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Influencing Factors of Entrepreneurial Intentions of College Students: An Empirical Study in Zhejiang Province, China

ZHANG Wei'er

Doctor of Management

Supervisors:
PhD Virginia Trigo, Professor Emeritus,
ISCTE University Institute of Lisbon
PhD CHEN Shuangying, Professor,
University of Electronic Science and Technology of China

March, 2023

BUSINESS
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I declare that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university and that to the best of my knowledge it does not contain any material previously published or written by another person except where due reference is made in the text.

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Abstract

In the context of “mass innovation and entrepreneurship” and the COVID-19 pandemic, college student entrepreneurship in China has been regarded as an important solution to employment difficulties. However, existing studies have found that Chinese college students have weak entrepreneurial intentions, which prompts for the continuity of research using different sample sizes and locations in search for the factors that may play a greater role in the development of such intentions.

In an attempt to address this call, this thesis proposes a model consisting of six key variables, namely entrepreneurial experiences, entrepreneurship education, entrepreneurial environment, entrepreneurial traits, entrepreneurial attitudes and entrepreneurial intention, to explore the determinants of college students’ entrepreneurial intentions. A questionnaire survey was conducted among a sample of 828 students from business schools of nine universities in Zhejiang Province. The scales used to measure the key variables were all mature scales with sound reliability and validity. Descriptive statistics, correlation analysis and variance analysis were conducted on the collected data using SPSS, and the hypotheses were tested via structural equation modelling using AMOS. All the hypotheses were supported, validating the proposed model.

Based on the research findings and on the extensive literature review, this study put forward recommendations for relevant stakeholders, including government authorities and policy makers, colleges/universities and managers, college students, and family members. Results also suggest that much still needs to be done, either research or policy wise, to develop an entrepreneurial culture that prompts college students to consider entrepreneurship an option as natural as any traditional employment.

Keywords: Entrepreneurial intentions, Chinese college students, Zhejiang Province
JEL: L26; M10

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Resumo

No contexto atual de estímulo ao empreendedorismo e à inovação intensiva e considerando a pandemia COVID-19, a China tem vindo a incentivar a atividade empreendedora em alunos universitários como uma solução importante para enfrentar as crescentes dificuldades de emprego. Contudo, muitos estudos indicam que os alunos universitários chineses têm uma reduzida intenção empreendedora e sugerem a realização de mais estudos em tempos e localizações diferentes, utilizando uma maior diversidade de amostras no sentido de se identificarem quais os fatores que melhor podem contribuir para o desenvolvimento dessas intenções.

Esta tese procura corresponder a esta necessidade e propõe um modelo causal constituído por seis variáveis chave designadamente (i) experiências empreendedoras, (ii) educação para o empreendedorismo, (iii) meio ambiente, (iv) traços empreendedores, (v) atitudes e (vi) intenções empreendedoras, no sentido de explorar quais os determinantes das intenções empreendedoras nos alunos universitários estudados. Foi administrado um questionário a 828 alunos de escolas de gestão em nove universidades da província de Zhejiang utilizando escalas maduras com fiabilidade e validade comprovadas. Os resultados foram analisados utilizando-se estatística descritiva, correlação e análise de variância por recurso ao SPSS. As hipóteses foram também testadas através de equações estruturais e utilizando-se o AMOS. Nenhuma hipótese foi rejeitada concluindo-se pela validade do modelo proposto.

Com base nos resultados e na extensa revisão de literatura, a tese dirige algumas recomendações aos principais intervenientes no sistema empreendedor, incluindo autoridades governamentais, universidades, estudantes e suas famílias. Os resultados sugerem também que há ainda muito por fazer, quer em termos de investigação quer de políticas, para o desenvolvimento de uma cultura empreendedora que torne a opção por esta atividade tão natural como a procura de um emprego tradicional.

Palavras chave: Intenções empreendedoras, Alunos universitários, Província de Zhejiang
JEL: L26; M10

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摘 要

在“大众创业、万众创新”和新冠肺炎疫情大流行的背景下，大学生创业在中国被认为是解决就业难的重要途径。然而，已有研究发现中国大学生的创业意愿较弱，因此有必要在不同地区使用不同样本量继续开展研究，从而找出对提高这种意愿影响较大的因素。

为了达到上述目的，本研究提出了一个由六个变量，即创业经历、创业教育、创业环境、创业者特质、创业态度和创业意愿组成的模型，来探索大学生创业意愿的影响因素。本研究以浙江省九所高校商学院的 828 名在校大学生为研究对象，开展了问卷调查。用于测量关键变量的量表均为具有良好的信度和效度的成熟量表。本研究使用 SPSS 对收集到的数据进行了描述性统计分析、相关性分析和方差分析，并通过 AMOS 构建结构方程模型对假设进行了检验。所有的假设都得到了支持，验证了所提出的模型。

基于研究结果和广泛的文献综述，本研究为有关的利益相关者提出了建议，包括政府部门和政策制定者、高等院校及其管理人员、大学生和家庭成员。结果也表明不论是在研究层面还是政策方面，仍然需要付出许多努力来营造一种积极的创业文化，让大学生将创业视为跟其他传统就业一样自然的就业选择。

关键词：创业意愿，中国大学生，浙江省

JEL: L26; M10

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How time flies! Looking back, six years have elapsed since I enrolled in the DoM program. Now I have finally come to this moment marking the completion of my doctoral dissertation. I am overwhelmed with mixed emotions, including joy, gratitude, relief, nostalgia, and regret.

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List of Acronyms

CBEC: Cross-border E-commerce

CFA: Confirmatory factor analysis

EFA: Exploratory factor analysis

MBA: Master of Business Administration

PBC: Perceived behavioral control

PCA: Principal component analysis

R&D: Research and development

SEM: Structural equation modeling

SSCT: Social cognitive career theory

TPB: Theory of planned behavior

TRA: Theory of reasoned action

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Chapter 1: Introduction

This chapter introduces the research background of this thesis, identifies the research dilemma, described the research purpose, puts forward the research questions, points out the research significance, and introduces the structure of the thesis.

1.1 Research background

1.1.1 The rising importance of innovation and entrepreneurship

In recent years, the world economic growth has slowed down due to the rise of unilateralism and trade protectionism. Particularly, the outbreak of the COVID-19 pandemic in 2020 has had a serious impact on the world economy. According to the World Economic Outlook published by the International Monetary Fund (2022), the global economy will become increasingly gloomy in 2022, and its growth rate is expected to slow down from 6.1% in 2021 to 3.2% in 2022 due to the impact of the COVID-19 pandemic and the concomitant pandemic prevention measures. In this global economic development situation, countries around the world are attaching more and more significance to innovation and entrepreneurship. It is believed that continuously increasing investment in the innovation and entrepreneurship field can reduce social pressure (C. Lee et al., 2001). Besides, innovation and entrepreneurship are conducive to economic development since innovation can lead to higher productivity (Holcombe, 1998), and entrepreneurs are main contributors to innovation (Schöning, 2013).

China is among the countries regarding innovation and entrepreneurship a top priority. For a long time, it has been insisting on developing an innovation-driven economy and implementing the strategy of building an innovative country, expecting to give full play to the advantage of its surplus labor force and continuously generate new economic growth. The development of an innovation-driven economy emphasizes talent and knowledge, requiring close collaboration and cooperation among innovators from all walks of life, including government, industry, academia and research institutions; an innovation-based country emphasizes high innovation input and output, requiring the contribution rate of scientific and technological progress to exceed 70% (P. Wang & Xiong, 2001).

The high expectation China has placed on innovation and entrepreneurship is well-grounded. Based on an analysis of economic data of all 31 provinces in China during the period from 1978 to 2017, Jian et al. (2021) uncovered a significant positive relationship between both types of entrepreneurship (business creation and innovation) and the growth rate of China's GDP per capita. Specifically, a 10% increase in business creation entrepreneurship led to an increase of 0.75%-1.625% in the annual growth rate of GDP per capita; and a 10% increase in innovation resulted in an increase of 0.05%–0.188% in the annual growth rate of GDP per capita.

With this realization, the Chinese government has been greatly advocating "mass innovation and entrepreneurship", which has not only resulted in a surge of micro and small enterprises (MSEs) but also motivated many small and medium-sized enterprises (SMEs) to engage in R&D activities (Reshetnikova, 2018). Particularly, recent years have seen China's self-positioning shifting from "Made in China" to "Created in China" , with a heavy emphasis on brand building and quality assurance (Zheng & Li, 2017). China, as the largest transition economy (J. Y. Yang & Li, 2008), is focusing more and more on high-tech production and national breakthrough technologies, particularly in "strategic emerging industries" represented by bioindustry, new-generation information technology industry, high-end equipment manufacturing, intelligent and new energy vehicle industry, new material industry, energy conservation and environmental protection industry, new energy, and digital creative industry (X. Hua, 2020).

1.1.2 Increasing importance of college student entrepreneurship in China

As the main source of high-level innovation and entrepreneurial talents, college students are not only an important driving force of various changes in society in the era of knowledge economy, but also promote the emergence of new industries and the generation of new growth. Therefore, they have become an important force for implementing the national innovation-driven strategy.

In fact, the Chinese government has always attached great importance to and supported college students' innovation and entrepreneurship. Particularly, since 2011, China's State Council and Ministry of Education have issued several policy documents to support college student entrepreneurship, proposing measures to optimize the entrepreneurial environment and encourage and support college student entrepreneurship. Among them, in April 2012, China's Ministry of Education (2012) clearly emphasized the importance of innovation and entrepreneurship to the overall improvement of higher education in China in the Opinions from

the Ministry of Education on Comprehensive Enhancement of the Quality of Higher Education and proposed to "carry innovation and entrepreneurship education through the whole process of cultivating talents" and "formulate the basic requirements for teaching innovation and entrepreneurship education in colleges and universities, and develop the curriculum for innovation and entrepreneurship education".

Since 2013, the expression of innovation and entrepreneurship has appeared in the Government Work Report and has taken on an increasingly important position year by year. In September 2014, China's Premier Li Keqiang proposed "mass entrepreneurship and innovation" at the Davos Forum (K. Q. Li, 2014), which later became China's national strategy. In 2015, China officially proposed the innovation-driven development strategy of "mass entrepreneurship and innovation" (X. T. Guo, 2015). In 2017, China's State Council (2017) pointed out in the "Opinions on the Construction of the Second Group of Mass Entrepreneurship and Innovation Demonstration Bases" that the in-depth development of mass entrepreneurship and innovation is an important carrier for the implementation of the innovation-driven development strategy, that it is necessary to implement the concept of "putting talents first and establishing linkage among entities", that talent support should be regarded as the first element to reform the mechanism of talent introduction, incentive, development and evaluation, and stimulate the creative potential of talents, encourage science and technology personnel, graduates of secondary and higher education institutions, overseas returned talents, migrant workers, retired soldiers and other groups of people with dreams, willingness and ability to engage in more activities related to innovation and entrepreneurship.

More recently, the General Office of China's Ministry of Education (2021) proposed in the Notice on Recommending Members of the National Steering Committee on Employment and Entrepreneurship for Graduates of Regular Colleges and Universities that efforts should be made to establish a sound support system for graduates to seek employment and entrepreneurship and promote fuller and higher quality employment for them. Not only does the central government attach great importance to the innovation and entrepreneurship of college students, but local governments have also formulated policies to develop local endeavors, which promote the flourishing of college students' initiatives (See Table 1.1).

Later in the same year, the General Office of China's State Council (2021) issued the "Guiding Opinions of the General Office of the State Council on Further Supporting College Students in Innovation and Entrepreneurship". The Opinions proposed that in order to improve college students' ability to engage in innovation and entrepreneurship, education in these areas should be strengthened, innovation and entrepreneurship environment should be optimized,

related service platforms for college students should be established, preferential financial and taxation policies should be introduced, measures should be taken to facilitate transfer of innovation and entrepreneurship results by college students, China International College Students' "Internet+" Innovation and Entrepreneurship Competition should be well-organized on an annual basis, and information services for innovation and entrepreneurship of college students should be strengthened. The policies introduced by China's State Council to boost entrepreneurship among college graduates from 2011 and 2021 are listed in Table 1.1 below.

Table 1.1 Policies introduced by China's State Council to boost entrepreneurship of college graduates

Year	Name of the introduced document
2011	Notice of the State Council on Further Improving the Employment of Graduates of Regular Colleges and Universities
2012	Notice of the State Council on Approving and Forwarding the Employment Promotion Plan (2011-2015)
2014	Notice of the General Office of the State Council on Doing a Good Job in the Employment and Entrepreneurship of Graduates of National Colleges and Universities in 2014
2015	Guiding Opinions of the General Office of the State Council on Developing Maker Space to Promote Mass Innovation and Entrepreneurship
2015	Opinions of the State Council on Further Doing a Good Job in Employment and Entrepreneurship under the New Situation
2015	Opinions of the General Office of the State Council for the Implementation of Deepening Education Reform on Innovation and Entrepreneurship in Universities and Colleges
2015	Opinions of the State Council on Vigorously Promoting Policies and Measures for Mass Entrepreneurship and Innovation
2016	Implementing Opinions of the General Office of the State Council on Construction of the Mass Entrepreneurship and Innovation Demonstration Bases
2017	Opinions of the State Council on Strengthening the Implementation of Innovation-Driven Development Strategy to Further Promote the In-depth Development of Mass Entrepreneurship and Innovation
2017	Implementing Opinions of the General Office of the State Council on Construction of the Second Batch of Mass Entrepreneurship and Innovation Demonstration Bases
2018	Opinions of the State Council on Promoting the High-quality Development of Innovation and Entrepreneurship to Create an Upgraded Version of "Mass Entrepreneurship and Innovation"
2018	Notice of the General Office of the Ministry of Education on Deepening the Development of Demonstration Universities for Innovation and Entrepreneurship Education Reform in 2018
2019	Notice of the Ministry of Education on Printing and Distributing the Administrative Measures for the Innovation and Entrepreneurship Training Plans of National College Students
2020	Implementation Opinions of the General Office of the State Council on Enhancing the Driving Role of Demonstration Bases for Mass Entrepreneurship and Innovation and Further Promoting Reform, Stabilizing Employment and Enhancing Motivation
2021	Guiding Opinions of the General Office of the State Council on Further Supporting College Students in Innovation and Entrepreneurship

In addition to the introduction of entrepreneurship policies, the government has also taken measures to increase policy advocacy. For example, the General Office of China's Ministry of Education (2022) issued the Notice of the General Office of the Ministry of Education on the Launch of the 2022 College Graduates Employment and Entrepreneurship Policy Publicity

Month Activities, requiring relevant government departments, colleges and universities, as well as media organizations to deliver policy knowledge to college students and graduates in the forms of making policy announcements, carrying out policy interpretations, launching online services, and organizing offline information sessions.

With strong policy support, the employment of college students has been resolved to some extent through "entrepreneurship-led employment" (Krueger Jr, 2007). However, in general, the entrepreneurial situation of Chinese college students is not optimistic. According to the 2018 Chinese College Students' Employment Report (Employment Blue Book), only 2.9% of the 2017 college graduates started their own business; as per the 2020 Chinese College Graduates' Employment Report (MyCOS, 2021), the proportion of 2019 graduates from general higher education institutions who chose to start their own business dropped to 1.6%; and the 2022 Chinese College Students' Employment Report published by MyCOS reported that only 1.2% of the 2021 undergraduates had done so, which is the lowest percentage over the years.

Employment has always been a major problem in China, and it has been particularly prominent among college graduates. In recent years, as the number of college graduates continues to grow, many end up unemployed, which has seriously affected the harmony and stability of the Chinese society. According to the data published by China's Ministry of Education in 2022, the number of college graduates in China reached 10.76 million in 2022, which has been growing for ten consecutive years since 2012. On the one hand, college graduates must face the pressure of slowing economic growth and job saturation; on the other hand, due to college enrollment expansion in China, the number continues to grow; competition for employment opportunities gets more and more fierce; and the employment situation becomes more and more severe.

Under these conditions, self-employment has become an important way for college students to achieve work. Encouraging and supporting college students to start their own business has a positive effect on relieving the employment pressure of college graduates, and it is important for the development of China's economy. The era of knowledge economy brings various changes in society, while the rise of new industries and the generation of new growth are, to a large extent, directly provided by entrepreneurial activities or from their promotion. Therefore, encouraging college students to start their own business and activating their entrepreneurial intentions are of great significance to effectively address employment difficulties and enhance China's economic resilience.

1.1.3 Challenges facing college student entrepreneurship in China

Despite its increasing importance for driving socio-economic development and addressing employment challenges, starting one's own business is not a popular choice among college graduates in China. According to the *Employment Blue Book: 2019 Employment Report for Chinese College Students* published by MyCOS, only 2.7% of the college graduates in 2018 chose to start their own businesses, and only 44.8% of them have sticked to their choice after three years (China News, 2019). The rate is very low compared to the U.S., with 17% of its 2022 graduates currently operating their own businesses and another 43% planning to follow suit after graduation (Scatton, 2022). Multiple reasons could lie behind this disappointing fact.

First, college students generally have no or limited entrepreneurial experiences. As a result, they often do not have the necessary skills including communication and coordination skills needed for successful entrepreneurship (R. L. Yang et al., 2018). Although some students have internship or part-time work experiences, those are not sufficient to acquire what is needed for entrepreneurship, such as human and social capital, excellent social skills, perseverance, management and leadership qualities (Markman & Baron, 2003).

Second, it matters whether there is an encouraging and enabling environment (Dumi & Maliqi, 2011; Unachukwu, 2009). This generally has to do with the incentives in society and the institutions (Ahlstrom & Ding, 2015). For college students, in addition to the campus environment, the policy environment, social environment and financial environment are also relevant (X. S. Wei et al., 2020; Yao et al., 2016). Besides, family environment can also have a positive and significant effect on their entrepreneurial intention (Hutagalung et al., 2017).

Third, the challenges or risks of entrepreneurship, or more precisely "risk aversion" (Amit et al., 1993), are a major inhibitor. Global statistics suggest that up to 90% of startups fail, and 10% of startups cannot survive the first year, and even around 30% of startups with venture backing end up in failure (Howarth, 2022). Such gloomy reality can certainly dissuade college students.

Other factors leading to low entrepreneurial activity could include social expectations, demographic trends and employment practices of large companies (Cusumano, 2016). All these factors affect the entrepreneurial intentions of college students, which then affect their entrepreneurial behavior.

In sum, college student entrepreneurship has been regarded a priority by the Chinese government as it provides a solution to employment difficulty and is a major driver of economic development. However, the entrepreneurship rate is not high among college graduates in China.

1.2 Entrepreneurship in Zhejiang Province

1.2.1 Basic situation of Zhejiang Province

Zhejiang Province is located on the southern flank of the Yangtze River Delta on the southeast coast of China. It now has 11 prefecture-level cities, 37 municipal districts, 20 county-level cities, 33 counties (including one autonomous county), 618 towns, 258 townships and 488 streets. By the end of 2021, the resident population of Zhejiang Province had reached 65.4 million. The province's GDP in 2021 was 7,351.6 billion CNY, an increase of 8.5% over the previous year in comparable terms. Zhejiang's GDP has been ranking the fourth among all provinces in China for 26 consecutive years. Its export contribution is among the highest in the country, and its per capita disposable income of urban and rural residents has remained the highest in China for many years. It is particularly worth mentioning that Zhejiang Province has been leading China in terms of Internet technology represented by its highly developed e-commerce sector led by Alibaba Group. The World Internet Conference has been held in Wuzhen, Zhejiang Province every year. To support its highly developed Internet-based economy, it even approved China's first local law focusing on the digital economy (Feng, 2020).

1.2.2 College student entrepreneurship in Zhejiang Province

The People's Government of Zhejiang Province has attached great significance to entrepreneurship. On July 27, 2015, the General Office of The People's Government of Zhejiang Province issued and implemented the Opinions of The People's Government of Zhejiang Province on Supporting Mass Entrepreneurship and Promoting Employment (referred to as the "Opinions" below). The Opinions aim to encourage the public to actively pursue entrepreneurship through innovations in 12 aspects: relaxing market access, supporting the development of guaranteed loans for entrepreneurship, tolerating business failure, increasing financial support for entrepreneurship, implementing rent subsidies, broadening investment and financing channels for entrepreneurship, supporting e-commerce entrepreneurship in rural areas, encouraging researchers to start their own businesses, supporting the development of entrepreneurial platforms, strengthening entrepreneurial services, supporting enterprises to

stabilize jobs and giving full play to the role of micro and small enterprises as the main employers. Under the innovation of "supporting the development of guaranteed loans for entrepreneurship", it is stipulated that "college students who have the requirements and certain conditions to start a business but lack the capital to do so can apply for a loan not exceeding 300,000 CNY", and that "full discounted interests will be granted to current college students and graduates within five years of graduation".

On March 27, 2019, the General Office of Zhejiang Provincial People's Government (2019) issued and implemented the Implementation Opinions of The People's Government of Zhejiang Province on Promoting High Quality Development of Innovation and Entrepreneurship to Create an Upgraded Version of "Mass Innovation and Entrepreneurship", in which it is explicitly stipulated that "Efforts shall be made to strengthen innovation and entrepreneurship education for college students. Measures shall be taken to promote the establishment and development of model entrepreneurship colleges, incorporate innovation and entrepreneurship education into the education and teaching system of colleges and universities, improve the quality of mentor training projects, and allow college students to use their entrepreneurial achievements to apply for the defense of their degree theses. The government shall support universities and vocational colleges to deepen the integration of industry and education, set up innovation and entrepreneurship funds for college students, and accelerate the establishment of training bases and practice bases for innovation and entrepreneurship education."

Zhejiang Province has been a relatively active region for college student entrepreneurship in China and boasts the highest entrepreneurship rate of college graduates, which in 2016 had exceeded the national average to reach 5% (Geng, 2016). It has been pointed out that one of the main reasons for such achievement is the strong government support and it is particularly worth mentioning that The People's Government of Zhejiang Province (2015) issued The Opinions of the People's Government of Zhejiang Province on Supporting Mass Entrepreneurship and Promoting Employment (hereinafter referred to as the "Opinions"). According to these Opinions, college students can apply for a loan worth 100,000 CNY to 500,000 CNY to start their own businesses, and that if the business fails, the government will repay the part of the loan below 100,000 CNY and 80% of the loan above 100,000 CNY.

The second important reason is that the private economy in Zhejiang Province is very strong. Statistics show that in 2020, the total volume of Zhejiang's private economy exceeded four trillion CNY, which is equivalent to the economic volume of Shanghai. Besides, one out of every 26 Zhejiang citizens owns an enterprise (X. He, 2022). Under this favorable private

enterprise business environment, many families in Zhejiang choose to start their own businesses, which is also a major factor influencing college students to do so.

The third reason is that universities in Zhejiang have generally established entrepreneurship colleges and improved the corresponding management system and operation mechanism (Zhejiang Provincial Department of Education, 2015). These policy measures ensured that the self-employment rate of Zhejiang college graduates remain at about 5% (General Office of Zhejiang Provincial People's Government, 2016). This thesis selects college students in Zhejiang province as the sample to explore the influencing factors of entrepreneurial intentions. It is typical and representative and can provide reference for college students in other provinces and cities in China to start their own business.

1.3 Research dilemma

In the context of the extremely severe employment situation of college students in China, the extant and overly dispersed research, as it will be detailed in Chapter 2, makes it difficult for the relevant Chinese government agencies, as well as for colleges and universities, to identify and clarify the main factors affecting college students' entrepreneurial intentions. Such status quo has hindered the adjustment and optimization of current entrepreneurship incentives as well as the formulation of reasonable and effective policies to support college students' innovation and entrepreneurship according to local conditions. This is not only counterproductive to mobilizing college students' enthusiasm to start their own businesses, but also detrimental to creating an atmosphere that encourages and supports entrepreneurship, resulting in a waste of resources.

1.4 Research purpose

This thesis aims to identify the key variables that influence college students' entrepreneurial intentions in the Chinese context by taking college students in Zhejiang Province as a sample. Zhejiang Province has always been at the forefront of the reform and opening-up and is home to many entrepreneurial ventures including the renowned Alibaba, thus being an ideal ground for this research, which aims at providing useful references for tertiary education institutions and for the Chinese government to formulate the appropriate policies on college student entrepreneurship. This study also aims to provide insights for Chinese college students to start their own businesses.

1.5 Research questions

To achieve the above research purpose, with a warning against the representativeness of the sample which was only collected in Zhejiang Province and hinders generalization of results, the following five research questions are put forward:

(1) Do Chinese college students' entrepreneurial experiences influence their entrepreneurial attitudes and entrepreneurial intentions?

(2) Does entrepreneurial environment play a role in influencing the entrepreneurial intentions of Chinese college students?

(3) Is entrepreneurship education related to the entrepreneurial intentions of Chinese college students?

(4) Are entrepreneurial traits related to the entrepreneurial intentions of Chinese college students?

(5) Do Chinese college students' entrepreneurial attitudes mediate the relationship between entrepreneurial experiences and entrepreneurial intentions?

1.6 Research methods

As it will be explained in more detail in Chapter 3, the present study employs quantitative research methods by means of a questionnaire survey to explore the factors influencing Chinese college students' entrepreneurial intentions. The data were collected from a sample of students in business schools across five cities in Zhejiang Province.

1.6.1 Questionnaire survey

Questionnaires are frequently used in quantitative research to gain insights into phenomena. A questionnaire survey is considered an effective method of collecting a wide range of information from a large number of respondents (Roopa & Rani, 2012). In this study, a total of 900 questionnaires were distributed between November 1 and November 20, 2020. To reach a larger sample given the limitations caused by the COVID-19 pandemic, online questionnaire survey was conducted in addition to an on-site one. Business school students located in five cities of Zhejiang Province, namely, Jinhua City, Hangzhou City, Ningbo City, Wenzhou City and Shaoxing City, were selected as respondents. The survey was meant to explore the influence of pre-defined variables on college students' entrepreneurial intentions.

1.6.2 Quantitative analysis

The present study used SPSS and Amos statistical software to analyze the collected data. Specifically, SPSS was used for exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and analysis of variance (ANOVA). Amos was used to construct a structural equation model (SEM) to test the proposed hypotheses.

1.7 Research significance

Through an empirical study that answers the above research questions, this thesis bears the following practical and theoretical significance.

1.7.1 Practical significance

This study constructs a model of the factors influencing college students' entrepreneurial intentions and empirically examines the effects of several variables on such intentions. Thus, it bears practical significance in the following three aspects.

First, it may help Chinese government departments to understand the determinants of college students' entrepreneurial intentions and thus help them formulate more targeted policies to support the drive towards innovation and entrepreneurship. A favorable policy environment will undoubtedly help stimulate college students' entrepreneurial enthusiasm and thus better promote the employment of college students in China.

Second, an in-depth understanding of the factors influencing college students' entrepreneurial intentions may help them identify the basic elements required to establish entrepreneurship, including entrepreneurial knowledge and personality traits, effectively help them solve the problems they encounter in the process of entrepreneurship, and guide them to carry out entrepreneurial activities in the expected direction and goal.

Third, the results of this study are expected to promote the development of entrepreneurship education for college students, provide theoretical references for colleges and universities to further improve the entrepreneurship education system for college students, and help further enhance their entrepreneurial consciousness and entrepreneurial competence.

1.7.2 Theoretical significance

First, based on previous literature, this study constructs a model of the factors influencing the entrepreneurial intentions of Chinese college students by introducing entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits, and entrepreneurial attitudes as variables. This model may serve as a reference for future studies on this topic with different samples and in different geographies in China.

Second, this research explores whether entrepreneurial attitudes mediate the relationship between entrepreneurial experiences and entrepreneurial intentions among college students. It further adds to the limited existing literature on the relationships among entrepreneurial experiences, entrepreneurial attitudes, and college students' entrepreneurial intentions.

1.8 Thesis structure

This thesis consists of the following five chapters.

Chapter 1: Introduction. This chapter introduces the research background, identifies the research dilemma, puts forward the research purpose and research questions, briefly introduces the research methods, clarifies the research significance from the theoretical and practical perspectives, and presents the thesis structure.

Chapter 2: Literature Review. Existing literature on entrepreneurship and college student entrepreneurship is reviewed to uncover the main variables of the thesis, followed by a detailed review of the existing literature on the said variables. On this basis, a model of the factors influencing college students' entrepreneurial intentions is constructed, and the research hypotheses are put forward.

Chapter 3: Research Methods. This chapter describes the research design, including questionnaire design and the sampling procedure, and describes the data analysis methods as well as the measures and their reliability and validity analyses.

Chapter 4: Results. The relationships among the variables are discussed through structural equation modeling (SEM) analysis, based on which the hypotheses will be tested.

Chapter 5: Discussion, Conclusions and Prospects. The results are discussed from the perspective of variance analysis results; main results are further analyzed; and conclusions are drawn. The theoretical and managerial insights are highlighted; recommendations are made for relevant stakeholders, including government authorities and policy makers,

colleges/universities and managers, parents, and college students; limitations are pointed out; and suggestions for future research are put forward.

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Chapter 2: Literature Review

This chapter provides a review of existing research related to the core concepts of the study, including entrepreneurship, college student entrepreneurship and entrepreneurial intentions. The determinants of college students' entrepreneurial intentions are identified through the literature review, and existing studies on such determinants are extensively reviewed, on which basis research hypotheses are put forward, and the research model on the influencing factors of Chinese students' entrepreneurial intentions is constructed.

2.1 Entrepreneurship and college student entrepreneurship

2.1.1 Definition of entrepreneurship

The word "entrepreneur" has its origin in the French word "entrepreneur", which means "someone who undertakes" and specifically "someone who starts a business" in the business context (Sathya, 2019). Merriam-Webster Dictionary defines an entrepreneur as "one who organizes, manages, and assumes the risk of a business or enterprise". An entrepreneur's act of starting a business is referred to as "entrepreneurship", which is a term first introduced by the famous French economist Richard Cantillon in his book entitled *Essay on the Nature of Trade in General*, in which he argued that entrepreneurship is a risky behavior undertaken by entrepreneurs in economic activities (Cantillon, 1755). Later, entrepreneurship has come to be defined as "the creation of new business enterprises by individuals or small groups, with the entrepreneur assuming the role of society's major agent of change, initiating the industrial progress that leads to wider cultural shifts" (Kent et al., 1982, p. 1). Cantillon (1755) opened the door to the study of entrepreneurship theory and laid the foundation for its development.

Since the introduction of "entrepreneurship", the theory of entrepreneurship has evolved over the last decades and has been continuously enriched and improved. Entrepreneurship research dates back to 1870 (Landström & Benner, 2010) and started to flourish in the 1970s (Kent et al., 1982).

