

# The Relationship Between The Theory of Planned Behavior and Entrepreneurial Intention of Chinese College Students

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## Abstract

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This study aims to investigate the relationship between the theory of planned behavior and entrepreneurial intention among Chinese college students. The data were collected from 1663 college students in seven regions of China through the questionnaire. The results showed that the theory of planned behavior, including personal attitude, subjective norm, and perceived behavioral control had a significant positive impact on entrepreneurial intention of Chinese college students. This study, therefore, shows that entrepreneurial practice and quality of college students can be strengthened by the main factors of the planned behavior theory. This study enriches the research on the theory of planned behavior and entrepreneurship.

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**Keywords:** the theory of planned behavior, entrepreneurial intention, Chinese college students

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## Introduction

Entrepreneurship plays a positive role in promoting a country's economy (Lopez-Nunez et al, 2020), thus all countries in the world actively encourage people to start their own businesses, especially college students, who are young and have more creative ideas. Despite failures, they still have chances to start again. In addition, compared with other groups of people, college students acquire knowledge, skills and social communication more quickly (Yan et al, 2018), which are the unique advantages that college students have in the process of starting a business. However, according to relevant statistics, the proportion of college students who can really succeed in the process of starting businesses is lower than statistical results. Some people attribute it to the entrepreneurship education, believing that the quality and level of entrepreneurship education directly affect the success or failure of college students' entrepreneurship (Abu Samah & Alhaddar, 2010; Linan, Rodriguez-Cohard, & Rueda-Cantuche, 2011).

However, studies show that not all entrepreneurship education can promote the success rate of college students' entrepreneurship, which is also affected by a variety of factors (Mueller & Thomas, 2001; Roman & Maxim, 2017; Thomas &

Mueller, 2000). More importantly, some researchers found that the sense of self-efficacy and personality traits can also exert a significant impact on the success of business start-up and entrepreneurs (Ahmed, Khattak, & Anwar, 2020; Bazkiaei, Heng, Khan, Saufi, & Kasim, 2020; Farrukh et al, 2018; Karabulut, 2016).

Hence a question arises: is college students' entrepreneurial intention the result of their career choice or their personality? In most of previous research, the theory of planned behavior is adopted as the independent variable to predict people's behavior, rather than to motivate entrepreneurial intention, particularly in Chinese context (Barrick & Mount, 1993; Barrick, Parks, & Mount, 2005; Hamama-Raz et al., 2016; Jensen-Campbell & Graziano, 2001). As such, the complexity of entrepreneurial traits mixed with personal factors presents the significant challenges to entrepreneurship research and is also worth studying. Therefore, this research aims to explore the relationship between the theory of planned behavior and entrepreneurial intention among Chinese college students.

## Literature review

### Entrepreneurial intention

Krueger (2003) defines entrepreneurial intention as a retention of cognitive state



immediately preceding entrepreneurial action. Entrepreneurial intention is a psychological concept originally produced before the action of the entrepreneurs, who expect to obtain corresponding wealth or achieve their life goals through entrepreneurship (Krueger et al., 2000), or the intention to complete an entrepreneurial act. Thus, intention can be “to do, to be or to have” (Linan & Fayolle, 2015).

One of the most commonly applied definitions is put forward by Thompson (2009), who defined the term as a conscious and planned determination that drives the actions necessary to launch a business. More simplified definitions have been applied by other researchers, including the intention to own a business, to start a business (Krueger & Dickson, 1994; Zhao, Seibert, & Hills, 2005) and to be self-employed (Kolvereid & Isaksen, 2006). Compared with previous psychological factors, the potential enterprise of successful entrepreneurs can better reflect the important influence of the psychological characteristics of entrepreneurs on their entrepreneurial intentions Bird, 2015; Krueger et al., 2000). Bird (2015) reviewed the relevant literature and found that more than 80% of the research objects were college students.

