I am determined to create a firm in the future

18. e – I am very seriously thought of starting a firm

18. f – I have the firm intention to start a firm some day

Entrepreneurship Education

Indicate your level of entrepreneurship education by selecting the option that best meets your situation.

1 – No Entrepreneurship Education

2 – Entrepreneurship training in non-entrepreneurship class (Workshop Format)

3 – Entrepreneurship training with Business Plan in non-entrepreneurship class (Workshop-Format + Business Planning)

4 – Entrepreneurship Class with Business Plan (Semester + Business Planning)

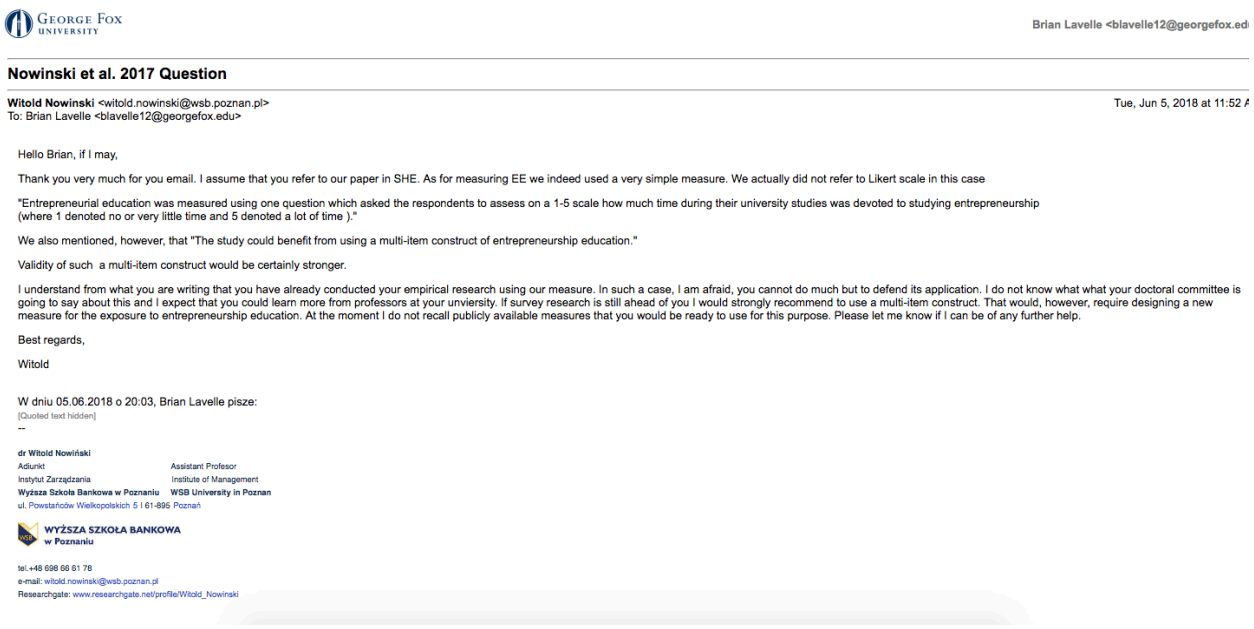
5 – Entrepreneurship Class with Venture Creation (Semester + Venture Creation)

6 – Entrepreneurship Major with Business Plan (Multi-Semester + Business Planning)

7 – Entrepreneurship Major with Venture Creation (Multi-Semester + Venture Creation)

Appendix E

Email Correspondence with Nowinski



GEORGE FOX UNIVERSITY

Brian Lavelle <blavelle12@georgefox.ed

Nowinski et al. 2017 Question

Witold Nowinski <witold.nowinski@wsb.poznan.pl> Tue, Jun 5, 2018 at 11:52 A
To: Brian Lavelle <blavelle12@georgefox.edu>

Hello Brian, if I may,

Thank you very much for you email. I assume that you refer to our paper in SHE. As for measuring EE we indeed used a very simple measure. We actually did not refer to Likert scale in this case

"Entrepreneurial education was measured using one question which asked the respondents to assess on a 1-5 scale how much time during their university studies was devoted to studying entrepreneurship (where 1 denoted no or very little time and 5 denoted a lot of time)."

We also mentioned, however, that "The study could benefit from using a multi-item construct of entrepreneurship education."

Validity of such a multi-item construct would be certainly stronger.

I understand from what you are writing that you have already conducted your empirical research using our measure. In such a case, I am afraid, you cannot do much but to defend its application. I do not know what what your doctoral committee is going to say about this and I expect that you could learn more from professors at your unviersity. If survey research is still ahead of you I would strongly recommend to use a multi-item construct. That would, however, require designing a new measure for the exposure to entrepreneurship education. At the moment I do not recall publicly available measures that you would be ready to use for this purpose. Please let me know if I can be of any further help.

Best regards,

Witold

W dniu 05.06.2018 o 20:03, Brian Lavelle pisze:
[Quoted text hidden]
--

dr Witold Nowiński
Adiunkt | Assistant Profesor
Instytut Zarządzania | Institute of Management
Wyższa Szkoła Bankowa w Poznaniu | **WSB University in Poznan**
ul. Powstańców Wielkopolskich 5 I 61-895 Poznań

WYŻSZA SZKOŁA BANKOWA
w Poznaniu

tel.+48 696 66 61 78
e-mail: witold.nowinski@wsb.poznan.pl
Researchgate: www.researchgate.net/profile/Witold_Nowinski