Low and MacMillan (1988) pointed out that early entrepreneurship research was focused on only documenting the entrepreneurial phenomenon and was thus exploratory in nature. They called for a shift of focus towards more theory-driven research and causality in order to develop

more rigorous models of the contextual and process-oriented factors. Their call led to the evolutionary approach of entrepreneurship, which is based on Darwinism, Lamarckism and Weismannism (Breslin, 2008).

Up to now, different scholars have defined the concept of entrepreneurship from different perspectives according to their own research contexts, forming eight schools of thought: risk school, leadership school, innovation school, cognitive school, social school, management school, strategy school, and opportunity school (Bhide, 1996; Cantillon, 1755; Casson, 1982; Drucker, 1985; Marshall, 1890; Saxenian, 1996; Schumpeter, 1934; Shane & Venkataraman, 2001).

The risk school considers the entrepreneur an uncertainty decision maker. Uncertainty implies risk and so the entrepreneur needs to be willing to take risks. This school emphasizes the risk of the entrepreneurial process (Cantillon, 1755; Knight, 1921). The leadership school emphasizes the leadership of the entrepreneur positing that entrepreneurship is about combining the factors of production and bringing them together, and that the entrepreneur is the coordinator and leader of the production process and must have the ability to anticipate production and consumption trends and the ability to lead others and manage the situation (Marshall, 1890; Say, 1861).

The innovation school argues that entrepreneurship is a process of achieving innovation, and innovation is the essential means of entrepreneurship. It emphasizes that entrepreneurs need to innovate products, technologies or business models, either by themselves or through others, in order to achieve new combinations of production factors (Schumpeter, 1934, 1942). The cognitive school underscores that entrepreneurs must have more than normal cognition and must have the "sensitivity" to identify markets and opportunities, and only those who have this ability can be called entrepreneurs (Casson, 1982; Kirzner 1973).

The social school holds that the social environment has a significant impact on entrepreneurship and that entrepreneurs are more likely to succeed when they have access to adequate and timely resources through social networks (Saxenian, 1996; Woodward, 1988). The management school considers entrepreneurship a management method, a management behavior, a type of systematic work that can and needs to be organized, and can even be part of daily management, emphasizing the importance of entrepreneurial management (Drucker, 1985; Roberts et al., 1994).

The strategy school emphasizes the importance of strategic management in entrepreneurship and believes that there should not be a strict distinction between entrepreneurship and strategic management, and that entrepreneurship and strategic

management can be integrated through six means, namely innovation, networking, internationalization, organizational learning, top management teams and their governance, and corporate growth (Bhide, 1996; Ireland et al., 2001). The opportunity school defines entrepreneurship as the process of identifying or developing entrepreneurial opportunities through the entrepreneur's own capabilities, and the whole process of entrepreneurship is to identify entrepreneurial opportunities and develop them using various resources (Shane & Venkataraman, 2001; Timmons et al., 1999).

In recent years, Chinese scholars have also conducted substantial research around entrepreneurship and formed different research perspectives. Some researchers define the connotation of entrepreneurship from the perspective of entrepreneurial process. They believe that entrepreneurship is the process of identifying and seizing opportunities through continuous efforts and dedication and taking certain risks, integrating resources in a certain organizational form to create a new enterprise, providing new products and services, and thus generating new value (C. X. He, 2019; J. Hu, 2018; Ji, 2010; L. C. Li, 2006; X. Tan, 2018; X. M. Wang, 2013).

Some scholars define entrepreneurship as a value-adding process. Others take the perspective of creating new value and consider innovation as an important means for individuals to proactively organize various resources to create value and wealth, which is innovative, complicated, risky, rewarding and social (Y. Jiang, 2008; Lin & Jiang, 2005; Niu, 2009). Some scholars define entrepreneurship from the perspective of integrating resources. For example, Y. L. Zhang and Yang (2003) define entrepreneurship as the process of forming a team and integrating resources after seizing an opportunity, which is the process of integrating the entrepreneur's innovation, risk-taking spirit and rational decision-making. H. Zhao (2015) also proposed that entrepreneurship is the act of integrating resources with a focus on market demand. Other scholars define entrepreneurship in both broad and narrow senses. For example, T. L. Wang (2009) argues that entrepreneurship in the broad sense refers to innovative activities, which are embodied through the entrepreneurial spirit of entrepreneurs and are the process of creating new value; while entrepreneurship in the narrow sense refers to the process where entrepreneurs seize opportunities, take certain risks, and create new products and services.

The above research results show that different scholars have studied entrepreneurship from different perspectives with different research positions and purposes, but there is no universally accepted definition yet. This is mainly because entrepreneurship involves many disciplines, such as psychology, economics, sociology, and management. By analyzing the concept of entrepreneurship proposed by scholars, the author argues that the concept of entrepreneurship should contain variables such as entrepreneurial opportunities, entrepreneurial skills,

entrepreneurial resources, and entrepreneurial environment. Besides, entrepreneurship is also a process of creating and realizing value that is innovative, pioneering, and requires risk-taking. Therefore, this thesis defines entrepreneurship as a creative activity driven by external factors in which individuals or groups utilize their own abilities to actively capture opportunities, integrate entrepreneurial resources, create new businesses, and take certain risks.

2.1.2 Existing studies on entrepreneurship

A comprehensive review of the existing literature on entrepreneurship research shows that scholars have conducted extensive studies focusing on three stages: pre-startup stage, startup stage and post-startup stage.

1. Pre-startup related research has focused on the antecedents of entrepreneurial decision-making. Some scholars have studied the influences of demographic characteristics such as gender, intelligence, interests and hobbies, and work experience on entrepreneurial decisions (Fairlie & Meyer, 2000; Hartog et al., 2010; Kacperczyk & Marx, 2016; Van der Sluis et al., 2008). For example, Van der Sluis et al. (2008) pointed out that the relationship between education and the selection of starting a business is not significant, but education can significantly affect the performance of start-ups. A study on educational mismatch showed that individuals are more likely to choose entrepreneurship when their educational background is not consistent with the job content (Stenard & Sauermann, 2016). On ethnic terms, Fairlie and Meyer (2000) analyzed the entrepreneurial trends of white and black males during the period from 1910 to 1990 using census and CPS microdata. The results revealed differences in entrepreneurship between black and white participants. Hartog et al. (2010) noted that the level of intelligence has an impact on entrepreneurial possibilities and will continue to influence entrepreneurs' subsequent income.

Studies by Elfenbein et al. (2010) and Kacperczyk and Marx (2016) showed that individuals' work experiences will also have an impact on entrepreneurial decisions. In addition to demographic characteristics, external environmental factors, including the political system and economic environment, will also influence individuals' entrepreneurial decisions. For example, the study conducted by Y. P. Wu and Wang (2015) suggests that political networks significantly affect entrepreneurship, but this effect is limited to countries and regions with poor institutional environments. Similarly, the quality of the institutional environment predicts the entrepreneurial intentions of returnees who choose to start a business (Q. J. Yang & Wang, 2010).

G. Chen (2015) pointed out that government regulation significantly reduces the likelihood of individual entrepreneurship, with each standard deviation increase in government regulation decreasing the probability of individual entrepreneurship by 1.68% and having a differential impact on different types of individuals. Using data from 70 countries over the period from 2005 to 2015, Chowdhury et al. (2019) found that formal and informal institutional environments (regulatory business environment, availability of debt and venture capital, human capital and entrepreneurial cognition, government support, government size, corruption) have a profound impact on the quantity and quality of entrepreneurship. Besides, financial subsidies significantly increase research and development (R&D) investment activity in academic entrepreneurship, with stronger policy incentive effects than tax incentives (C. Z. Du & Liu, 2019).

2. Existing studies on the startup stage are mainly focused on exploring the factors influencing the survival and performance of startups. The study by Gimeno et al. (1997) shows that prior entrepreneurial experience can enhance the human capital of entrepreneurs and positively affect the performance of new enterprises. While entrepreneurial experience brings certain advantages, it also brings some disadvantages. So, the relationship between entrepreneurial experience and the business performance of startups is not always significant (Westhead & Wright, 1998). In turn, the social capital and location of startups, such as being located in a place with a high number of related brand companies, significantly increase their chances for survival (Kalnins & Chung, 2006).

Gimmon and Levie (2010) argued that founders' social capital and inward investment would have an impact on firm performance and affect the likelihood of survival of startups. Similarly, the experience of the entrepreneurial team will also affect the performance of startups (Delmar & Shane, 2006). W. B. Hu et al. (2014) identified an inverted U-shaped relationship between the social heterogeneity of entrepreneurial teams and firm performance. Besides, risk-taking propensity and proactiveness of entrepreneurial teams strengthened the inverted U-shaped relationship, while innovativeness had an opposite effect. L. G. Cui et al. (2019) found that entrepreneurial passion significantly increased the performance of startups and contributed to their performance by affecting entrepreneurial self-efficacy.

Some studies have also analyzed the effect of social networks with different relationships on the likelihood of individual entrepreneurship. For example, it was found that entrepreneurial network capabilities facilitate the identification and development of individual entrepreneurial opportunities, while network location and network capabilities play a substitute role in the identification of entrepreneurial opportunities (Ren & Shu, 2014). W. Q. Yan et al. (2019)

explored the impact of domestic entrepreneurial networks on returnee startups and found that the quality and strength of embedded domestic entrepreneurial networks significantly improved the performance and organizational legitimacy of returnee entrepreneurs. Based on a questionnaire survey of 2,014 startups, H. H. Wang et al. (2019) found that entrepreneurial networks had a significant impact on startup performance, that formal and informal network diversity and relationship strength significantly improved firm performance, and that resource bricolage played a mediating role.

3. Existing studies on the post-startup stage are focused on the effect of entrepreneurial experience on the likelihood of the second venture and the performance of startups. Such research has explored the effect of successful and unsuccessful entrepreneurial experience on individuals' second venture and the performance of startups. Sandberg (1986) was among the first researchers to pay attention to the effect of entrepreneurial experiences on the second venture and the performance of startups. His study showed that previous successful entrepreneurial experiences were not significantly related to the performance of startups. However, some subsequent studies have identified the opposite. For example, P. Wang and Lu (2015) identified significant differences in entrepreneurial alertness, prior knowledge, and entrepreneurial opportunity recognition between individuals with entrepreneurial experience and those without. Miralles et al. (2016) performed structural equational modelling (SEM) analysis on 431 respondents of working-age and uncovered a positive relationship between prior entrepreneurial experience and entrepreneurial intention.

Meanwhile, there are also studies focused on the possible effects of failed entrepreneurial experiences (Devece et al., 2016; Kc et al., 2013; McGrath, 1999). For example, it was found that the ability of individuals to gain knowledge and experience from failed entrepreneurial experiences depends on the external environment they find themselves in (Muehlfeld et al., 2012). Kc et al. (2013) pointed out that individuals are able to gain more knowledge from their own successful experiences and the failed experiences of others. H. F. Wang et al. (2017) pointed out in their study that failed entrepreneurial experiences would serve as an important pathway for learning and that there is an inverted U-shaped relationship between learning from entrepreneurial failure and the performance of startups. Baù et al. (2017) showed that failed entrepreneurial experiences and the likelihood of individuals choosing to start a business again are strongly associated with age, gender, and different career stages (early, mid, and late stages). Hao et al. (2019) noted that individuals adopt both single-loop and double-loop learning after entrepreneurial failure, where double-loop learning is more efficient and effective and helps to enhance re-entrepreneurial performance.

2.1.3 College student entrepreneurship

College student entrepreneurship refers to an entrepreneurial activity carried out mainly by college students (You et al., 2017; F. F. Zhu et al., 2017). before or immediately after graduation. Yet its definition has been a bone of contention in academia. Although scholars have different focuses, most of them present some characteristics around the aspects of starting or going to start a business (Nabi et al., 2006).

B. Y. Guo (2002) defines college student entrepreneurship as the activity of relying on their own ability and skills to start their own business to turn knowledge into wealth (You et al., 2017), requiring the participation of individuals, families, schools, and society. Entrepreneurship is a way for college students to explore and seize the opportunity to start a business or an industrial enterprise based on their own ability and existing conditions, so as to achieve economic and social values. W. J. Wu (2008) considers entrepreneurship an economic activity in which college students identify and seize opportunities to create new enterprises with the goal of maximizing enterprise value. Y. G. Chen (2010) pointed out that college student entrepreneurship is the process of identifying and seizing opportunities, integrating resources, and starting new enterprises in a constantly evolving environment. X. Z. Wang (2017) argues that college student entrepreneurship refers to the innovation process in which college students look for business opportunities, start a business or establish a company, and build elements related to the business.

Some researchers suggest that there are some differences between the definition of "college students" in general and the definition of "college students" in the context of entrepreneurship (F. F. Zhu et al., 2017). In general, college students refer to those who have received higher education in colleges and universities, including junior college students, undergraduates, and graduate students. This way of definition does not fully embody the role of college students in entrepreneurship. With reference to China's national policy on supporting college student entrepreneurship (the "college students" supported by China's policy are those who are enrolled in higher education or have received higher education within two years of graduation), K. Zhang (2013) defines college student entrepreneurship as the process of obtaining economic returns and creating social value by providing products or services needed by society for the purpose of satisfying certain needs in the market, which is carried out by students of higher education with academic registration as well as college graduates, postgraduates, doctors, and returned

students (international students are confirmed in accordance with relevant national regulations) within two years of graduation.

The above definitions share the following three common points: first, college student entrepreneurship is a choice made by college students under their own ability and existing resources; second, college student entrepreneurship requires the ability to identify and seize opportunities; third, college student entrepreneurship entails certain risks. On this basis, this thesis defines college student entrepreneurship as *a creative activity in which individuals or groups of college students use entrepreneurial thinking to seize entrepreneurial opportunities and create new organizations or new products or services to gain profits and take risks*.

You et al. (2017) collected and analyzed the data from a survey of career service directors of 840 Chinese colleges and universities in China. They found that not many Chinese college graduates pursue entrepreneurship and only a small percentage of startups they create actually survive despite the high priority given to college student entrepreneurship by the Chinese government and college graduates' high levels of entrepreneurial intention. According to the Statistical Communiqué of the People's Republic of China on the National Economic and Social Development released by China's National Bureau of Statistics, the entrepreneurship rate of college graduates in 2014 was only 2.9%, and that in 2015 was 3.0% (MyCOS, 2016). College graduate entrepreneurs struggle to sustain their businesses. To increase the survival rate of enterprises established by college graduates, H. Xu (2019) put forward the concept of "entrepreneuriability", which refers to the ability or strength to start a successful business. The entrepreneuriability of college students is composed of five levels: entrepreneurial skills, entrepreneurial knowledge, entrepreneurial values, entrepreneurial self-image and entrepreneurial motivations.

2.1.4 Types of college student entrepreneurship

At present, researchers have not yet come up with a consistent and clear definition of the types of entrepreneurship among college students. Extant studies mainly classify these types from the perspectives of the motivation, scope, and forms. H. J. Wang et al. (2017), for example, classify the different types into survival entrepreneurship, opportunity entrepreneurship, and hybrid entrepreneurship from the perspective of entrepreneurial motivation. Survival entrepreneurship refers to a type where entrepreneurs are forced to choose to start up a business due to the pressure of survival. It is a choice forced by the difficulty of obtaining other employment opportunities and is thus a passive (push) entry of entrepreneurs into the field. Opportunity

entrepreneurship refers to entrepreneurs who actively discover and identify opportunities and carry out activities induced by them. It is a proactive entry of entrepreneurs into the field. Finally, hybrid entrepreneurship combines the characteristics of both survival and opportunity entrepreneurship (H. J. Wang et al., 2017).

From the perspective of scope, entrepreneurship can be divided into independent entrepreneurship and intrapreneurship (R. Y. Xu, 2010; Z. C. Zhou, 2017). The first concept refers to a process where the entrepreneur who, as an individual or a team, establishes a business belonging to himself/herself or the team from scratch by grasping business opportunities and pursues profit. Intrapreneurship refers to the process in which the entrepreneur is already integrated in a particular company or business but captures an opportunity leveraging on the resources of that particular company or business.

The forms of entrepreneurship mainly include replication, imitation, and innovation (Z. C. Zhou, 2017). In replication-based entrepreneurship, entrepreneurs simply replicate existing entrepreneurial models and combine the experience of their predecessors. In imitation-based entrepreneurship, entrepreneurs take the successful entrepreneurship of others as a template and imitate and learn related entrepreneurial projects. Innovation-based entrepreneurship refers to a process where the entrepreneur carries out entrepreneurial activities with new thinking, new technologies, and new ideas (Z. C. Zhou, 2017).

In the particular field of college student entrepreneurship, X. Y. Chen and Han (2014) identified four types namely independent self-initiated type, product franchise agency type, creative type, and incubator type. In the first case, college students, as individuals or a team, start individual proprietorship or a joint venture managed by themselves or their team and continuously develop the business by accumulating original capital and experience. In the product franchise agent type, college students start their own business as individuals or teams adopting the head office-branch model being responsible for business activities as individuals or teams according to the size of the business. The creative type is a model in which college students dare to break through the traditional entrepreneurial model and use new thinking and new technology to start their own business; and incubator type refers to an entrepreneurial activity where college students are driven by entrepreneurship competitions or the influence, fund support, and catalyst of college entrepreneurship parks.

College student entrepreneurship encompasses a group of people who have received higher education and (in principle) possess certain innovative thinking and entrepreneurial ability. They also boast the ability to identify and grasp business opportunities. With due consideration of the characteristics of college students, and following (J. J. Xu & Yang, 2011), this thesis

argues that they are "knowledge-based and opportunity-based entrepreneurs" and have the advantages of being both opportunity-based and knowledge-based. Besides, the college student entrepreneurship studied in this thesis is not intrapreneurship but belongs to the category of independent entrepreneurship.

2.1.5 Influencing factors of college student entrepreneurship

The influencing factors of college student entrepreneurship are a focus of research among scholars interested in the topic. Existing research involves several aspects since college student entrepreneurship is a complete and systematic process, which often has a significant relationship with entrepreneurial attitude, entrepreneurial intention, and entrepreneurial abilities (F. F. Zhu et al., 2017). Based on a comprehensive review of the literature related to the factors influencing college student entrepreneurship, Q. L. Ding (2014) constructed an evaluation model and identified entrepreneurial intention, entrepreneurial abilities, and entrepreneurial support as the main factors. Among them, the influence of entrepreneurial intention is the most significant. Other studies (T. Jiang, 2014; J. Y. Yang, 2013; Yu et al., 2011) suggest that personal background, entrepreneurial traits, comprehensive quality, environmental factors, entrepreneurial resources, entrepreneurial project selection, and management skills of college students also influence their entrepreneurial intention.

Personal background factors include gender, age, education level, major, and family background (W. Fan & Wang, 2004). For example, a study from India on the relationship between gender and entrepreneurial intentions among college students showed that men exhibited higher levels of entrepreneurial intention than women (Iii et al., 2021). Another study on the influence of academic, family, and peer influence on entrepreneurial intentions of engineering students concluded that both family and peers influence entrepreneurship among college students (Lingappa et al., 2020). More recently, J. P. Zhang and Huang (2021) examined how the global COVID-19 pandemic influenced the impact of entrepreneurial intentions among this target group and identified gender, educational background, major, and family entrepreneurial history to be all relevant factors.

Entrepreneurial traits mainly involve college students' need for achievement, self-efficacy, and resource control (Y. Jiang, 2008). Junid et al. (2017) studied the entrepreneurial traits of college students in technology clusters and concluded that self-efficacy significantly and positively influenced their entrepreneurial intentions. A study from Vietnam also showed that self-efficacy and learning orientation play an important role in explaining the relationship

between entrepreneurship education and entrepreneurial intentions (Hoang et al., 2020). A study based on a self-reported survey among 391 college students in different universities in Malaysia explored the factors influencing entrepreneurial intentions among Malaysian college students. The need for achievement turned out to significantly influence college students' attitudes towards entrepreneurship (Wiramihardja et al., 2022).

Comprehensive quality is composed of entrepreneurial awareness, entrepreneurial passion, entrepreneurial spirit, entrepreneurial abilities, and entrepreneurial mindset of college students. For example, J. Y. Hua et al. (2022) conducted a meta-analysis of 34 independent papers related to the entrepreneurial activities in universities and the entrepreneurial abilities of college students in China and abroad. The results revealed that entrepreneurial activities in universities are significantly positively related to the entrepreneurial abilities of college students. The positive relationship between entrepreneurial awareness and entrepreneurial behavior of college students is also evidenced in a study conducted by J. He (2020).

Environmental factors usually include external environment such as economic and socio-cultural environment, government policies, school education, as well as internal environment such as social capital. Many Chinese researchers have concluded that the entrepreneurial environment has a significant impact on college student entrepreneurship (L. Gao & Liu, 2010; H. Y. Liu, 2010; Y. P. Tian & Wang, 2011; W. Wei & Li, 2013). For example, H. J. Chen et al. (2022) developed and applied a theoretical model of entrepreneurial competencies to examine the paths of those portrayed by students. The results of their study indicate that a diverse learning environment is an important external factor for the development of entrepreneurial competencies among college students. Similarly, optimizing the entrepreneurial environment of college students can enhance their entrepreneurial competencies (Miao et al., 2021).

Entrepreneurial resources mainly include human capital, financial capital and social capital. Qian (2007) found that the level of entrepreneurial resources is a predictor of entrepreneurial intentions, and there is a positive relationship between individuals' ownership of entrepreneurial resources and entrepreneurial intentions. An empirical study by W. F. Liu (2010) confirmed that human capital has a significant effect on entrepreneurial intention, entrepreneurial opportunities, and entrepreneurial quality of college students. Empirical evidence from Spain also showed that specific dimensions of social capital have different effects on student entrepreneurship (Pérez-Macías et al., 2021). In addition, the support of fellow students, friends and family members is also found to be very important social capital (W. Wei & Li, 2013).

The choice of entrepreneurial projects is also one of the basic influencing factors of college student entrepreneurship. According to a relevant survey conducted by China's Ministry of Education, the entrepreneurial failure of Chinese college students is mainly attributed to the wrong choice of entrepreneurial project (Yu et al., 2011). This was also confirmed by H. X. Gao and Wang (2020) in their review of the reasons for the failure of entrepreneurship among Chinese college students.

In addition, some researchers have classified the factors influencing college student entrepreneurship into subjective and objective factors and have conducted research around these two factors. Subjective factors usually include individual factors, such as interests, skills, ability, talent, motivation, characteristics, and experience. Objective factors mainly include family, school and social factors, and project selection (M. Yan & An, 2009). Another study found that there is also a significant relationship between college student entrepreneurship and college students' psychological characteristics (J. L. Fan, 2022; H. Zhao & Wibowo, 2021).

In summary, scholars in China and abroad have conducted extensive research on the influencing factors of college student entrepreneurship, which are complicated and diverse. As a result, it is difficult to determine which influencing factors play a greater role and which ones play a smaller role, which requires further analysis and discussion.

2.1.6 Influencing factors of entrepreneurial intentions

Over the decades, researchers have conducted research on the relationships among entrepreneurial trait theory, entrepreneurial abilities, entrepreneurial process, entrepreneurial opportunity, entrepreneurial environment, entrepreneurial cognition, and entrepreneurial intentions, producing a large number of representative and influential research results, which have facilitated the maturation of theory and made entrepreneurship management an emerging discipline. Modern management theory places entrepreneurial opportunity discovery and entrepreneurial behavior at its core (McMullen & Shepherd, 2006; Shane & Venkataraman, 2000). However, both entrepreneurial opportunity discovery and entrepreneurial behavior are driven by entrepreneurial intentions, which are the starting point of entrepreneurial behavior (Shook et al., 2003).

Intention as a predictor of behavior was ascertained in the theory of planned behavior (TPB) model (Ajzen, 1991). In the case of college student entrepreneurship, the goal or desired outcome is entrepreneurial behavior. Entrepreneurial intention, as an antecedent of entrepreneurial behavior that represents one's self-perceived readiness to start a business

(Gieure et al., 2020), has thus become the focus of attention as research has confirmed its important role in college students' decision to start a business (Ozaralli & Rivenburgh, 2016). Gieure et al. (2020) further explored the link between intentions and behavior drawing on the TPB model and discovered that entrepreneurial skills could help bridge the intention-behavior gap. Yet before thinking about how to bridge the intention-behavior gap, the formation of intention in the first place is indispensable. Therefore, most studies are focused on exploring and identifying the factors influencing entrepreneurial intention.

Existing studies show that a major predictor of entrepreneurial intentions is entrepreneurial attitudes (Y. Q. Li et al., 2008; Pihie & Bagheri, 2010; P. B. Robinson et al., 1991; Sivarajah & Achchuthan, 2013). This is in line with the theory of planned behavior (TPB). According to TPB, behavioral attitude is a predictor of behavioral intention (Ajzen, 1991). Some scholars have constructed extended TPB models to study college students' entrepreneurial intentions (L. H. Duan, 2021; Liao, 2010; Naia et al., 2017; Virasa et al., 2022; Yousaf et al., 2021). Most of these TPB-based studies demonstrated that attitude is a strong antecedent of college students' entrepreneurial intentions (Anjum, Farrukh, et al., 2020; Fragoso et al., 2020; Yousaf et al., 2021).

Entrepreneurial attitudes have been proven to be an important influencing factor of entrepreneurial intentions. Pihie and Bagheri (2010) investigated entrepreneurial self-efficacy and entrepreneurial attitudes among 2,574 secondary school students in Malaysia based on a self-reported survey. The findings suggest the relevance of three dimensions of entrepreneurial attitudes: achievement cognition, self-esteem cognition and achievement affect. Apart from directly influencing entrepreneurial intentions, entrepreneurial attitudes may also act as a mediator. For example, an empirical study conducted in Indonesia based on a survey among 206 respondents revealed the partial mediating effect of entrepreneurial attitudes in the relationship between entrepreneurial characteristics and entrepreneurial intentions (Kusmintarti et al., 2014).

Multiple factors have been found to influence entrepreneurial attitudes. Y. F. Chen and Lai (2010) surveyed 1,085 business students in technological colleges and universities in Taiwan and found that personality traits and environmental cognition indirectly influence entrepreneurial attitudes. Ali et al. (2011) explored the entrepreneurial attitudes of 480 MBA students from six public universities in Pakistan. Three factors, namely, entrepreneurial intentions, personal factors and entrepreneurial acceptability, were identified to influence entrepreneurial attitudes. Earlier on, Harris and Gibson (2008) conducted a survey among 216 US business students to explore the antecedents of entrepreneurial attitudes and uncovered the

relevance of entrepreneurial experiences. The influence of entrepreneurial experiences on entrepreneurial attitudes was also empirically evidenced by the survey conducted by Ajiwibawani and Subroto (2017) among 249 students. Specific entrepreneurial experiences of college students may include the experience of participating in entrepreneurial teams (D. He, 2006), entrepreneurship education, internship experiences and management knowledge (Dai, 2012; Y. Jiang, 2008), and part-time work experiences (Dai, 2012).

Some researchers explored the influence of the entrepreneurial environment on entrepreneurial intention. Empirical evidence from Sudan suggested that social and cultural beliefs as well as government policies together shape the entrepreneurial environment in the Sudanese society (Gangi & Timan, 2013). Grundstén (2004) explored 271 business plan competition participants and entrepreneurship students at selected universities. The findings revealed that environmental factors affect entrepreneurial intentions and that different external factors affect the entrepreneurial intentions development process at different phases. Yao et al. (2016) surveyed 729 students in Chinese universities and found that their entrepreneurial intentions were positively influenced by their perceived economic socio-economic environment. Pietrzak et al. (2017) found that entrepreneurial environment in Poland is a latent variable consisting of multiple criteria.

Entrepreneurship education refers to "the process of providing individuals with the ability to recognize commercial opportunities and the insight, self-esteem, knowledge and skills to act on them" (C. Jones & English, 2004) and it has been found to be positively related to college students' entrepreneurial intentions (Birdthistle et al., 2007; Clark, 1998b; Pittaway & Cope, 2007). In other words, college students who have received entrepreneurship education will be more likely to develop entrepreneurial intentions and entrepreneurship education will positively influence their actual entrepreneurial behavior.

Some studies (Altinay et al., 2012; Karabulut, 2016) suggest that personality traits may also play a role in shaping entrepreneurial intentions. The dimensions of these personality traits include need for achievement, internal locus of control, entrepreneurial alertness, and risk tolerance (Karabulut, 2016). The role of entrepreneurial traits has also been validated by Javan (2014), whose research findings show that based on the results among all personality traits, agreeableness, conscientiousness, neuroticism, and openness to experience have positive effects on entrepreneurial intentions. Risk taking propensity potentially mediates the relationship between psychological traits and entrepreneurial intentions. A prominent trait is tolerance of ambiguity, which turns out to have a positive association with risk taking propensity; another relevant trait is locus of control, which, if external, has a negative effect

(Altinay et al., 2012). J. H. Wang et al. (2016) explored the relationship between Big Five personality traits and entrepreneurial intentions and identified two dimensions of entrepreneurial intentions: preparation and conviction. Agreeableness, extraversion, conscientiousness and openness reliably predict both dimensions of entrepreneurial intention, while neuroticism does not. Şahin et al. (2019) performed fuzzy set qualitative comparative analysis (fsQCA) on the survey data collected from two samples and extracted patterns of the Big Five personality traits and entrepreneurial self-efficacy that impact entrepreneurial intentions. The results demonstrated that multiple configurations of entrepreneurial self-efficacy and the big five personality traits can lead to a high level of entrepreneurial intention. In the context of entrepreneurship, the personality traits that shape entrepreneurial intentions are referred to as entrepreneurial traits.

A search of existing studies reveals that there is a considerable number of studies on college students' entrepreneurial intentions and entrepreneurial behavior in different countries. Alam et al. (2019) examined the gap between intentions and behaviors and the results showed that college students' entrepreneurial intentions motivate actual entrepreneurial behaviors. Neneh (2019) explored the gap between entrepreneurial intentions and entrepreneurial behaviors among South African college students and the findings showed a significant positive relationship between these two constructs. Similarly, Shiri et al. (2017) found through a survey of 300 Iranian college students that entrepreneurial intentions are an important determinant of entrepreneurial behavior. A study conducted in Romania came to a similar conclusion (Usaci, 2015). In this sense, studying the influencing factors of college students' entrepreneurial intentions can help to better provide a theoretical reference for promoting entrepreneurship among college students.

A comprehensive review of existing studies on college students' entrepreneurial intentions as conducted above reveals the following findings:

(1) College students' entrepreneurial experiences are considered to be related to their attitudes and intentions.

(2) Extant studies generally suggest that entrepreneurship education is positively related to college students' entrepreneurial intentions.

(3) Entrepreneurial traits are positively related to college students' entrepreneurial intentions.