Economic, psychological and background factors are the most common determinants

mentioned by researchers (Davidsson, 1995). The model of Theory of Planned Behavior can better predict entrepreneurial behavior than individual and environmental variables (Krueger et al., 2000). It provides a concise, coherent and effective theoretical framework for better explaining and predicting entrepreneurial process (Krueger & Dickson, 1994; Krueger et al., 2000). In most cases, entrepreneurial intention is a psychological tendency before the manifestation of entrepreneurial risk (Neneh, 2019), which means that entrepreneurial intention is an individual’s tendency to start a new business, either immediately or later. Aydiner et al (2019) point out that a person may start a business when his or her entrepreneurial beliefs are linked to obvious preconditions for a particular opportunity.

### **Theory of planned behavior (TPB)**

The behavioral decision model, proposed by Ajzen (1991), is widely adopted to predict and understand human behavior. Theory of planned behavior mainly involves behavioral belief, behavioral attitude, normative belief, subjective norms, controlling belief, perceived behavioral control, behavioral intention and behavior. Currently it has been extensively used in behavioral research



fields such as advertising, marketing, public relations, health care, sports management, sustainability, environmental protection, etc.

Theory of planned behavior, as one of the most used theories in entrepreneurial research, was proposed in 1991 by Ajzen. According to the theory, personal attitude, subjective norms, and perceived behavioral control are three antecedents of intention, which further leads to actual behavior. This theory is widely employed by entrepreneurship researchers to investigate individuals' entrepreneurial intentions. Theory of planned behavior, proposed by Ajzen (1991), has been well verified by other researchers. For example, Krueger (2007) proposed that theory of planned behavior is capable to well predict entrepreneurial intention. Krueger, Reilly, and Carsrud (2000) concluded that all three attitudinal variables can exert an impact on entrepreneurial intention, among which behavioral control has the largest impact on entrepreneurial intention, successively followed by personal attitude and social norms. By proposing slightly modified TPB structural model, Luthje and Franke (2003) found that "attitude towards entrepreneurship" is the most important antecedents of entrepreneurial intention. Gird and Bagraim (2008) also pointed out that TPB could well predict entrepreneurial intention.

## Research hypotheses

### Personal attitude towards entrepreneurial intention

Ajzen (2002) defined attitude as the number of positive or negative comments a person makes when performing a certain behavior. Entrepreneurial attitude is a person's desire to be an entrepreneur, which forms a person's intention to act in a certain way prior to entrepreneurial intention. There is a positive correlation between entrepreneurial attitude and entrepreneurial intention, and individuals with positive entrepreneurial attitude are more inclined to start their own businesses (Beynon, Jones, & Pickernell, 2016; Bosma & Schutjens, 2011; Haikun & Jaeseung, 2019).

In previous studies, many researchers concluded that a positive entrepreneurial attitude entails strong entrepreneurial intention for the following reasons. First, entrepreneurs are able to obtain high performance and accurately predict entrepreneurship. Second, most relevant studies indicate that while optimistic students are more likely to go into entrepreneurship, their entrepreneurial decisions tend to be riskier and they may lose more income. Puri and Robinson (2007) compared self-estimates and actuarial tables of life expectancy in consumer finance surveys, the findings of which show that students who



overestimated their lifespan are more likely to become entrepreneurs, while optimistic students are easy to make risky financial decisions. Third, entrepreneurial passion is another synonym for entrepreneurial attitude. It describes a conscious and strong positive feeling about the core and meaningful entrepreneurial activities (Murnieks, Mosakowski, & Cardon, 2014). In principle, entrepreneurs can be enthusiastic about three activities, which are development, creation, and invention. Entrepreneurs' passion in an entrepreneurial activity makes them automatically think about and participate in the activity (Chen et al. 2009), which affects entrepreneurial performance. Therefore, the following hypothesis is postulated in this study:

**H1: Personal attitude has a positive impact on entrepreneurial intention of Chinese college students.**

### **Subjective norms towards entrepreneurial intention**

Subjective norms represent the social pressure faced by individual students. Social attitudes towards entrepreneurship vary with societies. For example, some nations are considered more entrepreneurial than others (Jianping & Zhongming, 2008). Subjective norms seem an important predictor of entrepreneurial intention but is excluded

from the original model in a number of studies (Peterman & Kennedy, 2003). Many researchers reported a positive relationship between subjective norms and intention to start business (Kolvereid & Isaksen, 2006; Linan & Chen, 2009), while in other studies, subjective norms were found to have no significance influence on entrepreneurial intention (Krueger et al., 2000; Reynolds et al., 2005). Linan and Chen (2009) also failed to support the direct relationship between subjective norms and entrepreneurial intention.

Though there are such contradictory results, many current studies find that entrepreneurial subjective norms can effectively predict entrepreneurial intention. Sitaridis, Kitsios, and Ilee (2018) conducted a study based on a sample of 476 young science and technology graduates from the Indian Institutes of Technology (IITs), demonstrating that subjective norms had a positive on entrepreneurial intention (Roy, Akhtar, & Das, 2017). Ip et al (2018) compared the differences between Taiwan and Hong Kong students, the results showed that the experience in solving social problems, perceived social support, and originality are the three most important factors affecting college students' entrepreneurial intention, with the major differences between the two group of students being inexperience,



empathy, self-efficacy, perceived social support and usefulness. All the above research results enrich the theoretical basis of entrepreneurship. Therefore, the following hypothesis is postulated in this study:

**H2: Subjective norms have a positive impact on entrepreneurial intention.**

### **Perceived behavioral control towards entrepreneurial intention**

According to Ajzen (1991), perceived behavior control is defined as subjective understanding of the degree of control over and difficulty in carrying out a particular behavior. In other word, it can be described as intuitive judgment regarding students' own ability, resources and the chance to succeed in case of engagement in entrepreneurial activities. People tend to believe that they may gain from or form resources and opportunities in order to start a new firm.

Zhao et al. (2005) conducted a study among MBA students in the United States and found that individuals with high perceived behavioral control were most likely to form entrepreneurial intentions directly, which then affects learning and experience and, to a lesser extent, risk propensity. The meta-analysis of perceived behavioral control carried out

by Oian-wen and Yu-li (2009) also showed that perceived behavioral control was positively correlated with entrepreneurial intention and/or entrepreneurial creation in most other studies. Caliendo et al. (2009) also confirmed the correlation of internal perceived behavioral control in a study from 2000 to 2009.

Moreover, some studies addressed the impact of perceived behavioral control on various stages of the entrepreneurial process. For example, Cassar and Friedman (2009) found that perceived behavioral control increases the possibility of creating operating enterprises. Brinckmann and Kim (2015) reported that perceived behavioral control can promote the development of formal business plans, while entrepreneurial perseverance tends to facilitate participation in business plan research. Therefore, this study proposes the following hypothesis:

**H3: Perceived behavioral control has a positive impact on entrepreneurial intention.**

Based on the literature and related research, this study proposed the following model as the research framework;

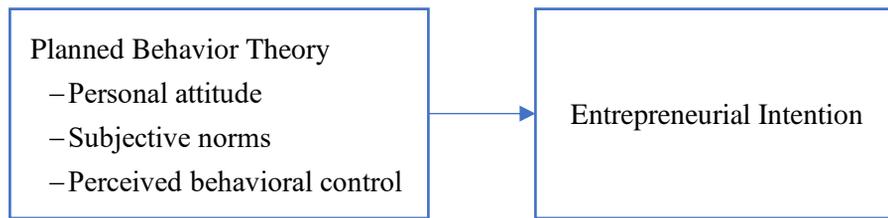


Figure 1 Conceptual Framework

## Research methodology

### Population and sample

The sample of this study is college students in China and the college students were selected from the universities registered with the Ministry of Education of China. According to the China Education Statistical Yearbook (2020; Changya & Jiancong, 2021), a total of 41.83 million college students were enrolled in various forms of higher education. According to the taro Yamane sample size calculation method:  $n = \frac{N}{1 + N(e)}$ , if the margin error (e) value is 0.01, about 10,000 samples are needed for this study; if the value of e is 0.05, at least 400 samples are needed; and if the value of e is 0.1, at least 100 samples are needed. This research decided to collect the data from 1,663 respondents at 0.05.

This study selected the participants from colleges and universities in Eastern China, Western China, Northern China, and Southern China. The participants were obtained through the university student

association alliance in different regions and universities (Abdimomynova et al, 2021; Araya-Pizarro, 2021; Boldureanu et al, 2020). The survey was carried out in the form of questionnaires after the approval of the Ethics Committee of Thailand. Due to the COVID-19 outbreak, online questionnaires were adopted through the method of snowball sampling. This research asked the third-party data agency and the university student association alliance to distribute questionnaire on their network platforms.