(4) Entrepreneurial attitudes are positively related to college students' entrepreneurial intentions.

As mentioned in Chapter 1, the entrepreneurial intentions of Chinese college students are not strong. Entrepreneurial intention is an important factor driving entrepreneurial behavior, but a review of existing literature shows that the academic research on the factors affecting entrepreneurial intention is rather dispersed. Specifically, some scholars argue that the entrepreneurial environment is positively related to entrepreneurial intentions (Birdthistle et al., 2007; Clark, 1998a; Pittaway & Cope, 2007; Usman et al., 2022). Others believe that college students' personal traits positively influence their entrepreneurial intention (Ferreira et al., 2022; C. Y. Liang & Chen, 2021; Wibowo et al., 2021; Yousaf et al., 2021). Different studies conclude that college students' entrepreneurial experiences positively predict entrepreneurial intentions (Dai, 2012; Hudea et al., 2021; C. Y. Liang & Chen, 2021) and that entrepreneurship education among college students has a positive effect on entrepreneurial intentions (Y. Chen, 2012; Z. Li & Islam, 2021; Q. Y. Yang, 2009). College students' personal background, personal traits, comprehensive quality, environmental factors, entrepreneurial resources, entrepreneurial project selection, management skills and other factors also influence their entrepreneurial behavior (T. Jiang, 2014; J. Y. Yang, 2013; Yu et al., 2011).

In summary, the factors affecting entrepreneurship among college students are complex and diverse. The variety of research results makes it impossible to identify which influencing factors play a greater role and which play a smaller role. This study identifies five most relevant factors indicated in existing literature: entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits and entrepreneurial attitudes, and explores their influence on college students' entrepreneurial intentions.

2.2 Entrepreneurial experiences

2.2.1 Origin and concept of entrepreneurial experiences

In the English language, experience can mean both the past events a person has gone through or the lessons the person has learned from such events. However, in the Chinese context, the two meanings are represented by two different expressions. The former emphasises the process, while the latter emphasizes the knowledge, information and resources gained from such process, and is seen as a representation of individual knowledge and skills. Most of the existing literature does not make a strict distinction between the two meanings of experience (G. Q. Chen & Ning, 2009; Choudhury & Haas, 2018; Delmar & Shane, 2006; Kaiser et al., 2018; Lai et al., 2016;

Pan, 2019). “Experience” is defined as “a lived-through event where the individual is ‘in the moment’ (Cantor et al., 1991; Morris et al., 2012).

In terms of related research, the entrepreneurial trait theory dominated entrepreneurship research before 1980, when most scholars focused on the personality and psychological characteristics of entrepreneurs, and studies on entrepreneurial experience did not receive attention. The situation started to change when the American scholar MacMillan called for a focus on entrepreneurs with entrepreneurial experience to truly understand them. Subsequently, scholars enriched the concept of entrepreneurial experience and made academic contributions (R. Wang & Xue, 2010). Huckman and Pisano (2006) point out that experience is a proxy for individual knowledge or skills, but experience and knowledge are not the same.

Westhead and Wright (1998) made a distinction between novice, portfolio and serial founders, where novice founders refer to those with no prior experience of founding a business. Eisenhardt and Martin (2000) view entrepreneurial experience as a proxy for expertise—an underlying ability of an individual to generalize knowledge from one scenario and to apply it effectively to a new setting. In turn, Agbim et al. (2022) define entrepreneurial experience as “a direct observation of, or involvement in, events associated with new business formation. It is also described as prior knowledge and skills acquired in the course of new business formation or involvement in the running of an already created business” (p. 4). X. M. Zhu et al. (2019) argue that entrepreneurial experiences are essentially a process of learning and practice in the entrepreneurial process, and the different learning methods/models of the entrepreneurial process will have a profound impact on the subsequent career of the entrepreneur.

With reference to the existing research and based on the characteristics of the respondents, this thesis defines entrepreneurial experience as *college students’ previous practical experience related to entrepreneurship, including work and/or internship experience, membership in entrepreneurial groups and participation in entrepreneurial competitions*. However, to distinguish it from the concept of entrepreneurship education, the entrepreneurship experience in this thesis does not include the prior entrepreneurship education and training courses received by college students.

2.2.2 Existing studies on entrepreneurial experiences

Kurczewska and Mackiewicz (2020) found that having managerial experience proved to have a negative impact on the likelihood of starting a business, while having no significant impact on the chances of entrepreneurial success. This finding is useful for those planning or pursuing

an entrepreneurial career but is also relevant for the purposes of entrepreneurship education. The study suggests that extensive educational and professional experiences not only contribute to entrepreneurial intention but is itself a factor in entrepreneurial success.

Drawing on social learning theory and the experience curve, Y. B. Liu et al. (2021) put forward that entrepreneurs' prior experiences have a curvilinear relationship with their entrepreneurial self-efficacy, with the upward slope of the curve gradually decreasing. The results indicate a nonlinear association between entrepreneurial experiences and entrepreneurial self-efficacy, suggesting a decreasing rate of entrepreneurial self-efficacy as entrepreneurs gain more experiences.

S. Lu et al. (2022) examined the relationship between founders' entrepreneurial experiences and new venture performance in an emerging economy in China. Based on a sample of entrepreneurial firms in south China, the study demonstrates a nonlinear relationship between entrepreneurial experiences and performance of Chinese entrepreneurial firms. The study reveals that high levels of experience had a negative impact on performance and that there was an inverted U-shaped relationship between founders' entrepreneurial experiences and new venture performance. The study also indicates that environmental uncertainty moderated the inverted U-shaped relationship.

Marvel et al. (2022) tested the importance of entrepreneurial experiences to entrepreneurial learning by testing a model linking entrepreneurial experiences to pre-lunch learning, which in turn was associated with post-launch pivots and entrepreneurial performance. Based on a sample of technology entrepreneurs, the study revealed an association between entrepreneurial experiences and pre-launch learning in both customer and technology domains.

Amankwah-Amoah et al. (2022) conducted two studies on serial entrepreneurs in a developing economy drawing on existing literature on entrepreneurial failure and firm collaboration. Study 1 adopted qualitative semi-structured interviews to draw insights from 16 entrepreneurs with failed experience in business venture. The findings suggest that business failure experience motivates some serial entrepreneurs to collaborate with other entrepreneurs. Study 2 empirically tested the effect of business failure experience and entrepreneurial collaboration by administering a questionnaire to 421 serial entrepreneurs, and the results indicated a positive relationship between business failure experience and collaboration with others.

H. T. Peng et al. (2020) identified a significant relationship between entrepreneurial experiences and entrepreneurial performance based on a survey among 45 respondents (N = 18,752). They also drew from theories to examine moderators of this relationship, including

firm age, experience type and industry condition to test whether the moderating effects can explain inconsistency in research results on the relationship between the two variables. The relationship was stronger for the high-tech industry, the early business stage, and start-up experience compared to low-tech industry, late business stage and management experience, work experience and industry experience.

2.2.3 Entrepreneurial experiences and entrepreneurial attitudes

Existing studies on the relationship between entrepreneurial experiences and entrepreneurial attitudes are limited. D. He (2006) examined the impact of entrepreneurial competition experience on entrepreneurial intentions and found that college students' experience of participating in entrepreneurial teams significantly and positively influenced their entrepreneurial attitudes. Harris and Gibson (2008) conducted an entrepreneurial attitudes orientation (EAO) survey among 216 US business students. The results indicated an association between entrepreneurial experiences and certain entrepreneurial attitudes. Y. Jiang (2008) noted that college students' entrepreneurship education, internship experiences and management knowledge positively influenced their entrepreneurial attitudes and thus their entrepreneurial intentions.

Politis and Gabrielsson (2009) found in their study on entrepreneurs' attitudes towards failure that previous entrepreneurial experiences are strongly associated with a more positive attitude towards failure. Empirical evidence from Poland also suggests that students with positive entrepreneurial experiences exhibited enhanced entrepreneurial attitudes (P. Jones et al., 2011).

Dai (2012) proposes that part-time jobs and internships are effective ways for college students to gain social experiences and have an impact on their attitudes towards entrepreneurship. Ajiwibawani and Subroto (2017) selected 249 students based on purposive sampling technique for quantitative analysis and identified the influence of entrepreneurial experiences on entrepreneurial attitudes. X. Y. Liu et al. (2019) analyzed the effects of college students' entrepreneurship education and self-efficacy on their entrepreneurial intentions based on a sample of 327 college students in China. Their findings show that an individual's entrepreneurial experiences are closely associated with his/her attitude toward entrepreneurship.

Based on the integration of TPB and entrepreneurial event theory, C. Y. Liang and Chen (2021) tested the mediating role of entrepreneurial self-efficacy on the entrepreneurial intentions of Taiwanese farmers and distinguished differences between those with and without

entrepreneurial experiences. The results showed that the effect of entrepreneurial attitudes on entrepreneurial intentions among those with prior entrepreneurial experiences were stronger than among those without such experiences.

Based on the above research, this thesis puts forward the following hypothesis:

H1: College students' entrepreneurial experiences are positively related to their entrepreneurial attitudes.

2.2.4 Entrepreneurial experiences and entrepreneurial intentions

Existing research suggests that entrepreneurial experiences positively influence entrepreneurial intentions. Y. H. Liu (2013) studied the impact of college experiences on entrepreneurial intentions and found that learning entrepreneurship courses and participation in entrepreneurship plan competitions and entrepreneurial activities positively influence entrepreneurial intentions. In a similar study, Le et al. (2012) found that participation in entrepreneurship simulation training and entrepreneurship competition experiences both had a significant effect on entrepreneurial intentions among college students. Miralles et al. (2016) studied the impact of prior experiences on entrepreneurial intentions by way of introducing the term "entrepreneurial knowledge". Based on SEM analysis, the researchers identified a positive relationship between entrepreneurial knowledge and entrepreneurial intentions, and such relationship is mediated by the three dimensions of TPB.

Hudea et al. (2021) studied how exposure to business activities through direct and family experiences positively influenced students' entrepreneurial intentions. The study was conducted with senior students specializing in business administration and marketing as a sample. Based on a mainly noncausal and symmetric analysis, the study identified an association between students' business experiences and their entrepreneurial intentions. Chukhray et al. (2021) conducted a questionnaire survey among 746 students and found that students' pre-university employment experiences increase their confidence in their entrepreneurial abilities and positively influence their entrepreneurial intentions.

Based on the above literature, this thesis puts forward the following hypothesis:

H2: College students' entrepreneurial experiences are positively related to their entrepreneurial intentions.

2.3 Entrepreneurial environment

This section introduces the existing studies on entrepreneurial environment, followed by the dimensions of entrepreneurial environment, and the relationship between entrepreneurial environment and entrepreneurial intentions. On that basis, a hypothesis on the relationship between entrepreneurial environment and the entrepreneurial intentions of Chinese college students is put forward.

2.3.1 Existing studies on entrepreneurial environment

"Entrepreneurial environment" refers to "a combination of factors that play a role in the development of entrepreneurship" (Fogel, 2001). J. Katz and Gartner (1988) as well as Gnyawali and Fogel (1994) analyzed the components of entrepreneurial environment and developed a corresponding research framework. Typical factors of entrepreneurial environment include rules and regulations, tax and other incentives, counseling and training services (Dana, 1987, 1990), availability of financial resources and a proper location (Pennings, 1982).

Researchers such as Dubini (1989), Learned (1992), Herron and Sapienza (1992), as well as Naffziger et al. (1994) constructed a model including the interaction of environmental factors and personality traits to explain their entrepreneurial environment in terms of the environment in which the individuals were placed. Herron and Sapienza (1992) suggest that the entrepreneurial environment that influences individual behavior includes the following aspects: financial resources, family and support systems, customers, employees, suppliers, government institutions and culture, local communities, political and economic environment. There seems to be a consensus among scholars that the more conducive the entrepreneurial environment, the more encouraged individuals are to start a business (Fogel, 2001).

Government policies can directly or indirectly influence the development of entrepreneurial environment (Gnyawali & Fogel, 1994). Kautto (2019) examines the potential for public policies to stimulate individuals' entrepreneurial perceptions through the use of micro-social influences generated by migrant entrepreneurs. The study argues that psychosocial influences generated by exogenous policy interventions can act as a mechanism for the transfer of individual entrepreneurial perceptions.

2.3.2 Dimensions of entrepreneurial environment

Entrepreneurial environment is a concept with rich connotations. Different scholars have different ways to conceptualize this construct.

G. Chen (2015) adopted a two-dimensional perspective and distinguished entrepreneurial environment in a broad sense from that in a narrow sense. The former refers to the support from society, school, and parents, while the latter concerns the entrepreneurial premises, equipment, and tools. Entrepreneurial environment can also be divided into hard and soft, with the former referring to infrastructure development and the latter concerning a harmonious social and cultural environment.

O. M. Li and Wu (2017) divided the entrepreneurial environment into policy, educational, financing and cultural dimensions. The policy dimension refers to the government's policies and regulations as well as supporting services regarding college students' entrepreneurship; the education dimension concerns the entrepreneurship courses offered and competitions or activities organized by colleges and universities; the financing dimension refers to bank loans to and financial institutions' investment in college students' entrepreneurial activities; and the cultural dimension refers to the encouragement or denial of college students' entrepreneurship by their friends and relatives. Based on these four dimensions, a scale consisting of 12 items was designed (O. M. Li & Wu, 2017).

Gnyawali and Fogel (1994) developed a framework of entrepreneurial environments consisting of five core elements, namely opportunity (macroeconomic policies and procedures), propensity to enterprise (socioeconomic factors), ability to enterprise, likelihood to enterprise (level of business and entrepreneurial skills) and new venture creation. Su (2009), based on China's reality and drawing on existing research, classifies college students' entrepreneurial environment into five dimensions: financing, economic, policy, education and training, as well as social and cultural environment.

By comparing the entrepreneurial environment in the U.S. and Japan, Chi (2002) proposed that it should include the following six subsystems: network, risk management, incubation, entrepreneur training, business training and success reward system.

2.3.3 Entrepreneurial environment and entrepreneurial intentions

Existing empirical research suggests that the entrepreneurial environment of college students has a significant impact on their entrepreneurial intentions (D. He, 2006; Y. Jiang, 2008; Q. Y.

Yang, 2009). An empirical study based on a survey among 271 nascent entrepreneurs who were college students of entrepreneurship classes and participants of a business plan competition as well as a case study of six newly established technology-based enterprises revealed the influence of environmental factors on entrepreneurial intentions (Grundstén, 2004). Niu (2009) pointed out that a sound entrepreneurial policy system can significantly improve individuals' ability to recognize opportunities and their entrepreneurial intentions. Y. Chen (2012) used perceived feasibility and entrepreneurial agreeableness as mediators and identified three dimensions of entrepreneurship policy: policy impact, access and perception, to analyze how entrepreneurship policy, perceived feasibility, entrepreneurial agreeableness influence entrepreneurial intentions.

Many existing studies on the entrepreneurial environment have focused on the impact of social support on entrepreneurial intentions. In her study of college students' willingness to start a business, Liao (2010) used family, relatives and friends as some of the factors to measure the influence of the external environment, and examined the extent to which family, relatives and friends might help one to start a business in terms of money as well as interpersonal networks. Abebe (2012) explored how social support, social status and institutional support are related to entrepreneurial intention. In his exploration of entrepreneurial intentions, J. Y. Yang (2013) noted that Chinese culture places a strong emphasis on collectivism and those who are considered to be more important to an individual will largely influence such intentions. Therefore, people who are important to Chinese students (e.g., their teachers and parents) and who support them in starting their own business can greatly increase their motivation.

S. M. Tian (2013) observed the external environment of university students' entrepreneurship in terms of school policies, support or influence from family and friends, and others, and entrepreneurship policies. Omidi Najafabadi et al. (2016) argue that entrepreneurial skills (e.g. market skills, opportunity recognition, entrepreneurial knowledge), government policy support, educational support, social support and infrastructural support) and social norms are strongly linked to the development of entrepreneurial intentions.

Examining the external environment for college students' entrepreneurship in terms of parental, university and government support, G. F. Li et al. (2017) used SEM to study the factors influencing college students' entrepreneurial intentions and suggested that an entrepreneurial environment, whether from family, school or society, would help promote individual college students' entrepreneurial behavior. In their study on the role of perceived university support on the formation of entrepreneurial intentions, Saeed et al. (2018) suggested that universities can

support entrepreneurship in many ways, but it is important to measure students' perceptions of the support they receive in order to understand the respective extent and its impact on students.

Existing research on entrepreneurial environment have also explored the impact of government policies on entrepreneurial intentions. For example, Ji (2010) pointed out that the better the government policies, the stronger the entrepreneurial intentions of university students. L. M. Duan and Du (2012) studied the impact of government policies on college students' entrepreneurial intentions, and the results suggested a significant relationship between the two. Le et al. (2012) studied the impact of a combination of factors on entrepreneurial intentions. Such factors include students' background such as gender, having been a student leader and place of origin, their participation in entrepreneurship courses, lectures for entrepreneurs, simulation training and entrepreneurship competitions, as well as entrepreneurial environment and policy understanding.

In his empirical study on the factors influencing entrepreneurial intentions, F. Wei (2018) pointed out that social policies would affect college students' entrepreneurial intentions. Z. Li and Islam (2021) explored how entrepreneurship education and government policies affect the entrepreneurial intentions of students receiving higher vocational education where government policies are part of the entrepreneurial environment. The results showed that perceived entrepreneurship policy has a positive and direct impact on entrepreneurial self-efficacy and entrepreneurial intentions, respectively. The study recommends that the government should publish the policies that are of most concern to college students; proactively inform students of the content of policies in a clear and concise manner; and give due consideration to the side effects of government policies and the compatibility between different types of policies.

Based on the above literature, this thesis puts forward the following hypothesis:

H3: College students' entrepreneurial environment is positively related to their entrepreneurial intentions.

2.4 Entrepreneurship education

This section introduces the definition and dimensions of entrepreneurship education, followed by the relationship between entrepreneurship education and entrepreneurial intentions. On that basis, a hypothesis on the relationship between entrepreneurship education and the entrepreneurial intentions of Chinese college students is put forward.

2.4.1 Definition of entrepreneurship education

Entrepreneurship education, which refers to an educational and learning activity that enhances students' entrepreneurial knowledge, skills, attitudes, and personal qualities (Fayolle et al., 2006), first originated in the West. In 1967, Harvard University offered a course called "New Venture Creation", which attracted 188 Master of Business Administration (MBA) students with its unique entrepreneurship education concept and curriculum. This course has a landmark status in the history of entrepreneurship education and is considered to be the earliest entrepreneurship education behavior (J. A. Katz, 2003).

Over the past decades of development, various interpretations of the definition of entrepreneurship education have emerged both in China and internationally. Plaschka and Welsch (1990) argued that individual creativity is an important force for economic and social development and made the cultivation of individual creativity a core component of entrepreneurship education. Fayolle et al. (2006) defined entrepreneurship education as "any pedagogical programme or process of education for entrepreneurial attitudes and skills" (p. 702). On this basis, Fayolle and Klandt (2006) further tapped in and summarized the connotation of entrepreneurship education, defining it as an activity that focuses on developing the ability of thinking of entrepreneurial individuals and translating them into the execution skills required for entrepreneurship, including creativity, innovation ability, exploration spirit, and management skills.

Hussain and Norashidah (2015) consider entrepreneurship education a learning activity that aims to learn about entrepreneurship to enhance one's entrepreneurial skills, personal entrepreneurial abilities, entrepreneurial attitudes, and personal character. De Toni and de Rezende Alvares (2016) deem entrepreneurship education as a competitive and challenging means aimed at providing relevant skills to achieve creative innovation in order to maintain a highly qualified workforce. Nabi et al. (2018) regard entrepreneurship education a learning activity in which students learn entrepreneurial knowledge, information and experience to help them succeed in the future. C. Jones (2018) describes entrepreneurship education as a series of courses offered in colleges, high schools, middle schools, or elementary schools to develop students' entrepreneurial skills.

Despite the increasing scope and methodology in entrepreneurship education research, Naia et al. (2014b) revealed the inconsistency in the body of knowledge with insights and practicality based on a review of entrepreneurship education literature published over the first ten years

since 2000. In the same year, Naia et al. (2014a) published another article to highlight the lack of studies with theoretical contributions reflected in both the proposal of new theoretical propositions and the empirical tests of such propositions. The authors pointed out that most of the existing studies on entrepreneurship education are focused on building or testing theories, and there is a lack of experimentation. In response to the reality, they suggested the application of taxonomy for more effective evaluation of theoretical contributions of entrepreneurship education research.

Research on entrepreneurship education took a late start in China compared with foreign countries, however, some research results have been achieved. G. Peng (1995) argued that entrepreneurship education is an educational system that develops and improves the basic qualities of youth entrepreneurship and cultivates socialist builders and successors with pioneering personalities. T. Zhang (2007) deemed entrepreneurship education as a system that cultivates entrepreneurial awareness, entrepreneurial thinking, and entrepreneurial skills, so that the educated can have certain entrepreneurial abilities. Ai et al. (2014) considered entrepreneurship education a practical activity aimed at cultivating entrepreneurial awareness and enhancing entrepreneurial abilities of college students. L. Hu and Yang (2020) deemed entrepreneurship education a type of practical education aimed at cultivating students' entrepreneurial consciousness, entrepreneurial abilities and innovative thinking and improving their comprehensive quality.

Although the definitions proposed by different scholars vary, they share two aspects in common. First, entrepreneurship education is carried out via certain means, such as offering courses, training, and practice; second, the purpose of entrepreneurship education is unanimously to enhance students' entrepreneurial awareness, strengthen their entrepreneurial abilities, and equip them with entrepreneurial knowledge. Based on the overall review of the existing literature and combined with the research population of this thesis, this study defines entrepreneurship education as *a mode of education that helps college students enhance their entrepreneurial awareness, strengthen their innovation abilities, and master their innovation knowledge through education, training and practice for the purpose of facilitating their success in the future* (L. Hu & Yang, 2020; Hussain & Norashidah, 2015).

2.4.2 Dimensions of entrepreneurship education

As the research on entrepreneurship education gets more in-depth, the topic has received more and more attention, and more and more scholars have studied it in different fields. Its dimensions also differ in the studies conducted by different researchers.

In an early study, Johannisson (1991) conceptualized entrepreneurship education into five dimensions, namely, the reasons for entrepreneurship (know-why), the means to implement entrepreneurship (know-how), the knowledge required for entrepreneurship (know-what), the personal network needed for entrepreneurship (know-who), and the timing for entrepreneurship (know-when). Fayolle and Gailly (2008) considered entrepreneurship education to be composed of five dimensions: awareness raising, opportunity identification, business development, self-employment, and entrepreneurial creation and growth.

Most scholars take a three-dimensional perspective and believe that entrepreneurship education consists of only three dimensions. For example, Lüthje and Franke (2003) considered entrepreneurship initiation, entrepreneurship development, and entrepreneurship support to be the three dimensions of entrepreneurship education; Harrison and Mason (2007) identified entrepreneurship education content, entrepreneurship education approach, and entrepreneurship education system; Solomon (2007) divides entrepreneurship education into: the quality of teaching in the entrepreneurship classroom, the evaluation of entrepreneurial tutors and the students' corporate field trips; Ndou et al. (2019) conceptualize the three dimensions into entrepreneurial awareness, entrepreneurial mindset, and entrepreneurial abilities.

Chinese scholars have also divided the dimensions of entrepreneurship education in their respective research fields. For example, Z. Z. Gao et al. (2015) identified four dimensions: educational philosophy, policies and regulations, academic research, and practical events. L. W. Tan et al. (2015) recognized the five dimensions to be entrepreneurship curriculum, entrepreneurship training, entrepreneurship exercises, entrepreneurship lectures, and entrepreneurship competitions.

S. C. Xu (2017) examined the dimensions of entrepreneurship education from the perspective of the nature of education and believed it to be composed of four dimensions: entrepreneurial trait education, entrepreneurial process education, entrepreneurial cognitive education, and entrepreneurial approach education. Another four-dimensional division is initiated by X. H. Luo (2020), who believes that entrepreneurship education to be composed of

entrepreneurship education concept, entrepreneurship content and approach, entrepreneurship strategy, and entrepreneurship teaching from the perspective of entrepreneurship education system. Drawing on the existing research at home and abroad, X. G. Li (2020) measured entrepreneurship education from two aspects, individual factors (four items) and the education providers (three items).

2.4.3 Entrepreneurship education and entrepreneurial intentions

Except for a few studies that concluded that there is no direct relationship between entrepreneurship education and entrepreneurial intentions (J. Li et al., 2021), most studies support a positive relationship between the two (Birdthistle et al., 2007; Clark, 1998b; Pittaway & Cope, 2007).

Kusumojanto et al. (2020) studied the relationship between entrepreneurship education and entrepreneurial intentions in the Indonesian context based on a questionnaire survey. The results of their empirical study showed that entrepreneurship education successfully influenced entrepreneurial self-efficacy and students' attitudes toward entrepreneurship. Similarly, a recent study shows that effective entrepreneurship education has a positive impact on entrepreneurial intentions (J. Cui & Bell, 2022).

Z. Li and Islam (2021) conducted a study to explore how entrepreneurship education and government policies affect entrepreneurial intentions of students in higher vocational colleges. The results showed that entrepreneurship education perceptions have a positive and direct impact on entrepreneurial self-efficacy and entrepreneurial intentions. The two researchers recommended that higher vocational colleges create participatory projects and teaching methods to enable students to gain knowledge closely related to practice and perceive the value of entrepreneurship education. Soomro and Shah (2021) conducted an empirical study on entrepreneurship education, need for achievement, self-efficacy, and entrepreneurial intention among business students in Pakistan. The findings proved the significant positive effect of entrepreneurship education structure on need for achievement, entrepreneurial self-efficacy, and entrepreneurial intention.

Usman et al. (2022) found a causal relationship between entrepreneurship education and entrepreneurial intentions of college students in a study of developing economies. Their finding is consistent with several studies conducted in other developing economies and has further affirmed the critical role of entrepreneurship education in motivating students' entrepreneurial tendencies. Boubker et al. (2022) studied the impact of entrepreneurship education on the

intention to become an entrepreneur using a Mexican public university as a case. The results of the study showed that action-based entrepreneurship education has a positive and significant impact on the perception of entrepreneurial attitudes and entrepreneurial abilities. A study conducted in India on the relationship between entrepreneurship education and entrepreneurial intentions also demonstrated a positive relationship between the two (Anwar et al., 2022). A more in-depth study examining the effect of entrepreneurship education on entrepreneurial orientation, motivation, and intention among college students showed that entrepreneurship education significantly enhanced the three variables (Otache et al., 2022).

Similar findings have been found in Chinese studies. R. J. Zhu et al. (2022) analyzed the entrepreneurial intentions of 4,926 college students based in Hangzhou. The findings indicated that college students who received entrepreneurship education were more likely to persist, and that the local environmental had a significant positive effect on college students' sustainable entrepreneurial intentions. A similar study constructed a model of multiple mediation effects of entrepreneurship education on entrepreneurial intention based on TPB and empirically analyzed the questionnaire data collected from college students in eight provinces using SPSS and AMOS software. The results suggested that entrepreneurship education has a positive effect on entrepreneurial intention (X. E. Zhang et al., 2018). A similar result was obtained by an empirical study based on a survey of 1,870 college students from three universities in Tianjin City, China. Concurrently, studies by scholars such as Y. F. Li (2022), Q. Y. Yang (2009), Y. Chen (2012), and Chi (2002) have shown that entrepreneurship education positively affects entrepreneurial intentions.

Several studies have found that entrepreneurship education plays a mediating or moderating role. More recently, Sohu et al. (2022) examined the mediating effect of entrepreneurship education on entrepreneurial intentions of college students in major cities of Pakistan during the COVID-19 pandemic. The results indicated that entrepreneurship education fully mediated the effect between entrepreneurial self-efficacy, subjective norm, and entrepreneurial intentions among college students. Another empirical study from India showed that entrepreneurship education and opportunity identification not only directly affect entrepreneurial intentions but these are also indirectly affected through the mediating effect of self-efficacy (Anwar et al., 2022).

To sum up, after college students receive entrepreneurship education, their understanding of entrepreneurship changes; their knowledge and skills related to entrepreneurship change; and their management ability, financial ability, and market ability are improved. All this leads to the change of college students' entrepreneurial intention.

Based on the above research, this thesis puts forward the following hypothesis:

H4: College students' entrepreneurship education is positively related to their entrepreneurial intentions.

2.5 Entrepreneurial traits

This section first introduces the concept, characteristics, and dimensions of entrepreneurial traits, then elaborates on the relationship between entrepreneurial traits and entrepreneurial intentions, followed by the proposal of a hypothesis.

2.5.1 The concept of entrepreneurial traits

The concept of entrepreneurial traits comes from that of personality traits, which were first put forward by F. H. Allport and Allport (1921), who defined them as the different personality characteristics that individuals exhibit and gradually form the personality trait theory. The differences in personality traits among different entrepreneurs form entrepreneur traits. G. W. Allport (1961) argued that entrepreneurial traits are physiologically based stability characteristics exhibited by entrepreneurs in their entrepreneurial activities. McClelland (1961), based on the achievement motivation theory, contended that individual entrepreneurs should have characteristics such as independence, innovativeness, internal control, and risk-taking propensity.

Johnson (1990) found that entrepreneurs have a strong need for achievement and a desire to control. According to Robertson et al. (1991), entrepreneurial traits refer to the psychological traits of entrepreneurs, which are distinctive ways of doing things and behaving that are different from other individuals and are not easily changed. Shaver and Scott (1992) and Brandstätter (1997) distinguished entrepreneurs from non-entrepreneurs in terms of personality traits. Stewart (1996) argued that small business owners, firm managers, and entrepreneurs differ significantly in their propensity to achieve, innovate, and take risks. Koenig et al. (2013) suggest that entrepreneurial traits are the distinctive abilities that entrepreneurs possess that can enhance the business performance of the firm.

Based on the above research, this thesis defines entrepreneurial traits as *a unique, persistent, and stable behavior or way of doing things that entrepreneurs possess* (G. W. Allport, 1961; Robertson et al., 1991).

2.5.2 Existing studies on entrepreneurial traits

Because entrepreneurial traits have an important influence on entrepreneurial behavior, research on entrepreneurial traits can be traced back to the 1940s. Existing research has also focused on which entrepreneurial traits are key for entrepreneurial success, Yet there is no consensus among researchers.

McClelland (1961) argued that entrepreneurs should be risk-takers and have a need to achieve; Iyigun and Owen (1998) also point out that risk tolerance is an essential quality for entrepreneurs. Low and MacMillan (1988) summarized some of their main psychological characteristics such as internal locus of control, risk-taking tendencies, desire for achievement, and style of handling things, and recognizing and seizing opportunities.

According to Timmons (2004), entrepreneurs should have at least a sense of responsibility, a determination to succeed, and a motivation to win. P. Guo (2011) considered a need for achievement and the ability to take risks as essential for entrepreneurs. B. F. Tian et al. (2011) searched the domestic and international literature on traits over a 30-year period from 1980 to 2010 and identified 51 personality traits related to entrepreneurs, including achievement motivation, ambiguity tolerance, calmness, innovation orientation, stress resistance, independence, and risk-taking. Their study also revealed that entrepreneurial traits can have an impact on the identification and grasp of opportunities. In addition, other scholars have used education level and experiences as personality traits of entrepreneurs (X. L. Wu & Yu, 2016).

Scholars' descriptions of entrepreneurial characteristics show that entrepreneurial traits are rich in connotation and vary from person to person. Nevertheless, scholars generally regard the need for achievement, sense of responsibility, and risk-taking as the basic characteristics of entrepreneurs, which are the common traits of successful entrepreneurs and the most important traits that distinguish entrepreneurs from other individuals.

2.5.3 Dimensions of entrepreneurial traits

Entrepreneurial traits are key elements for entrepreneurs to identify entrepreneurial opportunities and to successfully carry out activities. To accurately measure the dimensions of entrepreneurial traits, scholars have also conducted numerous studies and reported a series of research successes.

In line with others, Entrialgo et al. (2000) argue that entrepreneurial traits are composed of internal locus of control, need for achievement, and ambiguity tolerance. Z. H. Liu (2007) and

Hou (2014) contend that need for achievement, internal locus of control and risk-taking propensity are core dimensions of entrepreneurial traits. Zheng and Li (2017) consider forward-looking personality, risk-taking propensity and need for achievement to be the main entrepreneurial traits. M. L. Chen et al. (2022) perceive innovation, risk-taking propensity, and achievement motivation to be key entrepreneurial traits.

S. U. Ahmed (1985) identified four dimensions of entrepreneurial traits: risk-taking propensity, need for achievement, internal locus of control, and ambiguity tolerance. Other scholars who adopted the four-dimensional perspective include Korunka et al. (2003) and J. Zhao (2015). The former identified the four dimensions of personal initiative, need for achievement, risk-taking propensity, and internal locus of control; and the latter conceptualized the concept to be consisting of need for achievement, internal locus of control, risk-taking propensity, and innovation.

Ye (2009) is among the few researchers to consider entrepreneurial traits a five-dimensional construct consisting of risk-taking propensity, persistence and achievement motivation, internal locus of control, innovation, and problem-solving ability.

Despite the different dimensions stated above, scholars generally agree that innovativeness, risk-taking propensity, internal locus of control, and achievement motivation are important dimensions of entrepreneurial traits. Specifically, scholars have approached entrepreneurial traits mainly from a three-dimensional, four-dimensional, and five-dimensional perspective.

2.5.4 Entrepreneurial traits and entrepreneurial intentions

Most studies suggest a positive relationship between entrepreneurial traits and intentions. For example, Javan (2014) studied the effect of personality traits on entrepreneurial intentions. The results showed that all personality traits, namely agreeableness, conscientiousness, openness to experience, and neuroticism had an effect on entrepreneurial intentions. M. A. Ahmed et al. (2022) examined the effect of Big Five personality traits on entrepreneurial intentions mediated by risk aversion. The results revealed that the personality trait “conscientiousness” had a significant positive effect on entrepreneurial intention, while the direct effects of traits, extraversion, openness to experience, neuroticism, and agreeableness on entrepreneurial intention were insignificant. The studies conducted by such scholars as Iyigun and Owen (1998), Qian (2007), P. Guo (2011), and Y. F. Luo et al. (2022) indicated that personality traits such as need for achievement, risk-taking propensity, risk preference, and the Big Five personality traits are significantly related to entrepreneurial intentions.

Some studies also argue that entrepreneurial traits play a mediating role. For example, Obschonka et al. (2017) used personality traits to predict entrepreneurial alertness and entrepreneurial intentions with entrepreneurial competency as a mediator.

There are certain differences in personality traits among people. Those who like and are willing to take risks, are confident and independent, proactive, innovative, energetic, good at turning problems into opportunities, and willing to face and overcome difficulties are more likely to grasp entrepreneurial opportunities and have stronger entrepreneurial intention.

Based on the above research, this thesis puts forward the following hypothesis:

H5: College students' entrepreneurial traits are positively related to their entrepreneurial intentions.

2.6 Entrepreneurial attitudes

This section describes attitude as a dimension of TPB according to existing studies on entrepreneurial attitudes, and the relationship between entrepreneurial attitudes and entrepreneurial intentions. On this basis, a hypothesis on this relationship is put forward.

2.6.1 Attitude as a dimension of TPB

TPB (Ajzen, 1985) was developed based on the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1977) with the addition of the variable of perceived behavioral control (PBC). So, TPB consists of three dimensions: attitude, subjective norm, and PBC. Ajzen (1991) defines attitude as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question"; subjective norm refers to the "perceived social pressure to perform or not to perform the behavior"; and PBC is "the perceived ease or difficulty of performing the behavior" (p. 188). Intention denotes how much effort an individual plans to make to perform a given behavior, and "performance of a behavior is a joint function of intentions and PBC" (p. 185).

2.6.2 Attitude and intention

Ajzen and Fishbein (1969) first tested the factors influencing behavioral choice based on decision theory and the theoretical model proposed by Fishbein (1967). The results showed that, in addition to attitude, individuals' normative beliefs about behavior also affect their intentions. Furthermore, behavioral intentions toward certain behaviors are highly associated with such

behaviors themselves. These two findings were later validated in another study conducted by Ajzen and Fishbein (1970), which found that attitudes and normative beliefs mediated the relationship between behavioral intentions and actual behavior. In 1985, Ajzen (1985) first put forward TPB, arguing that a person's performance of a given behavior depends on his/her intention to try to perform the behavior, and this intention is measured by the attitude to try and the subjective norm of the attempt.

A year later, Ajzen and Timko (1986) conducted another study with college students as sample to explore the relationship between health attitudes and behaviors. The results affirmed attitude and PBC as two determinants of behavior, where PBC referred to the perceived difficulty of performing a particular behavior. Ajzen (1991) formalized the original TPB model in 1991 (see Figure 2.1), which showed that the three conceptualizations of attitude, subjective norm, and PBC are closely related to behavioral intention, and this behavioral intention, together with PBC, has an impact on the performance of an actual behavior (Ajzen, 1991). One year after the original TPB model was proposed, Ajzen and Driver (1992) applied it to a time-lagged study of college students' leisure choices, and the results were consistent with the TPB propositions. Specifically, leisure intentions were predicted by attitude, subjective norms, and PBC, whereas leisure behaviors were predicted by intention and PBC.

Since the introduction of the TPB model, the association between attitude and intention has been researched and evidenced in different fields particularly regarding consumption of products such as smartphone advertising (E. B. Lee et al., 2017), green products (Al-Swidi & Saleh, 2021; Indriani et al., 2019; Suki, 2016), and luxury products (Salehzadeh & Pool, 2017). The tourism industry is also a frequently researched area (Bianchi, 2021; L. H. Wang et al., 2022; Yuzhanin & Fisher, 2016).

2.6.3 Entrepreneurial attitudes and entrepreneurial intentions

Attitude is an individual's favorable or unfavorable response to a goal, person, institution or event and is considered the first determinant of behavioral intentions (Ajzen, 1991). Entrepreneurial attitudes are defined as individuals' perceptions of the value, benefits, and favorability of entrepreneurship and greatly influence their intention to create a new venture (P. Y. Zhang et al., 2015).

Entrepreneurial attitudes include endogenous and exogenous, namely those toward dependence, challenge, achievement, power, wealth, and social recognition (Phan et al., 2002), where endogenous attitudes mainly refer to some perceptions or needs that focus on the

individual's development from intrinsic motives while exogenous attitudes place more emphasis on extrinsic motives. Individuals' attitudes towards things may influence their motivation to participate, and extrinsic factors generally influence individual intentions and behaviors indirectly through changes in individual attitudes (Ajzen, 1991). Students' entrepreneurial attitudes can also be influenced by extrinsic factors (Krueger Jr et al., 2000).

When a person has a strong entrepreneurial attitude, he or she has a more optimistic and positive view of entrepreneurship and is more likely to take advantage of opportunities and naturally has a stronger intention to start a business. Except a few studies that do not support a direct relationship between entrepreneurial attitudes and intentions (Kusumojanto et al., 2020), the majority of studies do suggest this positive association.

Yousaf et al. (2021) proposed a sequential mediation model to examine the effects of entrepreneurial self-efficacy and entrepreneurial attitudes on entrepreneurial intentions. The results showed that self-efficacy and attitudes positively affect entrepreneurial intentions. Anjum, Farrukh, et al. (2020) examined the effect of perceived creative disposition on these two constructs. The study built a model of the relationship between perceived creative tendencies and entrepreneurial intentions and attitudes based on TPB and developed an analysis of the mechanisms that moderate perceived university support on perceived creative tendencies and entrepreneurial intentions. The results showed that perceived creative disposition and entrepreneurial attitude had a positive effect on entrepreneurial intention.

In fact, many studies have proven that entrepreneurial attitudes are the most important predictor or determinant of entrepreneurial intentions among college students. For example, Naia et al. (2017) tested the application of TPB in sport disciplines by administering an entrepreneurial intention questionnaire to 379 sport science students and found that both perceived attitudes and PBC had significant effects on entrepreneurial intentions. Fragoso et al. (2020) assessed how personality traits, training and entrepreneurship education, social recognition, self-efficacy and entrepreneurial attitudes affect entrepreneurial intentions among college students in Portugal and Brazil. The study indicates that personality traits, entrepreneurial attitudes, and self-efficacy are strong predictors of entrepreneurial intentions, while the effects of social recognition and country of origin are not significant.

Using a sample of 252 nursing students from four nursing colleges in urban Korea, Paul et al. (2016) explored the predictors of entrepreneurial intentions among nursing college students and with entrepreneurial-personal attitudes, entrepreneurial-subjective norms, and entrepreneurial PBC in TPB as exogenous variables, and entrepreneurship education needs, entrepreneurial self-efficacy, and entrepreneurial intentions as endogenous variables. The

results suggested that entrepreneurial PBC, educational needs, self-efficacy, and personal attitudes directly influence entrepreneurial intentions, while the effects of entrepreneurial subjective norms are indirect. In addition, studies by C. Y. Liang and Chen (2021), Ferreira et al. (2022), Ip and Liang (2021), Wibowo et al. (2021), G. S. Lu et al. (2021), and Yousaf et al. (2021) all have shown a strong positive relationship between entrepreneurial attitudes and entrepreneurial intentions.

Studies conducted in China have also shown that entrepreneurial attitudes have a positive relationship with entrepreneurial intentions. For example, C. Jin and Sun (2020) conducted principal component analysis (PCA) and ordered logit model on the data collected from a sample of 954 college students on entrepreneurial intentions. They explored college students' entrepreneurial intentions and their influencing factors in terms of three variables: subjective norms, PBC, and entrepreneurial attitudes, all of which turned out to have significant effects on college students' entrepreneurial intentions. In addition to unveiling the influence of entrepreneurial experiences on entrepreneurial attitudes, C. Y. Liang and Chen (2021) also uncovered the strong effect of the first on the latter among Taiwanese farmers. Y. F. Zhao and Zheng (2021) empirically investigated the factors influencing college students' entrepreneurial intentions based on TPB, which showed that entrepreneurial attitude and PBC have positive effects on entrepreneurial intentions, while subjective norms have no positive effects on entrepreneurial intentions.

Some studies have found that entrepreneurial attitudes can also play a mediating role. Bazkiaei et al. (2020) examined the relationship between entrepreneurship education and Big Five personality traits and entrepreneurial intentions. The results revealed that entrepreneurial attitudes mediated the relationship of Big Five personality traits and entrepreneurship education with entrepreneurial intention. Liguori et al. (2020) proposed an empirical test model of entrepreneurial intentions based on Social Cognitive Career Theory (SCCT). Their study was conducted among 320 undergraduate business students at a university in the U.S. and emphasized the important influence of pre-entrepreneurial exposure and social support mechanisms on the formation of entrepreneurial intentions and expectations of entrepreneurial outcomes. The results validated the important role of entrepreneurial attitudes in mediating the relationship between entrepreneurial motivation and entrepreneurial intention. G. S. Lu et al. (2021) examined the impact of students' perceived support from the university on their entrepreneurial intention using a sample of 13,954 college graduates from Chinese higher education institutions. The findings suggested that entrepreneurial attitudes, subjective norms,

and entrepreneurial self-efficacy mediate the relationship between university entrepreneurial support and entrepreneurial intentions.

Based on the above literature, this thesis puts forward the following hypothesis:

H6: College students' entrepreneurial attitudes are positively related to their entrepreneurial intentions.

Taking also into account H1, H2 and H6, this thesis further puts forward the following hypothesis:

H7: College students' entrepreneurial attitudes mediate the relationship between their entrepreneurial experiences and entrepreneurial intentions.

Entrepreneurial attitudes are tested here as a mediating variable in the case of the relationship between experiences and intention since attitudes are mental positions regarding facts or states, which are better represented in experiences rather than in any other of the constructs considered. In addition, entrepreneurial environment is not much of a concern as, in the literature search, only one study (Yao et al., 2016) points out that attitudes may mediate the relationship between environment and intention. While some studies do suggest that attitudes may mediate the relationship between education/traits and intention (Anwar et al., 2021; Bazkiaei et al., 2020; Y. F. Chen & Lai, 2010; Jagannathan et al., 2017; Mahendra et al., 2017), we focused on experiences because universities can play an almost decisive role in providing entrepreneurial experiences (incubators for example), which have the most direct effect on attitudes.

2.7 Entrepreneurial intention

This section introduces the definition, dimensions, and theoretical models of entrepreneurial intention. It aims at shedding light on the knowledge related to college students by providing a review of relevant literature, particularly on the entrepreneurial intentions of college students.

2.7.1 Definition of entrepreneurial intention

The study on intention started early in the field of psychology. Bandura (1977) considered intention not only an expectation, but more importantly, a commitment to future behavior. Intention is a specific belief about a certain future behavior that necessarily motivates individuals to engage in specific actions in order to achieve their goals. Since scholars have included intention in the field of entrepreneurship, it has provided a new perspective for research.

Early studies on entrepreneurial intentions focused on the definition of the concept. Bird (1988) was the first to suggest that entrepreneurial intention has a strong predictive effect on individual entrepreneurial behavior and is a psychological state that leads entrepreneurs to devote considerable time, energy, and action in pursuit of a particular goal, and that both individual and social factors must influence entrepreneurial action by forming intention. J. Katz and Gartner (1988) argue that the driving effect of intention on individuals is a spontaneous state and that changes in the acquired environment and the accumulation of knowledge have an impact on intention. Bagozzi et al. (1989) consider entrepreneurial intention to be a prerequisite for entrepreneurial behavior, a mediator between individual factors and social factors influencing entrepreneurial behavior, and a subjective attitude of individuals toward whether to engage in entrepreneurial activities. Since the beginning of this century, scholars have continued to explore the antecedents, determinants or predictors of college students' entrepreneurial intentions and entrepreneurial behavior.

Krueger Jr et al. (2000) regard entrepreneurial intentions the subjective attitudes of potential entrepreneurs towards whether to engage in entrepreneurial activity, a general description of people's attitudes and abilities towards entrepreneurship, and the best predictor of entrepreneurial behavior. Thompson (2009) views entrepreneurial intention as the belief that an individual plans to start a new business and will consciously execute some of the plan at some point in the future.

Chinese scholars have also studied entrepreneurial intention based on the studies of Western colleagues and their own research context and have developed a variety of different definitions. The first view is that entrepreneurial intention refers to an attitude of potential entrepreneurs toward whether to engage in a certain entrepreneurial activity (W. Chen, 2010; M. L. Ding, 2008; W. Fan & Wang, 2004; J. H. Wang, 2011; Z. N. Wu & Wang, 2009) . The second view is that entrepreneurial intention refers to the possibility of potential entrepreneurs to choose entrepreneurial behavior (D. He, 2006). The third view is that entrepreneurial intention, as a mediator between individual and social factors influencing entrepreneurial behavior, determines individual entrepreneurial behavior, and its strength can define whether an individual will start a business or not (Gong & Xie, 2009). The fourth view is that entrepreneurial intention is the degree of tendency toward entrepreneurship, and when conditions are the same, the higher the degree, the stronger the intention to choose entrepreneurship (H. Y. Jiang & Yu, 2012; Q. H. Jin, 2010).

Despite the different descriptions of entrepreneurial intention by different scholars, they are convergent in essence. First, scholars generally believe that entrepreneurial intention is an

attitudinal tendency of entrepreneurs to plan to start a business; second, researchers all believe that entrepreneurial intention can predict entrepreneurial behavior. Specifically, the stronger the entrepreneurial intention, the stronger the tendency to start a business. Nevertheless, having entrepreneurial intention does not mean that entrepreneurial behavior will be implemented; third, the driving effect of entrepreneurial intention is spontaneous and conscious.

In summary, this thesis defines entrepreneurial intention as *a subjective attitude, the degree of expectation that self-employment is chosen as a future career goal by college students, and the intention to create a new business and manage the new business to achieve self-employment* (Bandura, 1977; W. Fan & Wang, 2004).

2.7.2 Dimensions of entrepreneurial intention

Researchers have put forward a variety of different perspectives on the dimensions of entrepreneurial intention, ranging from unidimensional single-item measures to unidimensional multi-item measures, all the way to the current multidimensional multi-item measures.

Bonnett and Furnham (1991) measured entrepreneurial intentions by "involvement in the 'Young Enterprise' scheme". Sagie and Elizur (1999) regard "major" as a key measure of entrepreneurial intentions. S. H. Lee and Wong (2004) relied on "self-report" to measure entrepreneurial intentions; and Wilson et al. (2007) adopted the item "I plan to start my own business in three (or five) years" to measure entrepreneurial intentions.

Van Auken et al. (2006) and Wilson et al. (2007) suggest using unidimensional single-item measures of entrepreneurial intentions as they are simpler and more intuitive. For example, "I intend to start a new business in the next three (or five) years".

However, the reliability and validity of unidimensional single-item measures are difficult to measure, and it is difficult to accurately measure the strength of entrepreneurial intention. To make up for this deficiency, scholars later began to explore the use of multiple items to reduce the error of the measurement itself. Representative ones are shown in Table 2.1.

Table 2.1 Unidimensional multi-item scales of entrepreneurial intention

Researcher (Year)	Item
C. C. Chen et al. (1998)	1. How interested you are in setting up your own business 2. To what extent you have considered setting up your own business 3. To what extent you have been preparing to set up your own business 4. How likely it is that you are going to try hard to set up your own business 5. How soon you are likely to set up your own business
H. Zhao et al. (2005)	1. Starting a business 2. Acquiring a small business 3. Starting and building a high growth business 4. Acquiring and building a company into a high-growth business
Thompson (2009)	1. Intend to set up a company in the future 2. Plan your future carefully 3. Read business newspapers 4. Never search for business start-up opportunities (R) 5. Read financial planning books 6. Are saving money to start a business 7. Do not read books on how to set up a firm (R) 8. Plan your finances carefully 9. Have no plans to launch your own business (R) 10. Spend time learning about starting a firm

Since entrepreneurial intention has rich connotations, a single dimension does not reflect all its meanings. Therefore, many scholars have started to use multidimensional measures of entrepreneurial intention.

Krueger Jr et al. (2000) adopted a two-dimensional perspective of entrepreneurial intention, by measuring it from self-efficacy and attitude toward the act. Xue and Zhai (2012) regard possibility of starting a business and entrepreneurial tendency as the key dimensions of entrepreneurial intention.

Some scholars adopted a three-dimensional perspective into entrepreneurial intention. Ajzen (1991) identified the dimensions of attitude, subjective norms and PBC; Krueger Jr and Brazeal (1994) measured entrepreneurial intention based on the three dimensions of perceived desirability (including social norms and attitude), perceived feasibility (self-efficacy) and propensity to act; Shapero and Sokol (2006) conceptualized entrepreneurial intention into three dimensions: the degree of attraction of entrepreneurship to the individual, the individual's behavioral tendency, and the individual's perception of his or her own entrepreneurial abilities; M. Z. Solesvik (2013) deem attitudes towards entrepreneurship, PBC, and subjective norms related to the formation of perceived entrepreneurial motivation and entrepreneurial intentions to be the three key determinants of entrepreneurial intention; G. J. Zhou et al. (2014) consider that entrepreneurial intention is composed of independence, perseverance, entrepreneurial

sensitivity; Z. Huang and Tian (2020) identified individual heterogeneity, entrepreneurial abilities and family factors to be the key elements of entrepreneurial intention.

Some scholars approached entrepreneurial intention from a four-dimensional perspective. Bird (1988) argues that entrepreneurial intention is composed of entrepreneur's intention (internal locus of control), the intention of other shareholders and the market (external locus), rational intention and intuitive intention. Drnovsek and Erikson (2005) believe that attitudes, social norms, self-efficacy and goal level are crucial components of entrepreneurial intention; X. B. Peng et al. (2019) regard empathy, moral judgment, self-efficacy and perceived social support as key determinants of entrepreneurial intention; Xue and Ma (2014) identified entrepreneurial experience, entrepreneurial attitude, entrepreneurial belief and entrepreneurial tendency as the four dimensions of entrepreneurial intention.

In turn, S. M. Lee and Peterson (2000) conceptualized entrepreneurial intention into five dimensions: autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness.

2.7.3 Theoretical model of entrepreneurial intention

The factors affecting entrepreneurial intentions are diverse, and scholars have developed many theoretical models of entrepreneurial intentions in conjunction with their own research. Examples include the entrepreneurial event model put forward by Shapero and Sokol (2006) and the model of intention created by Bird (1988). The TPB model proposed by Ajzen (1991) has received much academic attention and recognition and has become the basis of theoretical research by subsequent scholars. This section will present them one by one.

1. The entrepreneurial event model was proposed by Shapero and Sokol (2006) and is one of the most representative models of entrepreneurial intention. Entrepreneurial event theory suggests that business startups are driven by entrepreneurial intentions, which are influenced by perceived desirability, perceived feasibility, and propensity to act. Perceived desirability is the degree to which entrepreneurship is attractive to individuals, including not only external but also internal influences: the greater the desirability, the stronger the attraction to entrepreneurs. Perceived feasibility refers to the degree to which individuals believe they can engage in the activity of entrepreneurship. Propensity to act, which reflects the individual's volitional level, is his or her intention to put the decision into practice.

The entrepreneurial event model describes the influencing factors and results of entrepreneurial intentions, which are also influenced by other external factors that contribute to

entrepreneurial behavior. For example, an employee who is unemployed may start a new business as part of his or her new career choice, or an individual who happens to receive a large amount of wealth may invest it to start a new business. These external factors, while influencing entrepreneurship, do not determine entrepreneurial behavior.

2. Bird's model of intention: Bird (1988) suggests that intention influences behavior, and that intention is influenced by the actor's rational analytical cause-effect thinking and intuitive holistic contextual thinking, which are in turn influenced by the social, political, and economic contexts as well as the individual's personal history, current personality, and abilities. The external environment and the individual's own factors interact with each other, acting together on intention and then on behavior. Therefore, with the combination of these factors, entrepreneurial intention must guide the entrepreneur to work towards starting a new business until it is successfully established. Boyd and Vozikis (1994) modified Bird's theoretical model by adding self-efficacy to the model, stating that entrepreneurial self-efficacy plays an important role in the short-term entrepreneurial behavior of entrepreneurs. H. Zhao et al. (2005) also concluded that entrepreneurial self-efficacy can significantly moderate entrepreneurial intentions.

3. The TPB model shown in Figure 2.1 was proposed by Ajzen (1991) is a theoretical model in the field of psychology and clarifies the close connection between intention and behavior, arguing that to promote behavior, the probability of occurrence of an intention that influences behavior must first be increased. Ajzen (1991) argued that entrepreneurial intention is dominated by three main aspects: attitudes toward the behavior, subjective norms, and PBC. Attitudes toward the behavior refers to the actor's positive or negative perception of the behavior; subjective norm refers to the subjective constraints on the actor in the process of performing the behavior, or the external pressure on the actor when performing a certain behavior; PBC refers to the degree of control that the actor can perceive in the process of performing future behaviors, which reflects the ease of performing the target behavior.

From an overall perspective of the TPB model, behavioral attitude, subjective norm, and PBC directly affect the conduct of behavior, and the more positive the performance of these three aspects, the greater the promotion of intention, and thus the greater the probability of carrying out the behavior. Specifically in terms of entrepreneurship, behavioral attitude, subjective norm, and PBC affect the entrepreneurial intentions of entrepreneurs, and the stronger the role of these aspects on intention, the stronger the intentions, and the greater the probability of carrying out entrepreneurial behavior or starting businesses.

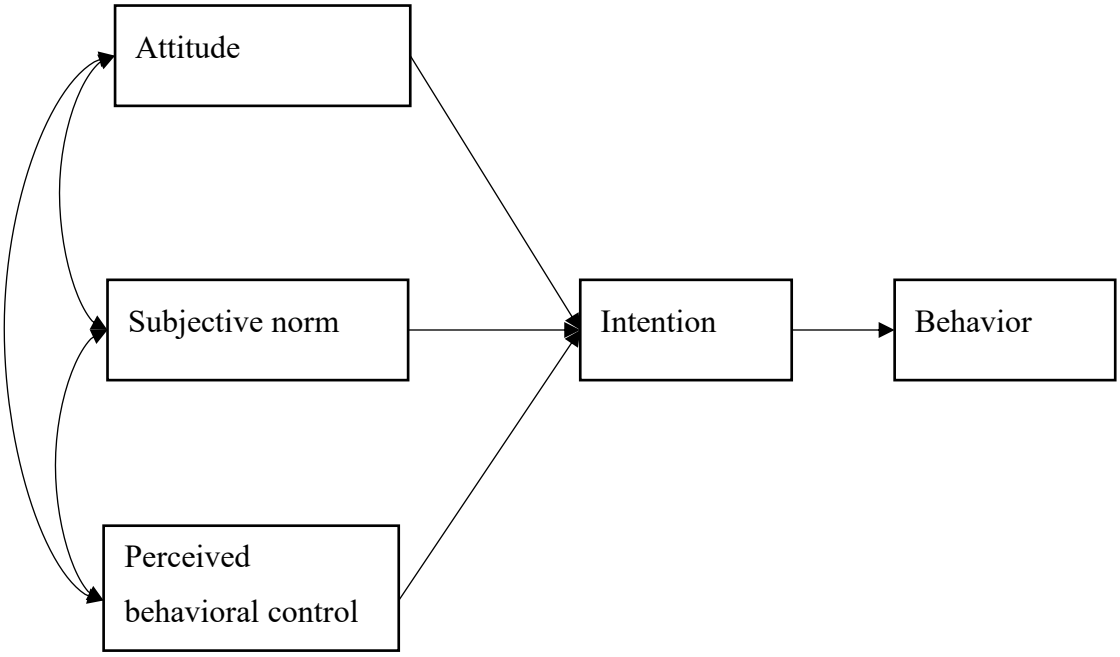


Figure 2.1 The original TPB model

Source: Ajzen (1991)

4. Model of entrepreneurial potential: Krueger Jr and Brazeal (1994) proposed the model of entrepreneurial potential based on the research carried out by Ajzen (1991), suggesting that perceived desirability, perceived feasibility, and propensity to act and precipitating event as a moderator are important factors influencing entrepreneurial potential. Krueger Jr (2000) further adapted the model of entrepreneurial potential proposed by Krueger Jr and Brazeal (1994) to form a modified model of entrepreneurial intention, as shown in Figure 2.2. The model emphasizes the role of exogenous factors, which consist of personal desirability, perceived social norms, perceived self-efficacy, and perceived collective efficacy, and integrates these four exogenous factors into perceived desirability and perceived feasibility, both of which act together on entrepreneurial intentions, with precipitating factors playing a moderating role in the process.

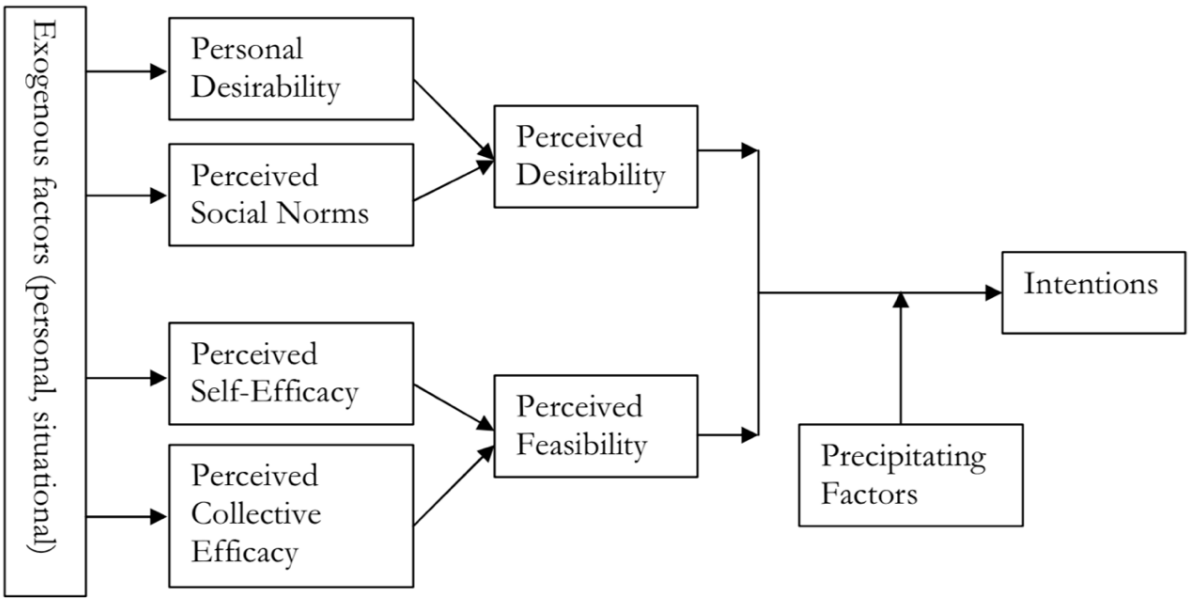


Figure 2.2 The revised entrepreneurial intention model

Source: Krueger Jr (2000)

Grundstén (2004) further modified the entrepreneurial intention model proposed by Krueger Jr (2000) and construed the model shown in Figure 2.3. Similar to the Krueger Jr (2000) model, perceived desirability and perceived feasibility together influence intentions. In this model, perceived desirability is seen as an affective factor and perceived feasibility as a rational factor. The affective factors, instead of consisting of the two dimensions of personal desirability and perceived social norms, include social identification, role models, and social norms; and the rational factors, rather than composed of the two dimensions of perceived self-efficacy and perceived collective efficacy, include financial expectations, perceived opportunity, perceived technology availability, perceived financing availability, perceived social capital (networks) availability, perceived market access, and perceived human resources availability.

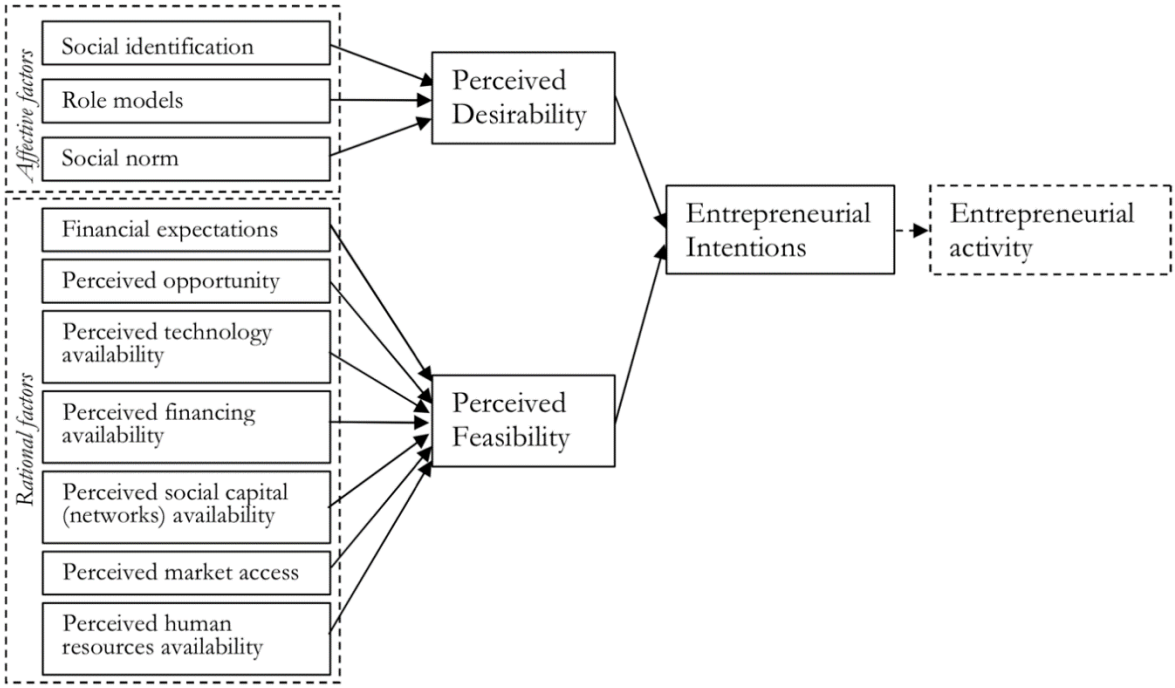


Figure 2.3 Modified entrepreneurial intention model

Source: Grundstén (2004)

W. Fan and Wang (2006) designed a questionnaire on individual entrepreneurial intentions to explore the dimensions of entrepreneurial intentions. The empirical results showed that there are three independent variables for entrepreneurial desirability: self-respect, achievement orientation and innovation orientation; and two independent variables for entrepreneurial feasibility: sense of responsibility and personal control. One of their new and major findings is that self-respect, a less mentioned concept in previous literature, seems to be a factor at play. This implies that in China, individual entrepreneurs place more value on respect for themselves as well as for others in the entrepreneurial process. The dimensions of innovation orientation and personal control also have a significant impact on entrepreneurial intention. Besides, the sense of responsibility dimension has a smaller impact on entrepreneurial intentions than the other four dimensions.

An overview and review of the above models reveals the complexity of factors that affect entrepreneurial intentions. The antecedents of entrepreneurial intentions include factors such as external environment, social norms, self-efficacy, and entrepreneurial attitudes. In terms of model acceptance and scope of applicability, the TPB model has taken the lead. The model, through its extensive use in different countries, has repeatedly verified the positive relationships the three factors of attitude, subjective norm, and PBC have with entrepreneurial factors among college students, which can be a strong basis for predicting entrepreneurial intentions. In contrast, the three constructs of perceived desirability, perceived feasibility, and propensity to

act involved in the entrepreneurial event model are difficult to master; the modified entrepreneurial intention model is too complex to measure. Therefore, this thesis chooses the TPB model as its basis.

2.7.4 Existing studies on the entrepreneurial intentions of college students

Existing research on the entrepreneurial intentions of college students has focused on its influencing factors. For example, Lin et al. (2022) investigated the relationship between different socioeconomic and cultural variables and entrepreneurial intentions of Chinese university students studying in Madrid. The results show that subjective norms, PBC, and entrepreneurial motivation are significantly and positively related to entrepreneurial intention. In contrast, entrepreneurial attitude, gender, and prior work experience are not significantly related to entrepreneurial intention. Another study on entrepreneurial intentions of Algerian students uncovered a negative impact of perceived entrepreneurial climate on entrepreneurial intentions.

More recently, Khan and Farooqi (2022) used 323 Indian college students as a sample with the aim of finding the impact of demographic factors on entrepreneurial intentions of students from top management colleges in India. The results of the study showed that factors such as family, education, age, and background had a negative impact on the entrepreneurial intentions of these students to varying degrees. A study in Vietnam showed that entrepreneurship education, attitudes, and social norms were positively related to entrepreneurial intentions. Among them, entrepreneurial attitudes had the strongest impact on entrepreneurial intentions, while the remaining factors, including perceived support, institutional environment, and risk-taking, were not relevant (Phan Tan, 2021).

Pérez-Fernández et al. (2022) found through their study that the size of social networks in Spain positively influences entrepreneurial information obtained in social networks, which in turn positively affects the entrepreneurial intentions of college students and that enhancing this information has a positive effect on entrepreneurial intentions.

In addition, some scholars have explored the relationship between entrepreneurial intentions and job satisfaction. For example, Na et al. (2022) investigated the relationship between entrepreneurial intentions and delayed job satisfaction from the emotional interaction perspective. The findings showed that students with high levels of delayed career satisfaction had higher levels of entrepreneurial intention, which implied that delayed career satisfaction had a positive effect on entrepreneurial intention. Singh and Onahring (2019) constructed a

research model of the relationship between entrepreneurial intentions, job satisfaction, and organizational commitment, and the findings showed that entrepreneurial intention had a positive effect on job satisfaction.

In China, research on entrepreneurial intention started late. Nevertheless, there has been an increasing number of studies in this area in the last decade. For example, Y. N. Liu (2018) analyzed the relationships between entrepreneurial intention, entrepreneurial learning, entrepreneurial opportunity recognition, and entrepreneurial behavior by taking entrepreneurs with entrepreneurial intention as the sample. Her study further confirmed that entrepreneurial intention has a significant predictive effect on entrepreneurial behavior.

L. H. Duan (2021) empirically analyzed the antecedents of college students' entrepreneurial intentions and factors affecting entrepreneurial behavior. Attitude, subjective norm, PBC, and entrepreneurial situational factors were found to have significant effects on the formation of college students' entrepreneurial intentions, while entrepreneurial intention, PBC, and entrepreneurial situational factors had a significant effect on the entrepreneurial behavior change stage. Cai et al. (2021) investigated the influence of dark tetrad personality traits (Machiavellianism, narcissism, psychopathy, and sadism) on nascent entrepreneurial behavior and the mediating role of entrepreneurial intention using 347 undergraduate and graduate students in China as the sample. Entrepreneurial intention was found to largely mediate the relationship between the dark tetrad personality traits and nascent entrepreneurial behavior.

Fu et al. (2022) analyzed the factors influencing entrepreneurial intention among Chinese college students and concluded that perceived competence, entrepreneurial self-efficacy, entrepreneurial attitude, and entrepreneurship education all had positive effects on entrepreneurial intentions, while subjective norms had no direct effect on entrepreneurial intentions. W. J. Li and Zhu (2022) analyzed the factors influencing the entrepreneurial intentions and behaviors of researchers with researchers in Shanghai as participants. The results indicated that self-efficacy and policy knowledge had significant positive effects on researchers' entrepreneurial intentions. Particularly, their results suggested that most researchers are focused on research in universities or research institutions and have limited access to the latest policies, let alone the implementation details. Consequently, they may miss the opportunities simply because they are not aware of the resources they are blessed with. To minimize such phenomena, W. J. Li and Zhu (2022) suggest that the government and relevant institutions increase policy advocacy efforts.

In addition, some scholars believe that the social environment is also an important factor influencing college students' intention to start a business. Han (2017) decomposed social

environment into four components, supporting policies, market environment, moral environment, and public security environment. Y. L. Chen and Yu (2019) argue that social environment is mainly composed of societal and cultural environment (policies, social security system, and traditional employment concepts), school environment, and family environment (parents' expectations). D. Zhao (2022) put the research perspective on social environment and analyzed its influence on such intention. The results showed that peers' entrepreneurial behavior, their own club participation, and family support had a significant positive influence on college students' entrepreneurship. Sun et al. (2022) also confirmed in their study on the influence of social environment on entrepreneurial intention that gender, major, entrepreneurial experience of people around them, as well as the curriculum guidance provided by universities to promote innovation and entrepreneurship among college students, the practical bases, and the innovation and entrepreneurship colleges established all had a significant positive influence on college students' entrepreneurial intention.

In summary, scholars at home and abroad have conducted a lot of in-depth research on the definition, dimensions, and influencing factors of entrepreneurial intentions and have led to a series of research results. However, there is no consensus on the definition and dimensions of entrepreneurial intention among researchers so far. These research results have provided a solid theoretical foundation for further studies.

Due to the increasing pressure of the current employment situation, it is important to guide college students to start their own business. Although the government has introduced many incentive policies and schools have to carry out courses related to entrepreneurship education, the intention of college students to start their own business is not obvious, and there is a need to better understand the drivers behind college students' intention to start their own business and entrepreneurial behavior to produce meaningful results on reality and provide solid theoretical support for government decision-making and for college student entrepreneurship. Therefore, this thesis will draw on the results of existing mature research and construct a conceptual model to explore the factors influencing Chinese college students' entrepreneurial intention.

2.8 Research model and research hypotheses

Based on the above analyses, this thesis proposes a model of Chinese college students' entrepreneurial intentions shown in Figure 2.4 below.

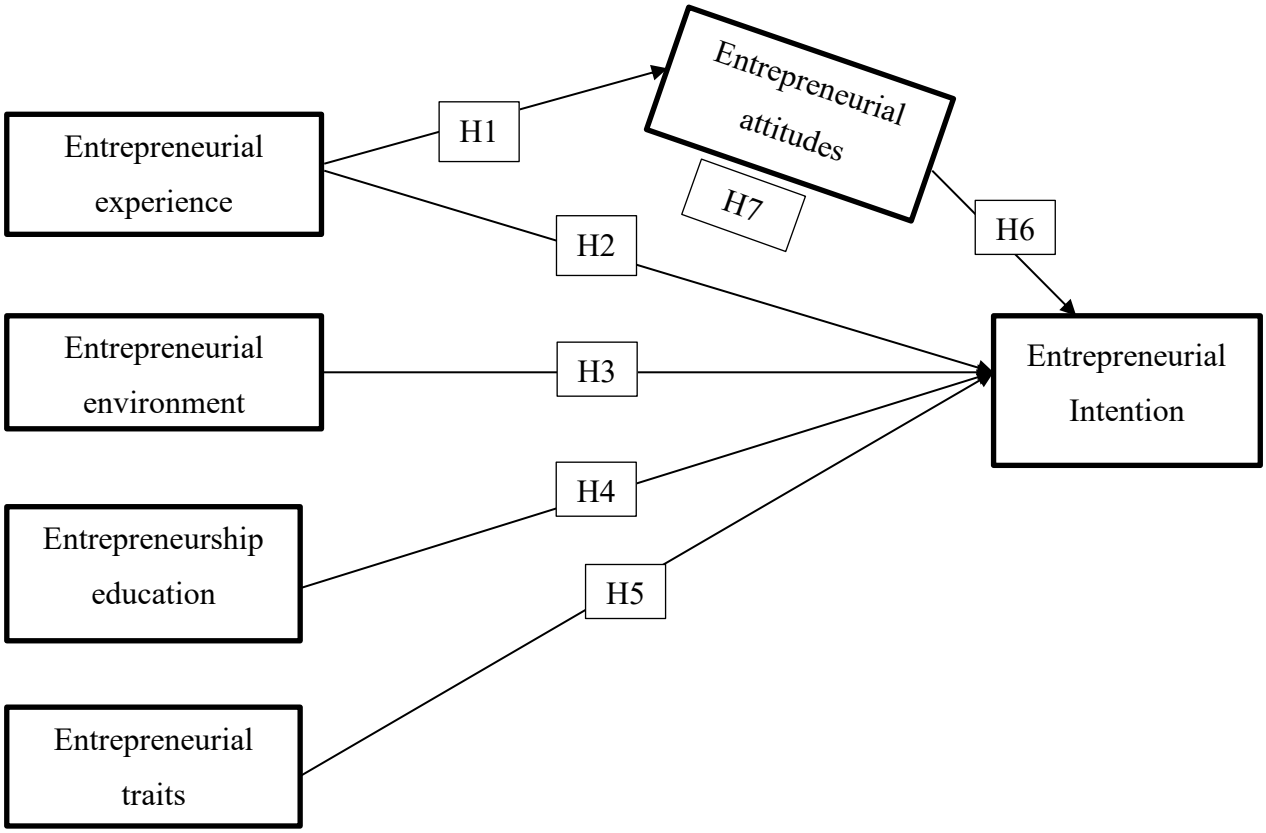


Figure 2.4 A model of influencing factors of Chinese college students' entrepreneurial intentions

The research hypotheses underpinning the above model are listed in Table 2.2

Table 2.2 List of hypotheses

No.	Hypotheses
H1	College students' entrepreneurial experiences are positively related to their entrepreneurial attitudes.
H2	College students' entrepreneurial experiences are positively related to their entrepreneurial intentions.
H3	College students' entrepreneurial environment is positively related to their entrepreneurial intentions.
H4	College students' entrepreneurship education is positively related to their entrepreneurial intentions.
H5	College students' entrepreneurial traits are positively related to their entrepreneurial intentions.
H6	College students' entrepreneurial attitudes are positively related to their entrepreneurial intentions.
H7	College students' entrepreneurial attitudes mediate the relationship between their entrepreneurial experiences and entrepreneurial intentions.

Chapter 3: Research Methods

This chapter introduces the participants and data collection process of this study. It presents the measurement scales for entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurial intentions, and explains in detail the reliability and validity of the scales.

3.2 Sample and data collection

This study targeted students from business schools in universities located in five cities of Zhejiang Province as the survey respondents. The data were collected by distributing online questionnaires to business schools in five universities located in Zhejiang Province and administrating paper-and-pencil questionnaires among students in four colleges and universities located in Shaoxing City, Zhejiang Province. In total, students from nine colleges and universities in Zhejiang Province participated in the survey of this study. These colleges and universities were selected according to the convenience sampling method known for the advantages of being affordable, simple and efficient (Jager et al., 2017). The choice was dictated by the availability of faculty willing to administer the paper questionnaires in class to maximize the number of responses.

To ensure the clarity and conciseness of the questionnaire, five teachers from the business schools in the sample universities were invited to read the questionnaire carefully. The purpose was to identify and optimize unreasonable, ambiguous, or unclear expressions to ensure the face validity of the questionnaire. Then a 5-point Likert scale was used to collect respondents' views, with "1" indicating "totally disagree", "2" "disagree", "3" "neither disagree nor agree", "4" "agree", and "5" "totally agree".

In the instruction part of the questionnaire, the purpose of the study was introduced to the respondents so that they could understand the significance of the study. At the beginning of the questionnaire, respondents were informed that the collected data would be kept confidential. Besides, an expression of appreciation was conveyed. All these contents were meant to dispel the respondents' doubts and ensure that the most accurate information could be obtained.

From November 1 to November 20, 2020, a total of 900 questionnaires were distributed. Due to different lockdown restrictions in different universities, some questionnaires were

distributed online and others in paper. Specifically, 470 questionnaires had to be distributed online to business school students in five universities located in Zhejiang Province: one in Jinhua City, two in Hangzhou City, one in Ningbo City and one in Wenzhou City. In total, 435 questionnaires were recovered, representing a recovery rate of 92.6%. During the same period, 430 paper-and-pencil questionnaires were distributed among business school students in four colleges and universities located in Shaoxing City, Zhejiang Province, and 393 questionnaires were recovered, representing a recovery rate of 91.40%.

The collected questionnaires were sorted and screened. The perfunctorily filled questionnaires in which the same answers were chosen by respondents were excluded because they had not been seriously filled. Besides, all non-complete questionnaires were also excluded in a total of 37 questionnaires, leaving 828 valid questionnaires, representing a total valid recovery rate of 92%.

3.3 Measures

3.3.1 Demographic variables

Demographic variables refer to characteristics of a population, such as gender, age, marital status, education level, income and group membership (Park et al., 2021). The respondents were all college students who had not officially entered the workforce and were generally single. Considering the research purpose, this study identified four relevant demographic variables: gender (male/female), grade (first year/second year/third year/fourth year), major and membership of student association(s) (yes/no).

3.3.2 Entrepreneurial experiences

Entrepreneurial experiences, in the context of this study, refer to present and past exposure to entrepreneurial activities (Harris & Gibson, 2008). As college students have not officially entered the workforce, their exposure to entrepreneurial activities is predominantly reflected in internships, participation in entrepreneurship competitions, group membership and exposure to trainings on entrepreneurship (D. He, 2006; Y. H. Liu, 2013). Therefore, this study has identified the following four items to measure entrepreneurial experiences:

(1) I was involved in entrepreneurial teams.

(2) I used to work as a company intern and accumulated significant experience.

(3) I received entrepreneurship training and guidance in school.

(4) I participated in entrepreneurship competitions such as business plan competitions.

3.3.3 Entrepreneurial environment

Entrepreneurial environment was measured by nine items out of the 12 items of the four-dimensional scale developed by Chinese scholars O. M. Li and Wu (2017) based on the conceptualization of entrepreneurial environment into different dimensions by other scholars (Y. X. Chen, 2005; Gnyawali & Fogel, 1994; Su, 2009; J. Wu, 2008). The four dimensions are: policy, education, financing, and culture. As the education dimension was a variable (entrepreneurship education) measured separately in this study, only the remaining three dimensions consisting of nine items were selected to measure entrepreneurial environment. The nine items are as follows:

(1) The government provides convenient business registration and approval procedures.

(2) The government provides favorable taxation policies.

(3) The government provides a comprehensive system of business start-up services.

(4) College students have easy access to government or school start-up funds.

(5) College students have easy access to interest-free or low-interest loans from banks.

(6) College students have easy access to a variety of investment or credit guarantees.

(7) My parents support me to start my own business.

(8) The society tolerates entrepreneurial failure.

(9) There is a strong local culture of entrepreneurship and innovation.

3.3.4 Entrepreneurship education

The main components of entrepreneurship education include entrepreneurial awareness, entrepreneurial knowledge, entrepreneurial competencies and entrepreneurial psychological qualities (G. Peng, 1995). The Entrepreneurship Education Scale (EES), developed by X. G. Li (2020) with reference to Franke and Lüthje (2004), W. H. Qi (2017) and X. J. Wei et al. (2019) was selected to measure entrepreneurship education in this thesis, including the following seven questions.

(1) The entrepreneurship education in our school has increased my interest in entrepreneurship.

(2) The entrepreneurship education in our school has improved my knowledge of business plans.

(3) The entrepreneurship education in our school has improved my understanding of

business opportunities.

(4) I believe that the entrepreneurship education in our school has improved my business management skills.

(5) The school has a well-established entrepreneurship base or entrepreneurship guidance organization.

(6) The school provides a favorable climate for entrepreneurship.

(7) The school has excellent entrepreneurship instructors (including part-time instructors).

3.3.5 Entrepreneurial traits

Entrepreneurial traits, in the context of this thesis, refer to "the psychological and physical characteristics that entrepreneurs possess that stimulate their entrepreneurial abilities to achieve their entrepreneurial goals in a stable and steady manner" (J. J. Liang & Zhang, 2021, p. 20). They were measured by the Entrepreneurial Traits Scale (ETS) developed by Y. W. Du (2015). The ETS consists of the following six items:

(1) I like adventure and am willing to take risks.

(2) I am confident and independent and believe that events are predictable and controllable.

(3) I am active and have authority in the crowd.

(4) I am creative and energetic.

(5) I am good at turning challenges into opportunities.

(6) I am willing to face and overcome difficulties.

3.3.6 Entrepreneurial attitudes

Entrepreneurial attitudes were measured by the nine-item scale developed by Phan et al. (2002) due to its relevance of the sample and widespread adoption by subsequent researchers (Gurbuz & Aykol, 2008; Samantha Kumara, 2012; Tong et al., 2011). The nine items are as follows:

(1) I want to test my own ideas.

(2) I enjoy personal challenges.

(3) I want to accomplish personal achievement.

(4) I want to become independent.

(5) I want to achieve status and prestige.

(6) I want to receive public recognition.

(7) I want to accumulate money and wealth.

(8) I want to contribute to society.

(9) I want to help my country to advance.

3.3.7 Entrepreneurial intentions

The items used to measure entrepreneurial intention are selected from the Entrepreneurial Intention Scale (EIS) scale developed by Liñán and Chen (2006). The EIS consists of the following six items:

(1) I'm ready to make anything to be an entrepreneur.
(2) My professional goal is becoming an entrepreneur.
(3) I will make every effort to start and run my own firm.
(4) I'm determined to create a firm in the future.
(5) I have very seriously thought in starting a firm.
(6) I've got the firm intention to start a firm some day.

3.4 Reliability and validity of scales

3.4.1 Reliability test

Reliability test is used to ensure the validity of model fit evaluations and hypotheses testing. It measures whether the responses from respondents in a questionnaire are reliable and whether there are true responses (Thanasegaran, 2009). Cronbach's alpha coefficient (Cronbach's α) was used in this thesis to check the consistency of the research variables of the questionnaire across the measured items. Hair et al. (2014) and DeVellis (1991) suggest that for variables to have good reliability, the Cronbach's α must be greater than 0.7. The Cronbach's α values of the research variables are presented in Table 3.1 below. Specifically, the overall Cronbach's α in this study was 0.931, and the Cronbach's α values for entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education and entrepreneurial intentions are 0.862, 0.887, 0.912, 0.911, 0.883 and 0.885 respectively, which are all higher than 0.7, indicating that the questionnaire has good reliability.

Table 3.1 Reliability analysis

No.	Corrected item total correlation (CITC)	Cronbach's α of each item	Cronbach's α of each scale
A1	0.636	0.852	
A2	0.795	0.785	0.862
A3	0.732	0.814	
A4	0.678	0.836	
B1	0.743	0.861	
B2	0.665	0.874	
B3	0.699	0.868	0.887
B4	0.715	0.866	
B5	0.680	0.871	
B6	0.710	0.866	
C1	0.693	0.902	
C2	0.783	0.896	
C3	0.649	0.905	
C4	0.679	0.903	
C5	0.702	0.901	0.912
C6	0.692	0.902	
C7	0.683	0.903	
C8	0.673	0.903	
C9	0.696	0.902	
D1	0.709	0.900	
D2	0.648	0.904	
D3	0.683	0.902	
D4	0.633	0.905	
D5	0.744	0.897	0.911
D6	0.637	0.905	
D7	0.720	0.899	
D8	0.771	0.895	
D9	0.689	0.901	
E1	0.686	0.864	
E2	0.590	0.876	
E3	0.710	0.861	
E4	0.613	0.873	0.883
E5	0.650	0.868	
E6	0.742	0.857	
E7	0.700	0.862	
F1	0.678	0.868	
F2	0.678	0.868	
F3	0.766	0.857	
F4	0.666	0.869	0.885
F5	0.642	0.872	
F6	0.700	0.865	
F7	0.634	0.878	

3.4.2 Validity test

Validity indicates whether a questionnaire is meaningful and reasonable and determines whether the items are designed in a reasonable and scientific manner and reflective of the researcher's objective (Downing, 2003). Validity test is an important part of empirical analysis. Researchers often do not have enough time or resources to develop new measurement tools so,

to save time and cost, they tend to refer to existing measurement tools, such as questionnaires. Using existing measurement tools can help researchers find out whether the same measurement tools are applicable to different studies. It is therefore important to test whether they remain valid and can be accurately applied and interpreted for the sample of the present study.

To test the validity of questionnaires, content validity and construct validity are usually tested. Content validity is defined as "the degree to which elements of an assessment instrument are relevant to a representative of the targeted construct for a particular assessment purpose" (Haynes et al., 1995, p. 238). The questionnaire used in this study was designed based on a review of existing literature indicating the relationships or associations between variables. Besides, the wording and expression of the items were further modified and refined by teachers of the business schools of the sample universities to ensure full understanding and, content wise, the scales can be considered to have the required validity.

3.4.2.1 Exploratory factor analysis

In this study, the focus was on construct validity, which refers to the extent to which the items accurately measure what they are supposed to measure (Smith, 2005). Here, the construct validity of the scales was tested by conducting exploratory factor analysis (EFA) on the data collected.

In general, to conduct EFA, a feasibility test for factor analysis needs to be carried out first to satisfy two conditions (Tabachnick et al., 2007): 1. The KMO value is greater than 0.7; 2. Bartlett's test of sphericity is significant (Sig. < 0.05).

SPSS 24.0 was used to conduct EFA to perform the KMO and Bartlett's spherical tests on the scales. The results are shown in Table 3.2 below.

Table 3.2 KMO and Bartlett's test of sphericity for the questionnaire

Kaiser-Meyer-Olkin measure of sampling adequacy		0.937
Bartlett's test of sphericity	Approx. chi-square	18778.590
	df	861
	p value	.000

Factor analysis was used for data enrichment research. The collected data were first analyzed for suitability for factor analysis. As shown in Table 3.2 the value of KMO is 0.937, which is higher than 0.7, and the *p*-value of Bartlett's test of sphericity is 0.000, which is lower than 0.005 indicating that the data are suitable for factor analysis.

The commonalities in Table 3.3 reflect the degree of dependence of each variable on the extracted common factor. As shown in the results of the analysis by the SPSS 24, almost all the variables were extracted with a degree of 50% or more, indicating that the extracted information

already contained most of that of the original variables and that the factor extraction was relatively effective.

Table 3.3 Commonalities

	Initial	Extraction
A1	1.000	0.623
A2	1.000	0.798
A3	1.000	0.727
A4	1.000	0.673
B1	1.000	0.695
B2	1.000	0.603
B3	1.000	0.637
B4	1.000	0.659
B5	1.000	0.615
B6	1.000	0.649
C1	1.000	0.586
C2	1.000	0.709
C3	1.000	0.527
C4	1.000	0.567
C5	1.000	0.601
C6	1.000	0.585
C7	1.000	0.586
C8	1.000	0.566
C9	1.000	0.594
D1	1.000	0.607
D2	1.000	0.547
D3	1.000	0.576
D4	1.000	0.520
D5	1.000	0.652
D6	1.000	0.520
D7	1.000	0.625
D8	1.000	0.695
D9	1.000	0.594
E1	1.000	0.614
E2	1.000	0.480
E3	1.000	0.645
E4	1.000	0.519
E5	1.000	0.561
E6	1.000	0.688
E7	1.000	0.633
F1	1.000	0.604
F2	1.000	0.602
F3	1.000	0.716
F4	1.000	0.585
F5	1.000	0.547
F6	1.000	0.628
F7	1.000	0.537

In this thesis, factors were extracted using principal component analysis (PCA). To reduce the dimensionality of the original indicators through linear transformation, the few indicators formed by synthesis reflect most of the information of the original indicators. To enable the extracted factors to concentrate on the corresponding original variables with larger loadings,

the maximum variance method for factor rotation was used. The components with eigenvalues greater than 1 were extracted as common factors. If the factor loadings of the indicator variables are greater than 0.5 and the cumulative explained variance ratio is higher than 50% (or 40% according to some scholars), then the factors extracted by the principal components are in line with the research requirements.

Table 3.4 presents an analysis of the factor extractions and the amount of information extracted by the factor. As shown in Table 3.4, the factor analysis extracted six factors with eigenvalues greater than 1. The percentage of variance explained by these six factors after rotation were 13.050%, 12.777%, 10.025%, 9.841%, 9.027%, 6.460% respectively. The cumulative percentage of variation explained was 61.180%, which is higher than 60%, indicating that the extracted factors were valid.

Table 3.4 Total variance explained

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	11.102	26.433	26.433	11.102	26.433	26.433	5.481	13.050	13.050
2	5.162	12.291	38.725	5.162	12.291	38.725	5.366	12.777	25.827
3	3.116	7.420	46.144	3.116	7.420	46.144	4.210	10.025	35.852
4	2.388	5.686	51.830	2.388	5.686	51.830	4.133	9.841	45.693
5	2.140	5.096	56.926	2.140	5.096	56.926	3.792	9.027	54.720
6	1.787	4.254	61.180	1.787	4.254	61.180	2.713	6.460	61.180
7	0.875	2.083	63.264						
8	0.698	1.663	64.927						
9	0.674	1.604	66.531						
10	0.653	1.555	68.086						
11	0.628	1.496	69.582						
12	0.612	1.456	71.038						
13	0.580	1.381	72.419						
14	0.579	1.378	73.797						
15	0.561	1.337	75.134						
16	0.546	1.300	76.433						
17	0.527	1.255	77.688						
18	0.506	1.204	78.892						
19	0.500	1.192	80.084						
20	0.483	1.150	81.234						
21	0.476	1.133	82.367						
22	0.468	1.113	83.480						
23	0.451	1.074	84.554						
24	0.444	1.057	85.611						
25	0.436	1.038	86.649						
26	0.435	1.036	87.685						
27	0.408	0.971	88.656						
28	0.405	0.965	89.622						
29	0.399	0.950	90.571						
30	0.383	0.913	91.485						
31	0.379	0.902	92.387						
32	0.357	0.849	93.236						

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
33	0.351	0.836	94.072						
34	0.345	0.820	94.893						
35	0.328	0.780	95.673						
36	0.317	0.756	96.429						
37	0.299	0.712	97.141						
38	0.287	0.683	97.824						
39	0.279	0.664	98.488						
40	0.242	0.577	99.065						
41	0.200	0.475	99.541						
42	0.193	0.459	100.000						

Figure 3.1 is a screen plot of the principal factors. It presents the number of factors to be extracted based on the data in the "Total" column under the "Initial Eigenvalue" column in the figure, and the eigenvalues were arranged in descending order. In fact, it is a scatter plot of the principal components according to the size of the eigenvalues. As can be seen from Figure 3.1, the eigenvalues after the 6th factor in the screen plot started to change more slowly and were less than 1. Therefore, it was more appropriate to extract the first six principal factors.

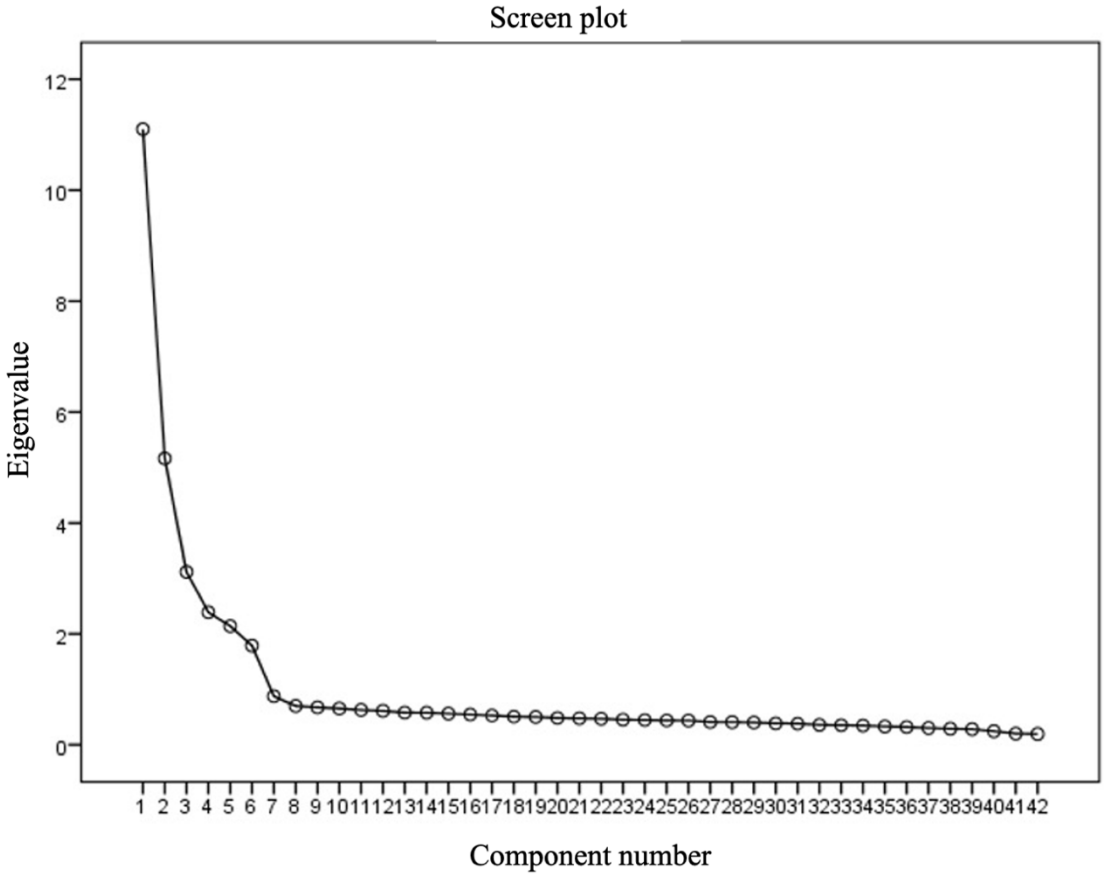


Figure 3.1 Screen plot of principal factors

The data for this study were rotated using varimax rotation to find the corresponding relationships between the factors and the measurement items. Table 3.5 shows how well the factors extracted information from the items and how well the factors corresponded to the items. All the factor loadings of the 42 items were greater than 0.66 indicating that the six factors obtained are consistent with the theory and may be considered valid.

Table 3.5 Rotated component matrix

Variable	Item	Component					
		1	2	3	4	5	6
Entrepreneurial experiences	A1	0.206	0.114	0.014	0.164	0.101	0.728
	A2	0.245	0.140	-0.002	0.211	0.131	0.810
	A3	0.219	0.158	0.044	0.140	0.121	0.786
	A4	0.161	0.142	0.035	0.158	0.103	0.768
Entrepreneurial traits	B1	0.094	0.195	0.123	0.096	0.783	0.105
	B2	0.085	0.145	0.114	0.072	0.742	0.076
	B3	0.018	0.196	0.132	0.132	0.742	0.114
	B4	0.000	0.209	0.171	0.133	0.751	0.061
	B5	0.077	0.153	0.164	0.164	0.728	0.038
	B6	0.070	0.194	0.131	0.101	0.756	0.086
Entrepreneurial attitude	C1	0.718	0.031	0.018	0.192	0.079	0.163
	C2	0.813	0.059	-0.024	0.169	0.056	0.109
	C3	0.690	0.063	-0.022	0.201	0.014	0.077
	C4	0.713	0.014	0.056	0.165	0.066	0.155
	C5	0.754	0.080	0.006	0.133	0.045	0.080
	C6	0.738	0.080	-0.006	0.162	0.055	0.073
	C7	0.746	0.116	0.011	0.112	0.024	0.047
	C8	0.734	0.068	0.017	0.100	0.005	0.114
	C9	0.753	0.051	0.035	0.120	0.051	0.082
Entrepreneurial environment	D1	0.081	0.735	0.117	0.141	0.102	0.127
	D2	-0.005	0.698	0.139	0.128	0.157	-0.016
	D3	0.066	0.711	0.114	0.136	0.097	0.158
	D4	0.138	0.682	0.019	0.145	0.107	0.055
	D5	0.059	0.763	0.155	0.123	0.150	0.073
	D6	0.115	0.690	0.066	0.056	0.118	0.093
	D7	0.048	0.748	0.122	0.090	0.148	0.137
	D8	0.047	0.800	0.112	0.111	0.161	0.042
	D9	0.044	0.745	0.106	0.063	0.147	0.003
Entrepreneurship education	E1	0.054	0.058	0.763	0.079	0.139	0.000
	E2	-0.015	0.101	0.668	0.068	0.132	0.041
	E3	-0.002	0.134	0.782	0.056	0.109	-0.032
	E4	0.011	0.100	0.701	0.112	0.051	0.044
	E5	0.020	0.161	0.716	0.104	0.109	-0.022
	E6	0.010	0.093	0.814	0.082	0.097	0.030
	E7	-0.003	0.145	0.764	0.093	0.134	0.046
Entrepreneurial intention	F1	0.203	0.094	0.105	0.726	0.095	0.085
	F2	0.201	0.143	0.065	0.714	0.094	0.135
	F3	0.209	0.161	0.136	0.778	0.086	0.122
	F4	0.180	0.143	0.044	0.698	0.144	0.151
	F5	0.239	0.146	0.106	0.663	0.092	0.099
	F6	0.207	0.120	0.118	0.732	0.117	0.083
	F7	0.165	0.161	0.136	0.664	0.130	0.090

3.4.2.2 Confirmatory factor analysis

Confirmatory factor analysis (CFA) was used to test the convergent validity of the items used to measure each variable. The main purpose was to check the degree of fit of the actual measurement data to the theoretical construct. According to F. M. Huang (2015), the validity test of a scale contains the following conditions:

1. A measurement model is said to have convergent validity if it meets the following conditions (Fornell & Larcker, 1981; Hair et al., 2014): (1) Factor loadings assess whether each loading is statistically significant and needs to be greater than 0.7; (2) The compositional reliability (CR) indicates the internal consistency of the items used to measure the constructs, with a higher reliability indicating a higher consistency of these items. CR needs to be greater than 0.7; (3) Average variance extracted (AVE) is a measure of the ability of a latent variable to explain the variance of each item. A higher AVE indicates higher reliability and convergent validity of the item, and it is recommended that the standard value be greater than 0.5.

2. Overall model fit indices. When using CFA to test validity, the fit of the model needs to be evaluated, and the measurement model needs to be revised to improve the goodness-of-fit of the model. According to L. Hu and Bentler (1998), the model fit parameters mainly include indicators such as X^2/df, Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Tucker–Lewis Index (TLI), Incremental Fit Index (IFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Figure 3.2 presents the confirmatory factor analysis model of this study.

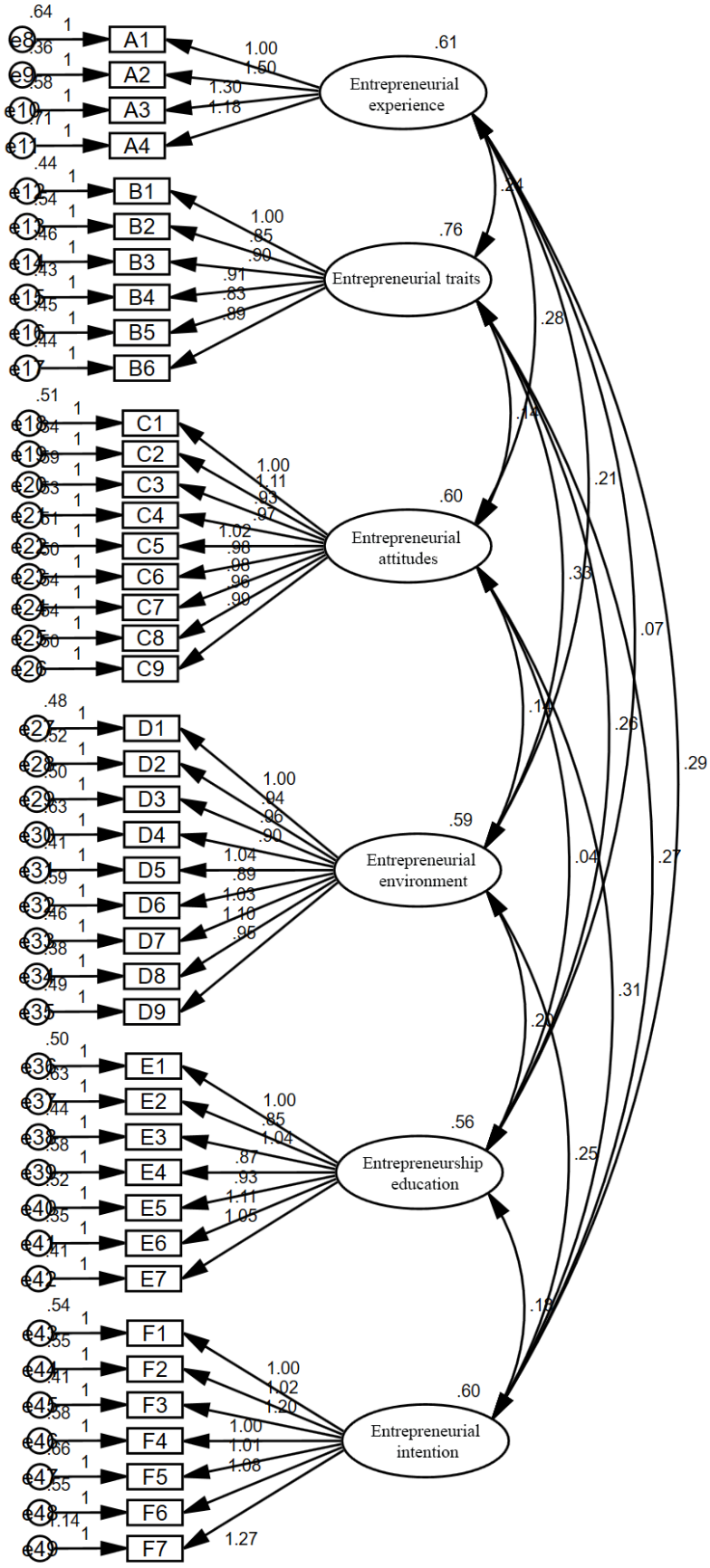


Figure 3.2 Confirmatory factor analysis model

Table 3.6 below shows that the CMIN/DF was 1.875; the GFI, AGFI, NFI, TLI, IFI and CFI were all above 0.9 and the RMSEA was 0.033, which is smaller than 0.08. Besides, SRMR was 0.030, which is smaller than 0.05. All the fit indices met the criteria for general SEM studies. Therefore, the model could be considered to have sound goodness-of-fit.

Table 3.6 Confirmatory factor analysis model fit

Fit index	Acceptable range	Value
CMIN		1507.733
DF		804
CMIN/DF	<5	1.875
GFI	>0.9	0.923
AGFI	>0.9	0.913
RMSEA	<0.08	0.033
IFI	>0.9	0.962
NFI	>0.9	0.921
TLI(NNFI)	>0.9	0.959
CFI	>0.9	0.961
SRMR	<0.05	0.030

As shown in Table 3.7 below, the standardized factor loadings for each item were greater than 0.6, and the residuals were positive and significant, indicating no violation of the estimates. The CR values for entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education and entrepreneurial intention were 0.864, 0.887, 0.912, 0.911, 0.883 and 0.889 respectively, all greater than 0.7. The AVEs were 0.616, 0.568, 0.536, 0.535, 0.522 and 0.536, all greater than 0.5 while meeting the criteria for convergent validity. The goodness-of-fit was within the acceptable range. Therefore, all items were retained for subsequent analysis.

Table 3.7 Confirmatory factor analysis results

			Estimate	S.E.	C.R.	P	Factor loading	CR	AVE
A1	<---	Entrepreneurial experiences	1.000				0.699	0.864	0.616
A2	<---	Entrepreneurial experiences	1.498	0.066	22.618	***	0.890		
A3	<---	Entrepreneurial experiences	1.296	0.062	20.797	***	0.799		
A4	<---	Entrepreneurial experiences	1.185	0.061	19.295	***	0.738		
B1	<---	Entrepreneurial traits	1.000				0.794	0.887	0.568
B2	<---	Entrepreneurial traits	0.855	0.040	21.575	***	0.710		
B3	<---	Entrepreneurial traits	0.897	0.040	22.596	***	0.754		
B4	<---	Entrepreneurial traits	0.911	0.039	23.303	***	0.770		
B5	<---	Entrepreneurial traits	0.828	0.038	21.890	***	0.730		
B6	<---	Entrepreneurial traits	0.891	0.039	22.943	***	0.761		
C1	<---	Entrepreneurial attitude	1.000				0.732	0.912	0.536
C2	<---	Entrepreneurial attitude	1.114	0.048	23.428	***	0.826		
C3	<---	Entrepreneurial attitude	0.934	0.048	19.289	***	0.684		
C4	<---	Entrepreneurial attitude	0.966	0.048	20.333	***	0.716		
C5	<---	Entrepreneurial attitude	1.018	0.049	20.863	***	0.738		
C6	<---	Entrepreneurial attitude	0.977	0.047	20.630	***	0.729		
C7	<---	Entrepreneurial attitude	0.981	0.049	20.229	***	0.717		
C8	<---	Entrepreneurial attitude	0.956	0.048	19.999	***	0.709		
C9	<---	Entrepreneurial attitude	0.990	0.048	20.807	***	0.732		
D1	<---	Entrepreneurial environment	1.000				0.744	0.911	0.535
D2	<---	Entrepreneurial environment	0.936	0.047	20.093	***	0.706		
D3	<---	Entrepreneurial environment	0.955	0.046	20.916	***	0.722		
D4	<---	Entrepreneurial environment	0.905	0.048	18.827	***	0.659		
D5	<---	Entrepreneurial environment	1.043	0.046	22.594	***	0.782		
D6	<---	Entrepreneurial environment	0.894	0.047	19.074	***	0.667		
D7	<---	Entrepreneurial environment	1.025	0.047	21.846	***	0.757		
D8	<---	Entrepreneurial environment	1.102	0.047	23.283	***	0.809		
D9	<---	Entrepreneurial environment	0.950	0.046	20.663	***	0.724		
E1	<---	Entrepreneurship education	1.000				0.726	0.883	0.522
E2	<---	Entrepreneurship education	0.845	0.049	17.089	***	0.623		
E3	<---	Entrepreneurship education	1.036	0.049	20.947	***	0.759		

			Estimate	S.E.	C.R.	P	Factor loading	CR	AVE
E4	<---	Entrepreneurship education	0.870	0.049	17.808	***	0.648		
E5	<---	Entrepreneurship education	0.926	0.048	19.177	***	0.693		
E6	<---	Entrepreneurship education	1.106	0.051	21.836	***	0.813		
E7	<---	Entrepreneurship education	1.050	0.051	20.763	***	0.774		
F1	<---	Entrepreneurial intention	1.000				0.724	0.889	0.536
F2	<---	Entrepreneurial intention	1.022	0.051	20.155	***	0.731		
F3	<---	Entrepreneurial intention	1.204	0.053	22.765	***	0.825		
F4	<---	Entrepreneurial intention	1.005	0.051	19.713	***	0.714		
F5	<---	Entrepreneurial intention	1.009	0.053	19.088	***	0.694		
F6	<---	Entrepreneurial intention	1.076	0.052	20.558	***	0.748		
F7	<---	Entrepreneurial intention	1.272	0.068	18.693	***	0.678		

Note: * $p<0.05$ ** $p<0.01$ *** $p<0.001$

Discriminant validity analysis is used to verify whether there are statistical differences in the correlations between two different constructs and that the items in the different constructs should not be highly correlated. If there are differences (above 0.85), then these items are measuring the same thing, which usually occurs when the definitions of the constructs overlap too much. This study used the rigorous AVE method to assess discriminant validity. Fornell and Larcker (1981) argue that the square root of the AVE of each factor must be greater than the correlation coefficient of each paired variable to indicate discriminant validity between factors. The diagonal is the standardized correlation coefficient for each factor where the square root of the AVE is greater than the off-diagonal. Therefore, this study has discriminant validity, and the diagonal lower triangle is the correlation coefficient.

3.4.3 Common method bias test

Table 3.8 below presents the results of the Harman's one-factor test. After putting all the variables together in a factor analysis using PCA, the results of the unrotated factor analysis showed that the cumulative % of variance explained of the six common factors aggregated was 61.180%, with the first factor explaining 26.433% of the variance, which did not exceed 40%. In other words, there was no one factor with particularly high explanatory power, thus indicating that there was no common variance.

Table 3.8 Harman's one-factor test

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	11.102	26.433	26.433	11.102	26.433	26.433	5.481	13.050	13.050
2	5.162	12.291	38.725	5.162	12.291	38.725	5.366	12.777	25.827
3	3.116	7.420	46.144	3.116	7.420	46.144	4.210	10.025	35.852
4	2.388	5.686	51.830	2.388	5.686	51.830	4.133	9.841	45.693
5	2.140	5.096	56.926	2.140	5.096	56.926	3.792	9.027	54.720
6	1.787	4.254	61.180	1.787	4.254	61.180	2.713	6.460	61.180

Table 3.9 below shows the test results by the latent error variable control method. The values of all fitting indices of the structural equation model with the common method bias factor were not significantly better than that of the structural equation model without the common method bias factor. This further suggests that the formal research sample data collected using the research methods in this study did not suffer from common method bias.

Table 3.9 Test results of the latent error variable control method of the formal survey sample data (N = 828)

Fit indices	Acceptable range	Without common method	With common method
CMIN		1507.733	1146.589
DF		804	762
CMIN/DF	<5	1.875	1.505
GFI	>0.9	0.923	0.939
AGFI	>0.9	0.913	0.928
RMSEA	<0.08	0.033	0.025
IFI	>0.9	0.962	0.979
NFI	>0.9	0.921	0.940
TLI(NNFI)	>0.9	0.959	0.976
CFI	>0.9	0.961	0.979
SRMR	<0.05	0.030	0.025

3.5 Chapter summary

This chapter has introduced the participants and data collection process in this study. Specifically, the sample consists of two groups of college students, one from five universities in Zhejiang Province for online survey and the other from four colleges and universities located in Shaoxing City for paper-and-pencil survey. The measurement scales for entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurial intention are presented with specific items listed. Reliability analysis and validity analysis, consisting of EFA and CFA, were conducted, and the results suggested that all the scales have sound reliability and validity. The data collected do not suffer from common method bias.

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Chapter 4: Results

This chapter describes the data analysis results, including descriptive statistics of the sample, correlation analysis, variance analyses and hypothesis testing results. These results will be analyzed in Chapter 5.

4.1 Descriptive statistics of the sample

4.1.1 Background of the sample

In this study, frequency was calculated for gender, grade, major, and membership of student association(s). As shown in Table 4.1, “female” respondents are 70.29% while “male” respondents are only 29.71%; in terms of grade, there were relatively more “seniors” in the sample, with a percentage of 32.37%; as to major, the percentage of respondents majoring in “International Economic Management” was 42.15%; and regarding membership of student association(s), 52.17% of the respondents were members of certain student association(s) and the remaining 47.83% of the sample had no membership affiliation.

Table 4.1 Frequency analysis statistics

Name	Option	Frequency	%	Cumulative %
Gender	Male	246	29.710	29.710
	Female	582	70.290	100.000
Grade	Freshman	218	26.329	26.329
	Sophomore	158	19.082	45.411
	Junior	184	22.222	67.633
	Senior	268	32.367	100.000
Major	E-commerce	96	11.594	11.594
	Business administration	77	9.300	20.894
	International economic management	349	42.150	63.043
	International trade	144	17.391	80.435
	Cross-border e-commerce	37	4.469	84.903
	Logistics management	125	15.097	100.000
Membership of student association(s)	Yes	432	52.174	52.174
	No	396	47.826	100.000
Total		828	100.0	100.0

4.1.2 Descriptive statistics of the sample

The descriptive statistics of the variables include means, standard deviations, skewness, and kurtosis, based on which the basic level of the variables and the distribution of the data are presented.

As can be seen from the Table 4.2 below, the statistical analysis results of the data for each variable contained in the questionnaire include the sample size, mean, standard deviation, skewness, and kurtosis, which were used to verify that the information obtained from the survey followed a normal distribution. Whether the data were normally distributed or not would have a critical impact on the subsequent analysis. Kline (1998) suggests that when the absolute value of skewness is less than 3 and the absolute value of kurtosis is less than 10, the sample is essentially normally distributed. The results of the formal sample in Table 4.2 show that the absolute values of skewness - all less than 3 - and kurtosis - all less than 10 - for each variable met the conditions of a normal distribution, indicating that each variable was able to obey a normal distribution.

Table 4.2 Descriptive statistics of the variables

Variable	Sample size	Mean	S.D.	Skewness	Kurtosis
Entrepreneurial experiences	828	2.062	1.042	0.640	-0.701
Entrepreneurial traits	828	3.153	0.865	0.628	6.108
Entrepreneurial attitudes	828	3.669	0.782	-0.396	-0.323
Entrepreneurial environment	828	3.372	0.799	-0.156	-0.486
Entrepreneurship education	828	3.254	0.814	-0.253	-0.300
Entrepreneurial intention	828	2.940	0.863	-0.108	-0.679

4.2 Correlation analysis

In the previous section, the structural dimensions and the corresponding items were determined through validity and reliability tests. The means of the items of each variable were calculated as the scores of each dimension, and then correlation analysis was performed. The correlation analysis was mainly aimed at studying the correlations between variables, and the correlation coefficient fell in the range between -1 and 1. The larger the absolute value, the stronger the correlations between variables. Qiu (2006) proposed a detailed classification of Pearson's simple correlation coefficient $|r| = 1$, perfectly correlated; $0.70 \leq |r| < 0.99$, highly correlated; $0.40 \leq |r| < 0.69$, moderately correlated; $0.10 \leq |r| < 0.39$, lowly correlated; and $|r| < 0.10$, weakly or not correlated.

Table 4.3 shows that the correlations between entrepreneurial intention and entrepreneurial

experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, and entrepreneurship education were investigated using correlation analysis, and the Pearson correlation coefficient was used to indicate the strength of the correlations. The analysis revealed that: Entrepreneurial intention was significantly correlated with each of the five items, namely entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, and entrepreneurship education. The correlation coefficients were 0.521, 0.395, 0.661, 0.425, 0.354 and were all greater than 0. This means that entrepreneurial intention was significantly and positively related to each of the five items, namely entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, and entrepreneurship education.

Table 4.3 Correlation analysis and discriminant validity

	Mean S.D.	Entrepreneurial experiences	Entrepreneurial traits	Entrepreneurial attitudes	Entrepreneurial environment	Entrepreneurship education	Entrepreneurial intention
Entrepreneurial experiences	2.0621.042	0.785					
Entrepreneurial traits	3.1530.865	0.267***	0.754				
Entrepreneurial attitudes	3.6690.782	0.471***	0.189***	0.732			
Entrepreneurial environment	3.3720.799	0.237***	0.380***	0.211***	0.731		
Entrepreneurship education	3.2540.814	0.147***	0.303***	0.110**	0.357***	0.722	
Entrepreneurial intention	2.9400.863	0.521***	0.395***	0.661***	0.425***	0.354***	0.732

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

4.3 Variance analyses

4.3.1 Variance analysis by gender

Independent samples *t*-test (*t*-test) was used to investigate the differences between respondents of different genders across six variables: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education, and entrepreneurial intention, and the results are presented in Table 4.4 below. There were no significant differences ($p > .05$) in entrepreneurial environment and entrepreneurship education between respondents of different genders. In other words, male respondents and female respondents had consistent views of entrepreneurial environment and entrepreneurship education. There were significant differences ($p < .05$) in the other four variables: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurial intention between respondents of different genders, implying that male respondents and female respondents exhibited inconsistent patterns in these four variables. Specifically, the differences in entrepreneurial experiences between respondents of different genders were found to be significant at the 0.01 level ($t = 2.789$, $p = .006$). A comparison shows that the mean of male respondents (2.22 points) was significantly higher than for female respondents (1.99 points).

Table 4.4 *T*-test analysis results of each variable by gender

	Gender (mean ± standard deviation)		*t*	*p*
	Male (*n*=246)	Female (*n*=582)		
Entrepreneurial experiences	2.224±1.114	1.994±1.004	2.789	.006**
Entrepreneurial traits	3.289±0.851	3.095±0.865	2.956	.003**
Entrepreneurial attitudes	3.761±0.779	3.630±0.781	2.198	.028*
Entrepreneurial environment	3.424±0.835	3.350±0.783	1.218	.224
Entrepreneurship education	3.204±0.835	3.275±0.805	-1.152	.250
Entrepreneurial intention	3.115±0.866	2.867±0.852	3.812	.000***

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

The statistical differences in entrepreneurial traits ($t = 2.956$, $p = .003$) were significant at the level of 0.01 between respondents of different genders. A comparison of the differences revealed that the mean for males (3.29 points) was significantly higher than the mean for females (3.10 points).

The statistical differences in entrepreneurial attitudes ($t = 2.198$, $p = .028$) were significant at the level of 0.05 between respondents of different genders. A comparison of the differences revealed that the mean for males (3.76 points) was significantly higher than the mean for females (3.63 points).

The statistical differences in entrepreneurial intention (t = 3.812, p = .000) were significant at the level of 0.001 between respondents of different genders. A comparison of the differences revealed that the mean for males (3.12 points) was significantly higher than the mean for females (2.87 points).

In summary, there were no significant differences between respondents of different genders in two variables: entrepreneurial environment and entrepreneurship education. Besides, there were significant differences between respondents of different genders in four items: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes and entrepreneurial intention.

4.3.2 Variance analysis by grade

Variance analysis (full name: one-way analysis of variance abbreviated as one-way ANOVA) was performed to investigate the difference between respondents of different grades in six variables: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education, and entrepreneurial intention, and the results are presented in Table 4.5 below. There were significant differences (p < .05) in all the six variables between respondents in different grades. In other words, respondents in different grades exhibited different patterns in the six variables.

Table 4.5 Variance analysis results of each variable by grade

	Grade (mean ± standard deviation)				F	p
	Freshmen (n=218)	Sophomores (n=158)	Juniors (n=184)	Seniors (n=268)		
Entrepreneurial experiences	1.528 ± 0.646	2.172 ± 1.107	2.090 ± 1.159	2.413 ± 1.010	33.396	.000***
Entrepreneurial traits	3.352 ± 0.836	3.102 ± 0.859	3.006 ± 0.885	3.121 ± 0.854	6.009	.000***
Entrepreneurial attitudes	3.830 ± 0.534	3.488 ± 0.787	3.307 ± 0.856	3.893 ± 0.784	29.092	.000***
Entrepreneurial environment	3.624 ± 0.726	3.269 ± 0.835	3.165 ± 0.820	3.370 ± 0.769	12.706	.000***
Entrepreneurship education	3.470 ± 0.766	3.241 ± 0.723	3.220 ± 0.826	3.109 ± 0.862	8.259	.000***
Entrepreneurial intention	3.100 ±0.676	2.888 ± 0.893	2.717 ± 0.954	2.995 ± 0.886	7.293	.000***

Note: * p < .05 ** p < .01 *** p < .001

The statistical differences in entrepreneurial experiences (F = 33.396, p = .000) were significant at the level of 0.001 between respondents of different grades. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial experiences of sophomore respondents was higher than that of freshmen respondents; the mean score of entrepreneurial experience of the junior respondents was higher

than that of freshmen respondents; the mean score of entrepreneurial experiences of the senior respondents was higher than that of freshmen respondents; the mean score of entrepreneurial experiences of the senior respondents was higher than that of sophomore respondents; and the mean score of entrepreneurial experiences of the senior respondents was higher than that of junior respondents.

The statistical differences in entrepreneurial traits (F = 6.009, p = .000) were significant at the level of 0.001 between respondents of different grades. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial traits of freshman respondents was greater than that of sophomore respondents; the mean score of entrepreneurial traits of freshman respondents was greater than that of junior respondents; and the mean score of entrepreneurial traits of freshman respondents was greater than that of senior respondents.

The statistical differences in entrepreneurial attitudes (F = 29.092, p = .000) were significant at the level of 0.001 between respondents of different grades. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial attitudes of freshman respondents was greater than that of sophomore respondents; the mean score of entrepreneurial attitudes of freshman respondents was greater than that of junior respondents; the mean score of entrepreneurial attitudes of sophomore respondents was greater than that of junior respondents; the mean score of entrepreneurial attitudes of senior respondents was greater than that of sophomore respondents; and the mean score of entrepreneurial attitudes of senior respondents was greater than that of junior respondents.

The statistical differences in entrepreneurial environment (F = 12.706, p = .000) were significant at the level of 0.001 between respondents of different grades. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial environment of freshman respondents was greater than that of sophomore respondents; the mean score of entrepreneurial environment of freshman respondents was greater than that of junior respondents; the mean score of entrepreneurial environment of freshman respondents was greater than that of senior respondents; and the mean score of entrepreneurial environment of senior respondents was greater than that of junior respondents.

The statistical differences in entrepreneurship education (F = 8.259, p = .000) were significant at the level of 0.001 between respondents of different grades. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurship education of freshman respondents was greater than that of sophomore

respondents; the mean score of entrepreneurship education of freshman respondents was greater than that of junior respondents; and the mean score of entrepreneurship education of freshman respondents was greater than that of senior respondents.

The statistical differences in entrepreneurial intention (F = 7.293, p = .000) were significant at the level of 0.001 between respondents of different grades. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial intention of freshman respondents was greater than that of sophomore respondents; the mean score of entrepreneurial intention of freshman respondents was greater than that of junior respondents; and the mean score of entrepreneurial intention of senior respondents was greater than that of junior respondents.

In summary, there were significant differences among respondents of different grades across all the variables: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education, and entrepreneurial intention.

4.3.3 Variance analysis by major

Variance analysis (one-way ANOVA) was performed to investigate the differences between respondents of different majors in the six variables: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education, and entrepreneurial intention, and the results are presented in Table 4.6 below. There were no significant differences (p > .05) in entrepreneurial environment and entrepreneurial intention among respondents of different majors. In other words, respondents in different majors exhibited consistent patterns in entrepreneurial environment and entrepreneurial intention. Besides, there were significant differences (p < .05) in entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurship education among respondents in different majors. In other words, respondents of different majors exhibited different patterns in entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurship education.

Table 4.6 Variance analysis results of each variable by major

	Major (mean ± standard deviation)						*F*	*p*
	E-commerce(*n*=96)	Business Administration (*n*=77)	International Economic Management (*n*=349)	International Trade (*n*=144)	Cross-border E-commerce (*n*=37)	Logistics Management (*n*=125)		
Entrepreneurial experiences	1.951 ± 1.083	2.526 ± 0.931	2.117 ± 1.009	2.224 ± 1.160	1.635 ± 0.807	1.650 ± 0.900	9.801	.000***
Entrepreneurial traits	3.031 ± 0.782	3.048 ± 0.724	3.206 ± 0.824	3.059 ± 0.901	3.590 ± 0.630	3.139 ± 1.072	3.150	.008**
Entrepreneurial attitudes	3.652 ± 0.831	4.118 ± 0.576	3.658 ± 0.798	3.562 ± 0.844	3.661 ± 0.620	3.561 ± 0.690	6.315	.000***
Entrepreneurial environment	3.337 ± 0.771	3.378 ± 0.678	3.412 ± 0.798	3.259 ± 0.846	3.574 ± 0.716	3.356 ± 0.852	1.267	.276
Entrepreneurship education	3.372 ± 0.814	2.915 ± 0.922	3.348 ± 0.781	3.130 ± 0.811	3.344 ± 0.984	3.225 ± 0.718	4.916	.000***
Entrepreneurial intention	3.045 ± 0.851	2.920 ± 0.672	2.992 ± 0.894	2.840 ± 0.985	3.147 ± 0.643	2.783 ± 0.771	2.198	.053

Note: * p < .05 ** p < .01 *** p < .001

The statistical differences in entrepreneurial experiences (F = 9.801, p = .000) were significant at the level of 0.01 among respondents in different majors. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial experiences of respondents majoring in Business Administration was higher than that of respondents majoring in E-Commerce; the mean score of entrepreneurial experiences of respondents majoring in International Trade was higher than that respondents majoring in E-commerce; the mean score of entrepreneurial experiences of respondents majoring in E-commerce was higher than that of respondents majoring in Logistics Management; the mean score of entrepreneurial experiences of respondents majoring in Business Administration was higher than that of respondents majoring in International Economic Management; the mean score of entrepreneurial experiences of respondents majoring in Business Administration was higher than that of respondents majoring in International Trade; the mean score of entrepreneurial experience of respondents majoring in Business Administration was higher than that of respondents majoring in Cross-border E-commerce; the mean score of entrepreneurial experiences of respondents majoring in Business Administration was higher than that of respondents majoring in Logistics Management; the mean score of entrepreneurial experiences of respondents majoring in International Economic Management was higher than that of respondents majoring in Cross-border E-commerce; the mean score of entrepreneurial experiences of respondents majoring in International Economic Management was higher than that of respondents majoring in Logistics Management; the mean score of entrepreneurial experiences of respondents majoring in International Trade was higher than that of respondents majoring in Cross-border E-commerce; and the mean score of entrepreneurial experiences of respondents majoring in International Trade was higher than that of respondents majoring in Logistics Management.

The statistical differences in entrepreneurial traits (F = 3.150, p = .008) were significant at the level of 0.01 among respondents in different majors. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in E-Commerce; the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in Business Administration; the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in International Economic Management; the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in

Business Administration; the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in International Economic Management; the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in International Trade; and the mean score of entrepreneurial traits of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in Logistics Management.

The statistical differences in entrepreneurial attitudes ($F = 6.315$, $p = .000$) were significant at the level of 0.01 among respondents in different majors. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurial attitudes of respondents majoring in Business Administration was higher than that of respondents majoring in E-Commerce; the mean score of entrepreneurial attitudes of respondents majoring in Business Administration was higher than that of respondents majoring in International Economic Management; the mean score of entrepreneurial attitudes of respondents majoring in Business Administration was higher than that of respondents majoring in International Trade; the mean score of entrepreneurial attitudes of respondents majoring in Business Administration was higher than that of respondents majoring in E-Commerce; and the mean score of entrepreneurial attitudes of respondents majoring in Business Administration was higher than that of respondents majoring in Logistics Management.

The statistical differences in entrepreneurship education ($F = 4.916$, $p = .000$) were significant at the level of 0.01 among respondents in different majors. A comparison of the means of the groups with significant differences showed the following results: the mean score of entrepreneurship education of respondents majoring in E-Commerce was higher than that of respondents majoring in Business Administration; the mean score of entrepreneurship education of respondents majoring in E-Commerce was higher than that of respondents majoring in International Trade; the mean score of entrepreneurship education of respondents majoring in International Economic Management was higher than that of respondents majoring in Business Administration; the mean score of entrepreneurship education of respondents majoring in Cross-border E-commerce was higher than that of respondents majoring in Business Administration; the mean score of entrepreneurship education of respondents majoring in Logistics Management was higher than that of respondents majoring in Business Administration; and the mean score of entrepreneurship education of respondents majoring in International Economic Management was higher than that of respondents majoring in International Trade.

In summary, there were no significant differences among respondents in different majors regarding entrepreneurial environment and entrepreneurial intention. Besides, there were significant differences among respondents in different majors regarding entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurship education.

4.3.4 Variance analysis by membership in student association(s)

Independent samples t-test was used to investigate the differences among respondents with or without membership of student association(s) in six variables: entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, entrepreneurship education, and entrepreneurial intention, and the results are presented in Table 4.7 below. There were no significant differences (p >.05) in entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, and entrepreneurial intention among respondents with or without membership of student association(s). In other words, respondents with or without membership of student association(s) exhibited consistent patterns in the aforementioned five variables. Besides, there were significant differences (p <.05) in entrepreneurship education among respondents with or without membership of student association(s). In other words, respondents with or without membership of student association(s) exhibited different patterns in entrepreneurship education. A detailed analysis revealed that the differences in entrepreneurship education between respondents with membership of student association(s) and those without membership of student association(s) were significant at the level of 0.01 (t = 2.646，p = .008). A detailed comparison of differences showed that the mean score of respondents with membership of student association(s) was 3.33 points, which was significantly higher than the mean score (3.18 points) of those without membership of student association(s).

In summary, there were no significant differences between respondents with membership of student association(s) and those without membership of student association(s) regarding entrepreneurial experiences, entrepreneurial traits, entrepreneurial attitudes, entrepreneurial environment, and entrepreneurial intention. Besides, there were significant differences between respondents with membership of student association(s) and those without in terms of entrepreneurship education.

Table 4.7 T-test analysis results of each variable by membership of student association(s)

	Membership of student association (mean ± standard deviation)		*t*	*p*
	Yes(*n*=432)	No (*n*=396)		
Entrepreneurial experiences	2.029±1.045	2.098±1.040	-0.959	.338
Entrepreneurial traits	3.194±0.895	3.107±0.830	1.456	.146
Entrepreneurial attitudes	3.700±0.751	3.635±0.815	1.183	.237
Entrepreneurial environment	3.416±0.816	3.324±0.778	1.668	.096
Entrepreneurship education	3.325±0.788	3.176±0.836	2.646	.008**
Entrepreneurial intention	2.992±0.874	2.884±0.849	1.810	.071

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

4.4 Hypothesis testing

In this study, AMOS 23 was used for SEM analysis. Specifically, a structural equation model was constructed with entrepreneurial experiences, entrepreneurial traits, entrepreneurial environment and entrepreneurship education as independent variables, entrepreneurial attitudes as mediator and entrepreneurial intention as dependent variable. The constructed model is shown in Figure 4.1 and adjusted structural equation model in Figure 4.2 below.

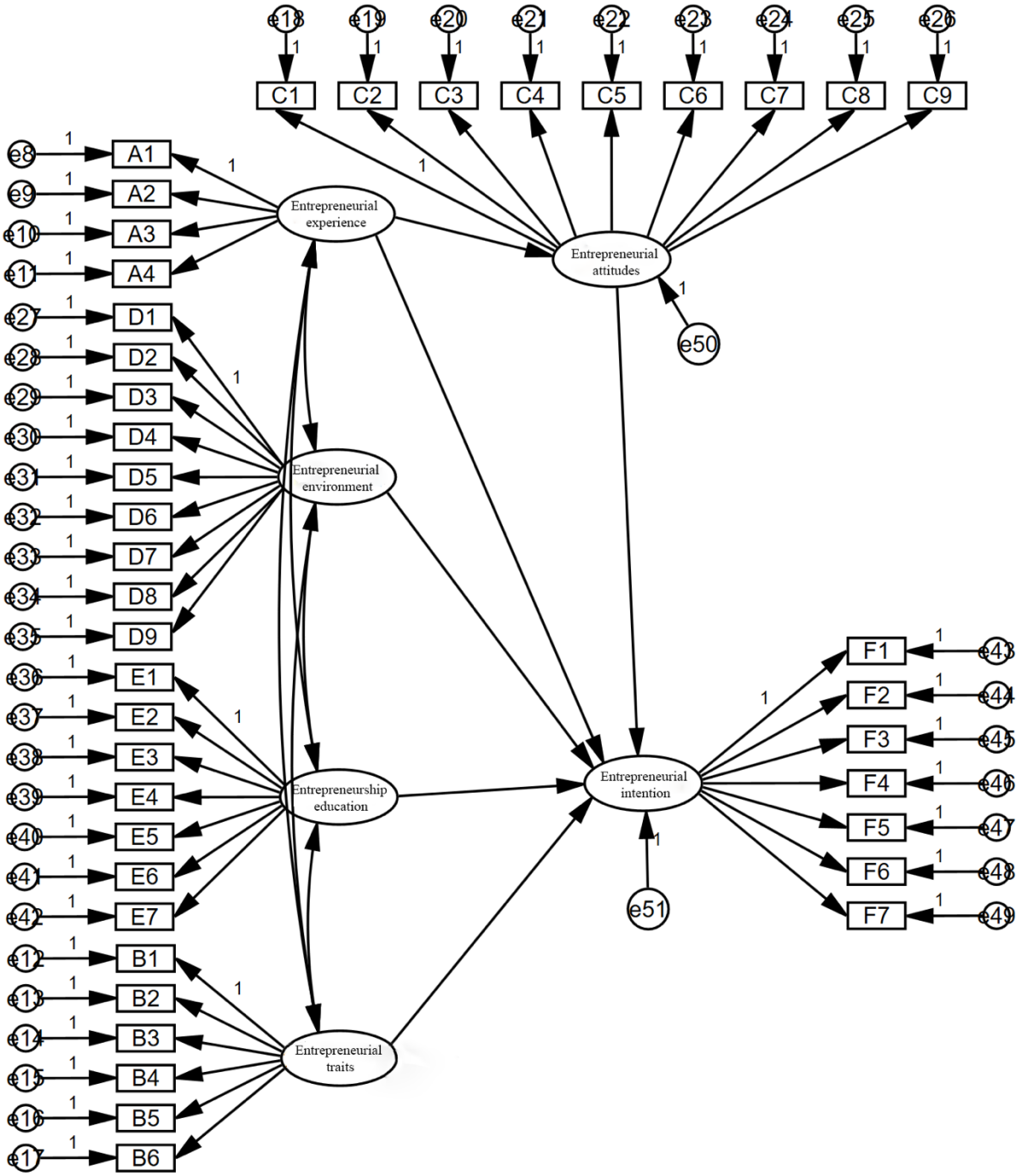


Figure 4.1 Theoretical diagram of structural equation model

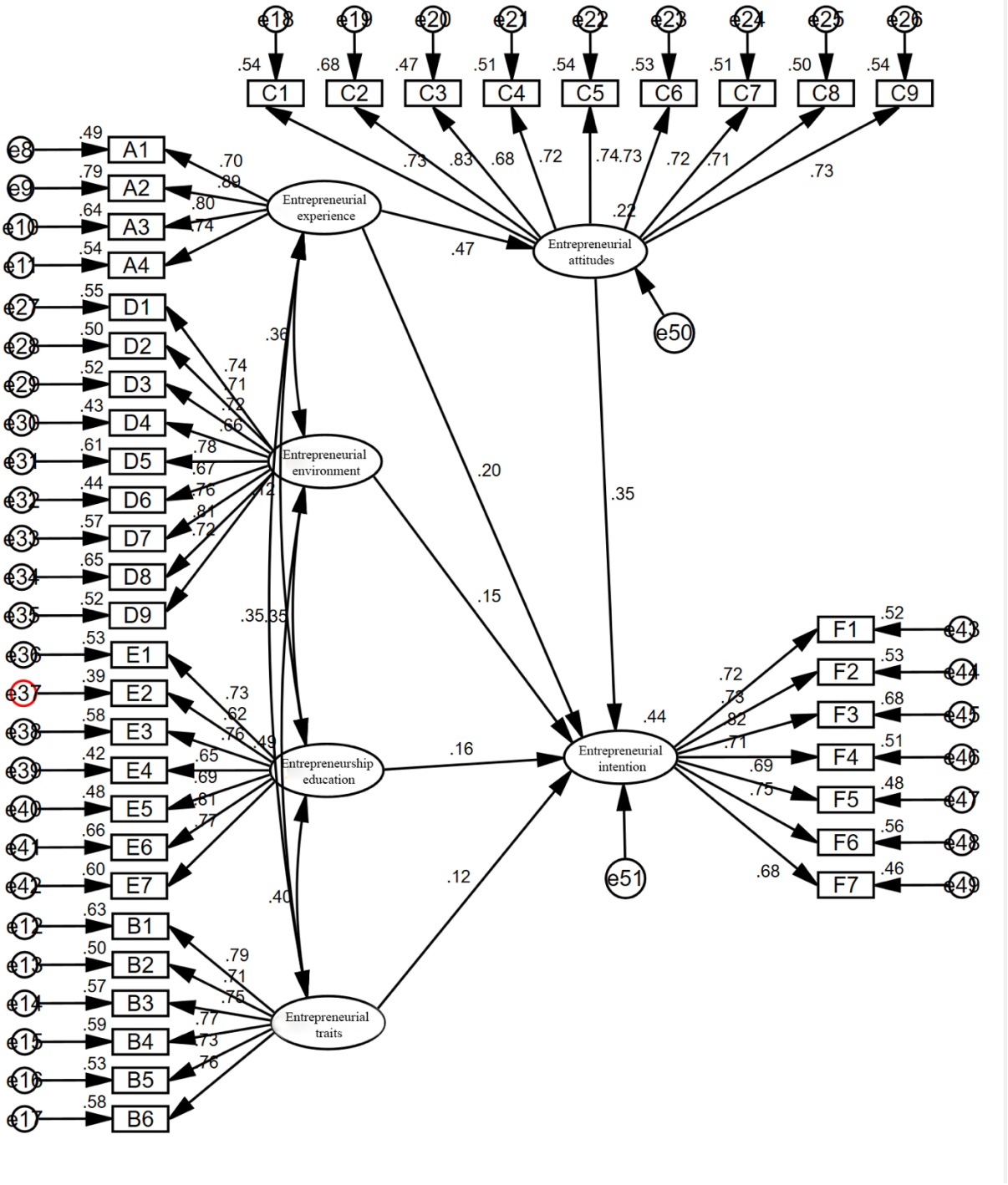


Figure 4.2 Operating diagram of structural equation model

Table 4.8 below shows that CMIN/DF was 1.873; GFI, AGFI, NFI, TLI, IFI and CFI were all above 0.9; RMSEA was 0.032, which is lower than 0.08; SRMR was 0.032, which is lower than 0.05. All the fit indices met the criteria for general SEM studies. Therefore, the model can be considered to have sound goodness-of-fit.

Table 4.8 Structural equation model fit

Fit index	Acceptable range	Value
CMIN		1511.586
DF		807
CMIN/DF	<5	1.873
GFI	>0.9	0.922
AGFI	>0.9	0.913
RMSEA	<0.08	0.032
IFI	>0.9	0.962
NFI	>0.9	0.921
TLI(NNFI)	>0.9	0.959
CFI	>0.9	0.961
SRMR	<0.05	0.032

Table 4.9 below shows that entrepreneurial experiences were significantly positively related to entrepreneurial attitudes ($\beta = 0.473$, $p < .001$); entrepreneurial experiences were significantly positively related to entrepreneurial intention ($\beta = 0.205$, $p < .001$); entrepreneurial environment was significantly positively related to entrepreneurial intention ($\beta = 0.152$, $p < .001$); entrepreneurship education was significantly positively related to entrepreneurial intention ($\beta = 0.162$, $p < .001$); entrepreneurial traits were significantly positively related to entrepreneurial intention ($\beta = 0.119$, $p < .01$); and entrepreneurial attitudes were significantly positively related to entrepreneurial intention ($\beta = 0.355$, $p < .001$).

Table 4.9 Structural equation model path coefficients

			Estimate	S.E.	C.R.	P	Standardized coefficient	R-squared
Entrepreneurial attitudes	<---	Entrepreneurial experiences	0.469	0.041	11.303	***	0.473	0.224
Entrepreneurial intention	<---	Entrepreneurial experiences	0.203	0.040	5.062	***	0.205	0.437
Entrepreneurial intention	<---	Entrepreneurial environment	0.152	0.039	3.925	***	0.152	
Entrepreneurial intention	<---	Entrepreneurship education	0.167	0.037	4.482	***	0.162	
Entrepreneurial intention	<---	Entrepreneurial traits	0.105	0.035	2.970	0.003	0.119	
Entrepreneurial intention	<---	Entrepreneurial attitudes	0.354	0.039	9.031	***	0.355	

4.5 Hypothesis testing results

In this study, reliability and validity tests were conducted, and the results indicated sound reliability and validity of the questionnaire. A further analysis of the influence of the background of respondents on each variable showed that there were significant differences in entrepreneurial intention among respondents of different genders and in different grades. Specifically, the entrepreneurial intention of male respondents was higher than that of female; the entrepreneurial intention of freshman students was the highest, followed by senior students, and the entrepreneurial intention of sophomore and junior students was relatively low. Finally, SEM was performed to test the hypotheses. Hypothesis testing results are presented in Table 4.10 below.

Table 4.10 Hypotheses testing results

No.	Path			Coefficient	Testing Result
H1	Entrepreneurial attitudes	←-	Entrepreneurial experiences	0.473***	Supported
H2	Entrepreneurial intentions	←-	Entrepreneurial experiences	0.205***	Supported
H3	Entrepreneurial intentions	←-	Entrepreneurial environment	0.152***	Supported
H4	Entrepreneurial intentions	←-	Entrepreneurship education	0.162***	Supported
H5	Entrepreneurial intentions	←-	Entrepreneurial traits	0.119**	Supported
H6	Entrepreneurial intentions	←-	Entrepreneurial attitudes	0.355***	Supported
H7	Entrepreneurial experiences - Entrepreneurial attitudes - Entrepreneurial intentions mediation effect			0.168***	Supported

Based on the hypothesis testing results, the tested model of influencing factors of Chinese college students' entrepreneurial intentions is shown in Figure 4.3.

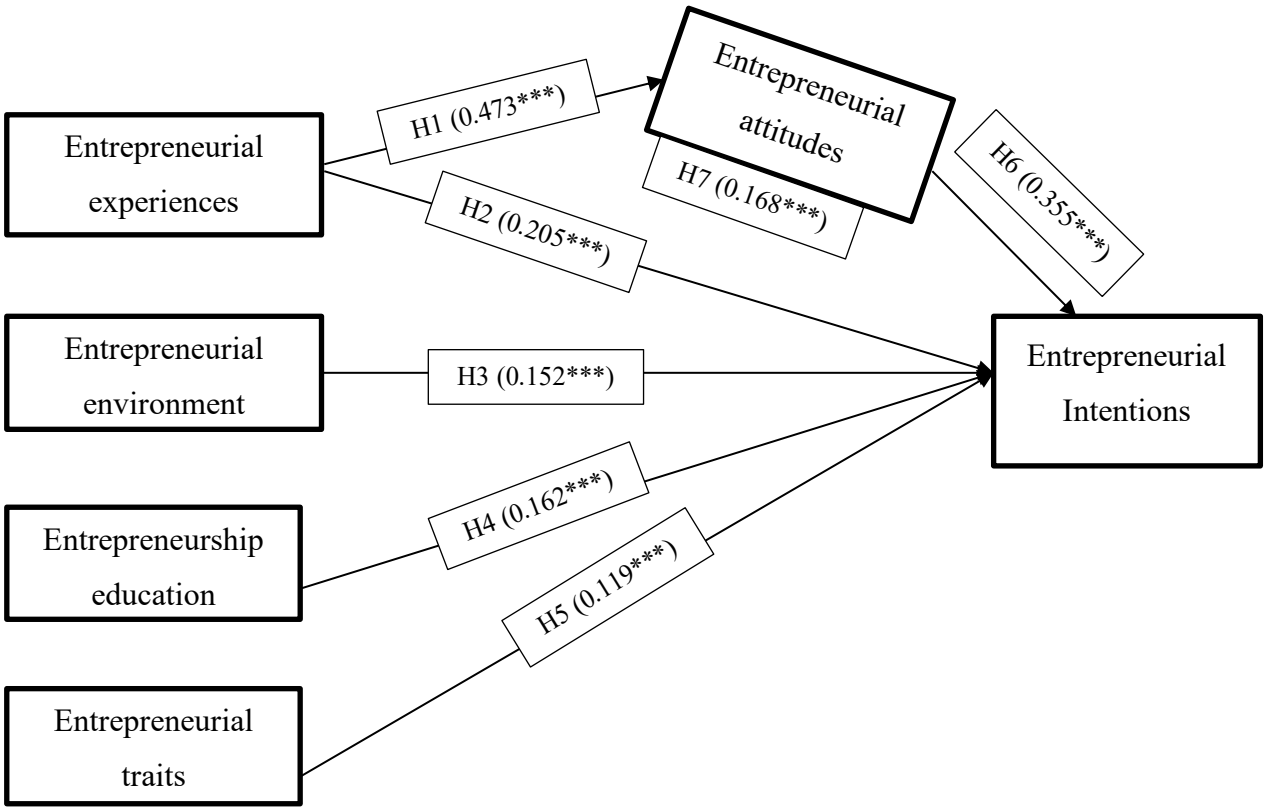


Figure 4.3 The tested model of influencing factors of Chinese college students' entrepreneurial intentions in the sample surveyed

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Chapter 5: Findings, Conclusions and Prospects

Based on the results in the previous chapter, this chapter will discuss the research findings, implications, limitations, and prospects.

5.1 Overview of the study

This study used a sample of 828 from the business schools of nine universities in Zhejiang Province to explore the influencing factors of college students' entrepreneurial intention. The scales used to measure the key variables are all mature scales with sound reliability and validity. Descriptive statistics, correlation analysis and variance analysis were conducted on the collected data using SPSS, and the hypotheses were tested via SEM using AMOS. All the hypotheses were supported, validating the proposed model of the influencing factors of college students' entrepreneurial intention.

5.2 Variance analysis results among groups

5.2.1 Male students reported higher entrepreneurial intentions than female students.

In this study, the entrepreneurial intentions of male students (mean = 3.115; SD = 0.866) were significantly higher than that of female students (mean = 2.867; SD = 0.852). This finding is consistent with the studies conducted by Lo et al. (2012), who investigated 411 engineering students in Hong Kong and found that entrepreneurship education did not have the same amount of influence on the entrepreneurial intentions of the two genders. A meta-analysis also reveals that men have higher entrepreneurial intentions compared to women though such differences do not suffice to explain the substantial differences in entrepreneurial behaviour (Haus et al., 2013). A similar trend also exists in academia, which Miranda et al. (2017) attribute to the existence of implicit barriers. Empirical evidence from Bulgaria arrived at a similar conclusion (Yordanova & Tarrazon, 2010). Santos et al. (2016) attribute women's less favorable entrepreneurial intentions to social legitimacy.

Yet not all studies suggest higher entrepreneurial intentions among male students compared to female students. Díaz-García and Jiménez-Moreno (2010) found a lack of gender difference

in entrepreneurial intentions partly because respondents of both genders regard feminine attributes to be essential for successful entrepreneurship. Yukongdi and Lopa (2017) uncovered similar entrepreneurial intention between women and men. However, men were found to be mainly driven by the need for achievement while women regard job autonomy a crucial factor. Quite interestingly, the qualitative study conducted by J. Li et al. (2020) among second-generation female entrepreneurs in family-owned businesses in China reveals that women entrepreneurs are driven more by intrinsic needs such as self-actualization. The lack of gender difference in entrepreneurial intention is also a reality in Chile (Contreras-Barraza et al., 2021).

Though existing literature has come to different and even opposite findings, most studies recognize higher levels of entrepreneurial intentions among males compared to females. This is also in line with the traditional culture of the Chinese society. China is a country heavily influenced by Confucianism, which dictates that women should assume a domestic and submissive role while men should pursue career success (Rarick, 2007). Although more and more women are entering the workforce and creating value for the society, gender inequality still exists and social expectations for men and women are yet to be changed further (Warnecke, 2013). Therefore, women's backward position in this entrepreneurship race could be partly explained by the different social expectations resulting from lingering traditional values (Santos et al., 2016; Warnecke, 2013).

Based on the above analysis, this study agrees with the suggestions provided by Lo et al. (2012) that universities should put more emphasis on female entrepreneurship and provide female entrepreneurial models to increase entrepreneurial intentions among female students particularly considering that the percentage of female students in business-related majors (70.29%) far outweigh that of male students (29.71%).

5.2.2 Freshmen reported the higher entrepreneurial intentions than students of other grades.

This study revealed that the entrepreneurial intentions of freshmen (mean = 3.100; SD = 0.676) was higher than that of sophomores (mean = 2.888; SD = 0.893), juniors (mean = 2.717; SD = 0.954) and seniors (mean = 2.995; SD = 0.886) which appears to indicate a disappointing trend as the entrepreneurial intentions of college students seem to be decreasing as their college journey progresses. But from an opposite perspective, it shows that younger people are demonstrating higher levels of entrepreneurial intentions, indicating that the "mass entrepreneurship and innovation" policy has been effective in fostering an encouraging social

environment.

Aloulou (2016) attributed the high levels of entrepreneurial intentions among freshman students in Saudi Arabia to their achievement and innovation attitudes. His finding is also relevant to this study as these two characteristics belong to entrepreneurial traits, which have been found to consist of need for achievement, entrepreneurial alertness, risk tolerance and internal locus of control (Y. W. Du, 2015; Karabulut, 2016). In this study, the freshmen respondents scored higher (mean = 3.352; SD = 0.836) than sophomores (mean = 3.102; SD = 0.859), juniors (mean = 3.006; SD = 0.885) and seniors (mean = 3.121; SD = 0.854) in entrepreneurial traits.

In addition to need for achievement, freshmen may also have higher risk tolerance due to their inadequate exposure to entrepreneurial experiences or entrepreneurial knowledge. As the Chinese saying goes: "Newborn calves are not afraid of tigers." The lack of knowledge and experience may cause freshmen students to be unaware, or at least not adequately aware, of the risks involved in starting a business. As a result, they may underestimate the difficulty of entrepreneurship and become overly confident, hence their high levels of risk tolerance.

5.2.3 Differences in entrepreneurial experiences, entrepreneurial traits and entrepreneurial attitudes by major

The ANOVA results showed that there are significant differences in entrepreneurial experiences ($F = 9.801$; $p < .01$), entrepreneurial traits ($F = 3.150$，$p < .01$), entrepreneurial attitudes ($F = 6.315$; $p < .01$) and entrepreneurship educations ($F = 4.916$，$p = .000$) among respondents of different majors.

Results of between-groups comparisons revealed that respondents majoring in Business Administration (mean = 2.526), International Trade (mean = 2.224) and International Economic Management (mean = 2.117) had higher mean scores in entrepreneurial experiences compared to those majoring in E-commerce (mean = 1.951), Logistics Management (mean = 1.650) and Cross-border E-commerce (mean = 1.635). This reflects the necessity for universities to carry out more entrepreneurial activities, provide more internship opportunities, and organize more entrepreneurship training session for students majoring in E-commerce, Cross-border E-commerce, and Logistics Management to enrich their entrepreneurial experiences.

A comparison of the mean scores by major showed that respondents majoring in cross-border E-commence (mean = 3.590; SD = 0.630) exhibited significantly stronger entrepreneurial traits compared to all the other five majors. Cross-border E-commence (CBEC)

is a relatively new type of business characterized by the application of Internet thinking in the "Internet + foreign trade" industry (Yang & Luo, 2020). It relies heavily on information technology, big data, and foreign language proficiency (Jun et al., 2021). CBEC in the broad sense refers to "the application of Internet technology in international trade" (Jun et al., 2021, p. 221). Its name and definition already encompass E-commerce and International Trade. Undoubtedly, students majoring in CBEC must have both the potential and the motivation to master all these skills to pursue a career in CBEC. Hence their stronger entrepreneurial traits.

Results of between-groups comparisons revealed that respondents majoring in Business Administration (mean = 4.118; SD = 0.576) had higher mean scores in entrepreneurial attitudes compared to all the other five majors. This is in line with the reality in China. In fact, Innovation and Entrepreneurship has been a pathway under the Business Administration program. Yet recently, some universities in China have set up independent colleges of entrepreneurship such as the School of Entrepreneurship and Management of Shanghai Tech University. Some have offered master programs in entrepreneurship and innovation, such as the MSc Entrepreneurship and Innovation Management by University of Nottingham Ningbo China and the MSc in Business Innovation and Entrepreneurship by Lingnan University in Hong Kong. There is an emerging trend for colleges and universities to offer an independent undergraduate program in Entrepreneurship and Innovation, which is incubated from the Business Administration program. This indirectly reflects that students majoring in Business Administration tend to have more favorable attitudes towards entrepreneurship.

5.2.4 Differences in entrepreneurship education by student association membership

T test results indicated significant differences in entrepreneurship education between respondents with student association membership (mean = 3.325; SD = 0.788) and those without student association membership (mean = 3.176; SD = 0.836). Empirical research suggests that student association membership can nurture students' perceived feasibility toward entrepreneurial actions, and the activities carried out by student associations can help students develop their proactiveness and self-efficacy (Florin et al., 2007) as well as build strong networks. In a sense, a student association is a small society formed for a certain purpose. Students' involvement in such associations can help them develop an awareness of their own advantages and disadvantages. With that awareness and exposure, they can be more perceptive of the relevance of entrepreneurship education particularly to the development of their leadership skills (Amirianzadeh et al., 2011; Rosch & Collins, 2017) and interpersonal or

communication skills (Harper & Quaye, 2007), which are also important skills for entrepreneurship (Abbasi et al., 2015).

5.3 Discussion of the main findings of the study

Correlation analysis results showed that entrepreneurial intentions were positively related to each of the five variables: entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits, and entrepreneurial attitudes. Furthermore, hypotheses testing results turned out to support all the hypotheses. The relationships are discussed one by one in the following sections.

5.3.1 The entrepreneurial experiences of Chinese college students

Correlation analysis and SEM results both indicated that entrepreneurial experiences, as one of the four independent variables of the constructed Model of Chinese College Students' Entrepreneurial Intention, was significantly positively (β = 0.205, $p < .001$) related to entrepreneurial intention. This is in line with the findings of existing literature (Hudea et al., 2021; Le et al., 2012; Y. H. Liu, 2013; Miralles et al., 2016). Therefore, one of the effective ways to boost Chinese college students' entrepreneurial intention is to increase their entrepreneurial experiences. The data collected in this study reveal that Chinese college students generally have limited entrepreneurial experiences (male students: mean = 2.224, SD = 1.114; female students: mean = 1.994; SD = 1.004) compared to other variables.

As mentioned in Section 2.2.1, entrepreneurial experiences for college students mainly refer to their work or/and internship experience, membership in entrepreneurial groups and participation in entrepreneurial competitions (Agbim et al., 2022; Westhead & Wright, 1998; X. M. Zhu et al., 2019). Undoubtedly, universities should organize more activities to enable students to accumulate more entrepreneurial experiences.

However, enriching college students' entrepreneurial experiences is not the responsibility of universities alone. Families can also play a facilitating role. J. Y. Lu and Tao (2010) found that parents can positively influence children' entrepreneurial intention. They identified two reasons behind this. One is that children whose parents have entrepreneurial experiences tend to be more willing to take risks; the other is that children can learn from their parent's entrepreneurial experiences (Djankov et al., 2006; Dunn & Holtz-Eakin, 2000). As mentioned in the Introduction chapter of this thesis, Zhejiang Province is home to a large number of family

businesses. Thus, college students from such entrepreneurial families likely to be encouraged to take the initiative to engage in their family business operation and learn from their parents as a way to accumulate entrepreneurial experiences.

5.3.2 The mediating role of entrepreneurial attitudes

The hypotheses testing results indicated that H7 (*College students' entrepreneurial attitudes mediate the relationship between their entrepreneurial experiences and entrepreneurial intention*) was supported. In other words, entrepreneurial experiences not only directly influence entrepreneurial intention but also influence it by inducing entrepreneurial attitudes, and such mediation effect was found to take up 45% of the total effect.

As attitude is a strong predictor of intention, which is an antecedent of behavior (Ajzen, 1991), it is necessary and worthwhile to pay attention to the factors influencing entrepreneurial attitudes.

The data analysis results indicate that the mean scores of entrepreneurial attitudes (male students: mean = 3.761, SD = 0.779; female students: mean = 3.630, SD = 0.781) are the highest among all variables. However, the Model of the Entrepreneurial Intentions of Chinese College Students constructed in this thesis only identifies entrepreneurial experiences as a predictor of entrepreneurial attitudes, and the mean scores of entrepreneurial experiences were the lowest among all variables. It is worth exploring other factors contributing to entrepreneurial attitudes.

Y. F. Chen and Lai (2010) explored the factors influencing entrepreneurial attitudes with 792 tertiary-level business students at technological colleges and universities in Taiwan as a sample and identified personality traits and environmental cognition to be relevant factors. Jakubiak and Buchta (2016) investigated the factors determining entrepreneurial attitudes of students of economics and non-economics. The results of their study pointed to the relevance of entrepreneurship education in addition to entrepreneurial activities (entrepreneurial experiences). They also advised future researchers to explore the possible relevance of attitude towards self-employment, sensitivity to emerging opportunities in the vicinity and entrepreneurial family background. Bosma and Schutjens (2011) analyzed Global Entrepreneurship Monitor data to find an explanation to the regional and national differences in entrepreneurial attitude and entrepreneurial activity across 127 regions in 17 European countries. Their study uncovered three key components of entrepreneurial attitude: attitude toward failure in starting one's own business, which is identical to risk tolerance (Karabulut, 2016), self-assessment of personal capabilities to start a business and perceived start-up

opportunities.

More and further studies are to be carried out to test if the above factors are indeed determinants of entrepreneurial attitudes and if other factors exist that also have an influence on entrepreneurial attitudes, so as to shed light on effective strategies to foster favorable entrepreneurial attitudes among college students.

5.3.3 Entrepreneurial environment as a determinant of entrepreneurial intentions

Correlation analysis (r = 0.425) indicates that, in this sample, entrepreneurial environment is positively related to entrepreneurial intentions, and hypothesis testing using SEM ($\beta = 0.152$, $p < .001$) also suggested that entrepreneurial environment is significantly and positively associated with entrepreneurial intentions. This is consistent with existing research findings (Y. Chen, 2012; Grundstén, 2004; D. He, 2006; Y. Jiang, 2008; Niu, 2009; Q. Y. Yang, 2009). As mentioned in Section 2.3.3, entrepreneurial environment, in the context of this thesis, is composed of policy, financing and cultural dimensions (O. M. Li & Wu, 2017). This finding reminds stakeholders of the importance to foster a favorable environment for college student entrepreneurship.

Entrepreneurship policies can be classified into two categories: (1) initiatives and measures aimed at enhancing entrepreneurial attitudes and values; and (2) initiatives and measures aiming to enable potential entrepreneurs to develop decision-making skills critical for successful entrepreneurship (Rigby & Ramlogan, 2016). Y. J. Huang et al. (2021) constructed an SEM to examine the relationship between entrepreneurship policy and entrepreneurial intention based on the data collected from a sample of 384 college students from 22 universities in Guangdong Province, China. The results supported a positive association between entrepreneurship policy and entrepreneurial intention and uncovered the facilitating role of entrepreneurial practice in the positive influence of entrepreneurship policy on entrepreneurial intention. This is a demonstration of the old saying that “practice is the sole criterion for testing truth”. Introducing the right college student entrepreneurship policies is important, but it is not enough. Government authorities should also create favorable conditions for students to engage in entrepreneurial practice, by which they can truly understand and benefit from such policies.

Financing environment determines how easy or difficult it is for a college student to access the finance needed for starting a business. Nguyen (2020) argues that access to finance can only influence entrepreneurial intentions when combined with entrepreneurial behavioral control, which is derived from PBC as a determinant of intention under the TPB framework (Ajzen,

1991). Through an online survey of 2,124 students from seven universities in Austria, Schwarz et al. (2009) found that financial support for entrepreneurs has no impact on college students' entrepreneurial intentions in that country. Though financing difficulty may be a challenge for college students in China (Hong, 2011), it is not too much a problem in Zhejiang Province as the People' Government of Zhejiang Province has introduced targeted financing policies as for example the "Opinions of The People's Government of Zhejiang Province on Supporting Mass Entrepreneurship and Promoting Employment & Implementation" or the "Opinions of The People's Government of Zhejiang Province on Promoting High Quality Development of Innovation and Entrepreneurship to Create an Upgraded Version of "Mass Innovation and Entrepreneurship" to encourage college student entrepreneurship.

The cultural dimension of entrepreneurial environment, or cultural environment, can be a complicated concept. The idea of an entrepreneurial culture can overlap with the financing environment (Davis, 2002) or be considered too multi-dimensional to measure (Hayton & Cacciotti, 2013) or be regarded similar or intricately related to entrepreneurship education (M. Solesvik et al., 2014). To make a clear distinction, this thesis regards cultural environment in the context of college student entrepreneurship the encouragement or discouragement college students receive from their friends and relatives, or significant others (O. M. Li & Wu, 2017). This is identical to the dimension of "subjective norm" in the TPB model (Ajzen, 1991). As the TPB model suggests, subjective norm influences intention. In the same fashion, an entrepreneurial culture also influences entrepreneurial intention.

5.3.4 Entrepreneurship education as a determinant of entrepreneurial intentions

The correlation analysis ($r = 0.354$) indicates that entrepreneurship education in the sample is positively related to entrepreneurial intentions, and hypothesis testing using SEM ($\beta = 0.162$, $p < .001$) also suggests that entrepreneurship education is significantly positively associated with entrepreneurial intentions, which is consistent with existing research findings (Birdthistle et al., 2007; Naia et al., 2014a, 2014b; Otache et al., 2022; Pittaway & Cope, 2007; Soomro & Shah, 2021; Y. Zhang et al., 2014).

In fact, the importance of entrepreneurship education to entrepreneurial intentions has been acknowledged not only in China but also worldwide. In China, empirical studies with sample based in Hangzhou City (R. J. Zhu et al., 2022), Tianjin City (Y. F. Li, 2022) and even eight provinces of China (X. E. Zhang et al., 2018) all conclude that entrepreneurship education is significantly positively related to entrepreneurial intention. In the global context, empirical

evidence for the significance of entrepreneurship education on entrepreneurial intentions can be found in countries such as Pakistan (Sohu et al., 2022; Soomro & Shah, 2021), India (Anwar et al., 2022), Mexico (Boubker et al., 2022), Indonesia (Kusumojanto et al., 2020), the U. K. (Nabi et al., 2018) and other developing economies (Usman et al., 2022).

Given its importance, entrepreneurship education has been regarded one of the top priorities across the globe, including Europe, the US and China (Von Graevenitz et al., 2010; M. S. Zhou & Xu, 2012). Von Graevenitz et al. (2010) argue that the effect of entrepreneurship education lies in that it generates signals to students based on which students evaluate their entrepreneurial aptitude. J. Cui et al. (2021) found in their study that entrepreneurship education influenced college students' entrepreneurial intention by shaping their entrepreneurial mindset through enhanced entrepreneurial inspiration.

Despite the different pathways by which entrepreneurship education influences entrepreneurial intentions, it remains unclear how much of an influence entrepreneurship education has on the level of graduate entrepreneurship and whether it can help graduates become more effective entrepreneurs (Pittaway & Cope, 2007). Another thing worth noting is that the participation rate of entrepreneurship education in academic schools is much lower than that in secondary vocational schools (Ni & Ye, 2018). This points to the need to strengthen entrepreneurship education in academic colleges and universities.

How to effectively translate entrepreneurship education research into improved entrepreneurship education performance remains a question to be answered. Existing studies are overly focused on the evaluation of entrepreneurship education results, which are often context-specific (Naia et al., 2014b). For better generalization and a wider coverage, Naia et al. (2014a) call for more empirical research conducted in wider contexts with new theoretical propositions and this thesis is also an attempt to respond to this call.

More recent research has focused on the shift of entrepreneurship education from offline to online (Liguori & Winkler, 2020). This is a practical challenge and a trend facing universities in China given the persisting influences of the COVID-19 pandemic and the stringent pandemic prevention and control policies. Take the sample universities of this study for example. Due to the pandemic prevention and control requirements, students are not allowed to practice internship in enterprises for a long time and every time they return to campus, they are required to go through polymerase chain reaction (PCR) test once every day for five consecutive days in quarantine. As a compromise solution, entrepreneurship mentors from enterprises are invited to the campus upon approval by the pandemic prevention and control authority to teach entrepreneurship practice courses meant to be taught in enterprises throughout a whole semester

within a short and concentrated period. Given this heavy reliance on online education, universities and education authorities must think of better ways to deliver online entrepreneurship education to the desired effect.

Besides, there is also a need for colleges and universities to adopt a student-centered approach as students are the main agents of the educational process (Aparicio et al., 2019).

5.3.5 Entrepreneurial traits as predictors of entrepreneurial intentions

Correlation analysis (r = 0.395) indicated that entrepreneurial traits were positively related to entrepreneurial intentions, and hypothesis testing using SEM (β = 0.119, $p < .001$) also suggests that entrepreneurial traits are significantly positively associated with entrepreneurial intentions in the sample studied, which is consistent with existing research findings (M. A. Ahmed et al., 2022; P. Guo, 2011; Javan, 2014; Y. F. Luo et al., 2022; Qian, 2007).

Entrepreneurial traits are personality traits associated with entrepreneurship. They are generally believed to include the need for achievement, entrepreneurial alertness, risk tolerance, proactiveness, innovativeness and internal locus of control (Widjaya et al, 2021). Though personality traits refer to "an individual's characteristic patterns of thought, emotion, and behavior, together with the psychological mechanisms—hidden or not—behind those patterns", they do continue to change throughout a person's lifespan (Bleidorn et al., 2021). Damian et al. (2019) traced a sample of 1,795 people across a 50-year span and concluded that despite its stability at the trait and profile levels, personality is also malleable and changes towards greater maturity as people age.

The possibility of change of personality traits opens a new door for enhancing entrepreneurial intentions. However, Bleidorn et al. (2021) argue that the change in personality traits is often triggered by major life events related to love and work, which leaves little room for intervention before the specific processes and sources driving personality trait change are uncovered. Optimistically, L. P. Tan et al. (2021) investigated the impact of personality traits on social entrepreneurial intention and concluded that the formation of social entrepreneurial traits is attributable to entrepreneurship education and entrepreneurial experiences, both of which are positively related to entrepreneurial intentions. More relevantly, Jayawickreme et al. (2019) explored the directions for personality development using the Whole Trait Theory. They introduced the term "multipotency of personality" to describe the phenomenon where individuals manifest certain traits for the purpose of fulfilling specific goals (McCabe & Fleeson, 2016).

Based on the above analysis, universities, families, and the society at large – "it takes a whole village to raise a child" as the African saying goes – should try to foster an enabling environment where the entrepreneurial traits of college students are recognized and appreciated. Furthermore, entrepreneurship education programs should try to incorporate advanced research insights into personality interventions to facilitate personality development that are conducive to college student entrepreneurship.

5.3.6 Explanatory power of the model

Explanatory power refers to "the degree to which explanatory variables explain the variations of an endogenous variable" (Kang & Ahn, 2021, p. 159). It is generally measured by the coefficient of determination (R^2) (Shmueli & Koppius, 2011). According to the SEM results, the conceptual model proposed in this study explained 43.7% of the dependent variable (entrepreneurial intention). Hair et al. (2019) mentioned the guideline that the R^2 values of 0.75, 0.50 and 0.25 can be respectively considered substantial, moderate and weak (Hair et al., 2011; Henseler et al., 2014). By that standard, 43.7% is close to moderate and can be considered acceptable.

Nevertheless, the fact that the model has not reached substantial explanatory power indicates that the variables selected are not exhaustive. In other words, there are other variables that influence entrepreneurial intention as the literature review in Chapter 2 well proves. Based on the existing literature, other factors that may influence college students' entrepreneurial intention may include entrepreneurial self-efficacy (Fu et al., 2022; W. J. Li & Zhu, 2022; Naktiyok et al., 2010; Şahin et al., 2019; H. Zhao et al., 2005), TPB (L. H. Duan, 2021; H. M. Liao, 2010; Lin et al., 2022; Naia et al., 2017; Virasa et al., 2022) and entrepreneurial motivation (Liguori et al., 2020; Lin et al., 2022; Malebana, 2014), which open up avenues for future research.

5.4 Conclusions

In view of the research questions of this thesis and based on the discussion of the main findings, the following conclusions can be drawn:

(1) Chinese college students' entrepreneurial experiences positively influence their entrepreneurial attitudes.

(2) Entrepreneurial experiences, entrepreneurial environment, entrepreneurship education and entrepreneurial traits are all positively related to the entrepreneurial intentions of Chinese

college students.

(3) The entrepreneurial attitudes of Chinese college students mediate the relationship between entrepreneurial experiences and entrepreneurial intentions.

5.5 Theoretical implications

By identifying and exploring the factors influencing the entrepreneurial intentions of college students, this thesis bears the following theoretical implications.

First, as one of the first studies that have constructed a model of influencing factors of Chinese college students' entrepreneurial intentions, it lays a theoretical foundation for more in-depth exploration into the determinants of college students' entrepreneurial intentions. Previous studies have sporadically identified some influencing factors such as TPB (L. H. Duan, 2021; H. M. Liao, 2010; Lin et al., 2022; Virasa et al., 2022), entrepreneurial motivation (Liguori et al., 2020; Lin et al., 2022; Malebana, 2014), entrepreneurial experiences (Chukhray et al., 2021; Hudea et al., 2021; Le et al., 2012; Y. H. Liu, 2013), entrepreneurial attitudes (Fragoso et al., 2020; Paul et al., 2016; Phan Tan, 2021; Yousaf et al., 2021), personality traits (Cai et al., 2021; W. J. Li & Zhu, 2022; Şahin et al., 2019; J. H. Wang et al., 2016), entrepreneurial self-efficacy (Fu et al., 2022; W. J. Li & Zhu, 2022; Naktiyok et al., 2010; H. Zhao et al., 2005), entrepreneurship education (J. Cui & Bell, 2022; Kusumojanto et al., 2020; Soomro & Shah, 2021; Usman et al., 2022) and entrepreneurial environment (Abebe, 2012; G. F. Li et al., 2017; Omidi Najafabadi et al., 2016; S. M. Tian, 2013). However, studies simultaneously exploring the influence of the five variables (entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits and entrepreneurial attitudes) on entrepreneurial intentions and specifically targeting college students in China are very limited. In this sense, this thesis may serve a pioneering role in building an entrepreneurial intention model that can be used for future reference.

Second, by testing the mediating role of entrepreneurial attitudes in the relationship between entrepreneurial experiences and entrepreneurial intentions, this work enriches the existing literature on the mediating role of entrepreneurial attitudes. There has been a widespread consensus that attitude is a predictor of intention since Ajzen (1991) put forward TPB. The direct influence of entrepreneurial attitudes on entrepreneurial intentions has also been validated by existing literature (Fragoso et al., 2020; C. Jin & Sun, 2020; Paul et al., 2016; Yousaf et al., 2021; Y. F. Zhao & Zheng, 2021). In fact, the mediating role of entrepreneurial attitudes has been tested in existing literature, such as between traits and entrepreneurial

intentions (Anwar et al., 2021), between entrepreneurship education and entrepreneurial mindset (Wardana et al., 2020), between Islamic values and entrepreneurial intentions (Wibowo et al., 2021), and between creativity disposition and entrepreneurial intentions (Anjum, Ramani Bai, et al., 2020). However, studies testing the mediating role between entrepreneurial experiences and entrepreneurial intention are almost non-existent. Therefore, this study fills the gap in the literature on the mediating role of entrepreneurial attitudes.

Third, this study enriches the existing literature on the influence of entrepreneurial traits on entrepreneurial intentions among college students in China. Unlike external factors such as entrepreneurship education and entrepreneurial environment, entrepreneurial traits are the personality characteristics intrinsic to individuals that are beneficial for their entrepreneurial journey. There has been an emerging trend in academia to study whether and how entrepreneurial traits are related to entrepreneurial intention (Kerr et al., 2018). This study has contributed to this ongoing exploration by offering empirical evidence and explanations.

5.6 Managerial implications

5.6.1 Implications for government authorities and policy makers

Government authorities and policy makers should be aware of the status of college student entrepreneurship and the factors that influence them so as to put in place effective management policies and comprehensive measures to improve the reality.

In view of the influence of entrepreneurial environment on college students' entrepreneurial intentions, government authorities and policy makers should introduce targeted policies and take effective measures to foster a favourable entrepreneurial environment for college students to start their own businesses. The favourable lending, funding and financial risk alleviation policies introduced by the People's Government of Zhejiang Province are very good examples. In addition, tax incentives, provision of premises and entrepreneurship training opportunities can also be provided for potential entrepreneurs. Encouragement of an enabling culture for entrepreneurship should also be incorporated into the government propaganda.

Considering the impact of entrepreneurship education on college students' entrepreneurial intentions, government authorities and policy makers should attach greater importance to entrepreneurship education by allocating adequate resources to colleges and universities. For example, government authorities may allocate adequate budget to entrepreneurship colleges and programs, support the use of digital technology and Internet technology to develop and

deliver online entrepreneurship programs, and fully respond to the needs of entrepreneurship education providers.

In addition, government authorities should also increase policy advocacy efforts. As the study by W. J. Li and Zhu (2022) suggests, most researchers may not be aware of entrepreneurship policies. The same could happen to college students who are focused on their study and have limited exposure to the society. Having good policies in place is just the first step. The policies need to be known and understood by the target audience in order to achieve their desired effects.

5.6.2 Implications for colleges/universities and managers

Colleges and universities should try their best to equip students with the necessary knowledge, skills, experiences, and resources for their entrepreneurial endeavours.

Importance should be attached to entrepreneurship education in terms of not only knowledge but also practice. Knowledge is important as it enables students to develop a systematic and comprehensive understanding of their own strengths and weaknesses, the risks/challenges of entrepreneurship as well as the benefits and opportunities brought about by entrepreneurship so that they can make wiser decisions. Yet the effectiveness of knowledge should be tested in practice. Colleges and universities should try to provide students with opportunities for hands-on experiences including internships, trainings, and activities. As evidenced in this study, increasing entrepreneurial experiences can also help increase college students' entrepreneurial intentions.

In addition to the integration of knowledge and practice, colleges and universities should also pay particular attention to recognizing and reinforcing students' entrepreneurial traits. This can be reflected in the interactions between teachers/mentors and students. For example, instead of criticizing a student for being hasty, the focus of feedback can be on his/her confidence, courage, and executive power.

Furthermore, creating an entrepreneurship-friendly campus environment can also be beneficial. This is particularly relevant in the context of the COVID-19 pandemic. As R. Jones (2009) said, "In every challenge, there lies an opportunity." COVID-19 has undoubtedly made life harder for everyone including the many constraints that this research has been subject to, mainly in its empirical part. But it also causes people to have new needs and live new lifestyles, in which context there also lie worth tapping entrepreneurship opportunities.

5.6.3 Implications for college students

College students should take the initiative to attend entrepreneurship education programs to accumulate knowledge about business ventures and participate in entrepreneurial activities to accumulate entrepreneurial experiences.

Apart from knowledge and experiences, soft skills such as initiative skills, communication skills, team building skills, people skills and training skills (S. Robinson & Stubberud, 2014) are also important to successful entrepreneurship. All these skills are developed through exposure to social context or social interactions. Therefore, college students are encouraged to take the initiative to engage in group projects, participate in entrepreneurship competitions, take internships, involve in community/social work, take up volunteer opportunities and do part-time jobs. The experiences will allow them to develop a specific skillset which will better equip them for their entrepreneurship endeavours in the future.

College students interested in starting their own business after graduation should develop a keen awareness of their own entrepreneurial traits. They should form an objective evaluation of their own strengthens and weaknesses in terms of their personality traits and try to make up for what they are short of by learning from books, teachers and role models or integrating resources in order to strengthen their entrepreneurial traits.

5.6.4 Implications for parents

Given the importance of entrepreneurial experiences and entrepreneurial environment, parents should try to foster an empowering family environment for college students by building up their confidence, encouraging their creative thinking, and provide emotional support. In fact, family influence has been found to have a positive and significant influence on college students' entrepreneurial intentions (Hutasuhut, 2018; Marques et al., 2018; Mustapha & Selvaraju, 2015).

Parents who have their own businesses or are managers of enterprises are encouraged to create opportunities for their children to engage in business operation to enable them to accumulate real-life experiences and develop necessary skills for running a business.

5.7 Limitations and prospects

This section discusses the limitations of this study and puts forward suggestions for future research.

5.7.1 Limitations

Due to the constraints in time, space and resources, this study has the following limitations:

First, the survey was only conducted in nine universities in five cities of Zhejiang Province (online survey among five universities in Zhejiang Province and paper-and-pencil survey among four colleges and universities located in Shaoxing City) and the survey data were collected from a limited sample of college students, it remains to be tested whether the findings can be generalised across different regions in China.

Second, all the variables in the questionnaire used in this study, including entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits, entrepreneurial attitudes, and entrepreneurial intention, were self-reported by the college students. Respondents' subjective feelings may affect the validity of the questionnaire.

Third, as this study was a cross-sectional study, its findings are mainly about how entrepreneurial experiences, entrepreneurial environment, entrepreneurship education, entrepreneurial traits, entrepreneurial attitudes are related to entrepreneurial intention at a certain point in time. The causal relationships among them are yet to be further investigated in future longitudinal studies.

Fourth, due to the restrictions posed by the COVID-19 pandemic, the questionnaire survey had to be partially conducted online, when of the repeated lockdowns in university campuses at the time of the empirical work. As a result, the quality of the collected data might be compromised to some extent due to the inherent disadvantages of online surveys such as non-response and response bias (Tuten et al., 2002). Besides, the macro-economic environment during the regular pandemic prevention and control period is not as optimistic as before, which may have greatly affected college students' entrepreneurial intention. The model was designed based on relevant literature and research conducted on "normal" times when such an impactful and disturbing pandemic situation could not be foreseen. This situation may have greatly affected not only the design of the model but also the results.

5.7.2 Suggestions for future research

To make up for the above-mentioned limitations, future researchers may focus on the following aspects to enhance the maturity of research.

First, larger samples from a wider range of geography can be chosen. For example, college students from other parts of China, such as the Pearl River Delta and the Beijing-Tianjin-Hebei region, can be also selected as samples to facilitate further generalization of the research findings.

Second, the whole survey should be conducted in paper-and-pencil questionnaires in place of web-based questionnaires, with respondents being supervised throughout the process of questionnaire completion. This will increase the authenticity and validity of the collected data. In-depth interviews with college students, college teachers and entrepreneurship mentors can be conducted. A combination of qualitative and quantitative research methods can be used to better explain the interrelationships between variables.

Third, future researchers may conduct longitudinal studies of college students over a certain timespan to further investigate the causal relationships among the variables. For example, researchers may trace the entrepreneurial intention of the same college students throughout their entire college journey to identify the most important factors influencing their entrepreneurial intention. Alternatively, researchers may trace a certain group of college students over a certain timespan to see to what extent does entrepreneurial intention turn into actual entrepreneurial behaviour.

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Annex A: Questionnaire on the Influencing Factors of College Students' Entrepreneurial Intention

Dear Sir/Madam,

Thank you for your participation in filling out this questionnaire! This questionnaire is designed to understand influencing factors of college students' entrepreneurial intention. Please read each item carefully before selecting the option closest to your actual thought (click the respective button). There is no right or wrong in the answers, and the whole process will be conducted anonymously. The questionnaire is intended for research purpose only. We promise that all the information will be kept strictly confidential. Please rest assured and fill in the questionnaire with patience. Thanks very much for your support and help!

1. Personal information (Please tick the option that corresponds to your reality or write down the answer.):

(1) Gender: ☐Male ☐Female

(2) Grade: ☐Freshman ☐Sophomore ☐Junior ☐Senior)

(3) Major: _____

(4) Membership of student association(s) ☐Yes ☐No

2. Entrepreneurial intention (The part is divided into four sections. Please tick the number that best corresponds to your actual experience or thought. The options are classified into five levels, from 1 = "strongly disagree" to 5= "strongly agree").

Item	1	2	3	4	5
Entrepreneurial experience					
1. I was involved in entrepreneurial teams.					
2. I used to work as a company intern and accumulated a lot of experience.					
3. I received entrepreneurship training and guidance in school.					
4. I participated in entrepreneurship competitions such as business plan competitions.					
Entrepreneurial traits					
5. I like adventure and am willing to take risks.					
6. I are confident and independent and believe that events are predictable and controllable.					
7. I are active and have the authority in the crowd.					
8. I are creative and energetic.					

Item	1	2	3	4	5
9. I am good at turning challenges into opportunities.					
10. I am willing to face and overcome difficulties.					
Entrepreneurial attitude					
11. I want to test my own ideas.					
12. I enjoy personal challenges.					
13. I want to accomplish personal achievement.					
14. I want become independent.					
15. I hope to achieve status and prestige.					
16. I hope to receive public recognition.					
17. I wish to accumulate money and wealth.					
18. I want to contribute to society.					
19. I want to help my country to advance.					
Entrepreneurial environment					
20. The government provides convenient business registration and approval procedures.					
21. The government provides favourable taxation policies.					
22. The government provides a comprehensive system of business start-up services.					
23. College students have easy access to government or school start-up funds.					
24. College students have easy access to interest-free or low-interest loans from banks.					
25. College students have easy access to a variety of investment or credit guarantees.					
26. My parents support me to start my own business.					
27. The society tolerates entrepreneurial failure.					
28. There is a strong local culture of entrepreneurship and innovation.					
Entrepreneurship education					
29. The entrepreneurship education in our school has increased my interest in entrepreneurship.					
30. The entrepreneurship education in our school has improved my knowledge of business plans.					
31. The entrepreneurship education in our school has improved my understanding of business opportunities.					
32. I believe that the entrepreneurship education in our school has improved my business management skills.					
33. The school has a well-established entrepreneurship base or entrepreneurship guidance organisation.					
34. The school provides a favourable climate for entrepreneurship.					
35. The school has excellent entrepreneurship instructors (including part-time instructors).					
Entrepreneurial intention					
36. I'm ready to make anything to be an entrepreneur.					
37. My professional goal is becoming an entrepreneur.					
38. I will make every effort to start and run my own firm.					
39. I'm determined to create a firm in the future.					
40. I have very seriously thought in starting a firm.					
41. I've got the firm intention to start a firm some day.					

3. Other questions

(1) Which one you will choose if you are going to business?

A. IT/software

B. Consulting

C. Traditional manufacturing

D. Biological science and technology

E. Others

(2) Please write down any comments and suggestions on entrepreneurial intention if you like

_____

Thanks again for your support and help!