### Measurements

This study adopts close-ended questions. Since the theory of entrepreneurial intention and the planned behavior are first introduced by foreign scholars, the questionnaire was originally written in English and then translated into Chinese. Then the translated questionnaire was re-translated into English to confirm the correctness of the translation process.

The questionnaire was developed from the previously validated scales used by the



previous studies. A seven-point Likert scale was used in this study. The dependent variable indicates college students' "entrepreneurial intention", and its items are from Armitage and Conner (2001), which represent the psychological tendency of college students to participate in entrepreneurship. The independence variable was adopted from Ajzen (1991), indicating "Theory of planned behavior", in which represents the entrepreneurial cognitions of college students. Before conducting the survey, 80 students from the list of Chinese university directory were randomly selected for pre-testing. The pre-testing provides suggestions on which specific questions should be added to generate meaningful data related to Chinese college students' entrepreneurial intentions. The format is clear and logical.

### **Data analysis**

Multiple regression analysis was used for data analysis in this quantitative research. It has been applied to a vast array of complex modeling areas, including biology, psychology, sociology, and econometrics. Multiple Regression Analysis is considered by Baron and Kenny (1986) to be a direct ancestor to the techniques of causal inference, in which is used to describe the directed dependencies among a set of variables. This includes models equivalent to any form of regression analysis, factor analysis,

canonical correlation analysis, discriminant analysis, as well as more general families of models in the multivariate analysis of variance and covariance analyses (Cronbach, 1951; Hair, Anderson, & Tatham, 1995).

### **Results**

A total of 1,663 college students participated in the survey. The numbers of the participants were 302, 375, 275 and 235, 207, 155, and 114 from East China, South China, North China, Central China, Northeast China Southwest China and Northwest China respectively. 42.6% of them participated in the innovation and entrepreneurship training program for college students, and 21.58% participated in the China International "Internet Plus" Innovation and Entrepreneurship Competition for College students. In this survey, most of these college students have no entrepreneurial experience, only 63 of them, accounting for 3.8%, have experienced the process of entrepreneurship. Only 282 (17.0%) of them have family members who run businesses, while 1,381 (83.0%) of them do not. Therefore, most of the college students in China do not have families with business experiences.

This study analyzed the convergent validity and discriminant validity of the inspected variables, including the planned



behavior theory (5 items of personal attitude, 3 items of subjective norm, and 6 items of perceived behavioral control), and entrepreneurial intention (6 items), with confirmatory factor analysis (CFA) on a total of 20 items. The factor loadings of personal attitude ranged from 0.790 to 0.898, subjective norm ranged from 0.895 to 0.946, perceived behavioral control ranged from 0.882 to 0.948, and entrepreneurial intention ranged from 0.755 to 0.960. The standard loading coefficient values of those all items were significant and greater than the cut-off value of 0.5 (Hair, Anderson, & Tatham, 1995). In addition, average variance

extracted (AVE) and composite reliability (CR) were used for convergent validity analysis. Generally, AVE > 0.5 and CR > 0.7 indicate high aggregation validity. According to Table 1, the AVE values of the four factors were all greater than 0.5, and the CR values were all higher than 0.7, indicating good convergent validity. According to discriminant validity analysis, the AVE square root values of all constructs were larger than the absolute value of the correlation coefficient between factors, indicating good discriminant validity (Hair, Anderson, & Tatham, 1995).

**Table 1** Pearson correlation and validity of constructs

	AVE	CR	PA	SN	PBC	EI
Personal Attitude	0.725	0.929	<b>0.852</b>			
Subjective Norm	0.831	0.936	0.724	<b>0.912</b>		
Perceived Behavioral Control	0.837	0.968	0.496	0.553	<b>0.915</b>	
Entrepreneurial Intention	0.786	0.956	0.642	0.631	0.832	<b>0.887</b>

*Note:* Diagonal numbers are AVE square root values

Regression coefficients in the theory of planned behavior, namely personal attitude, subjective norm, and perceived behavioral control, has a significant positive impact on entrepreneurial intention. Therefore, H1-H4 are accepted. Perceived behavioral control has the

largest coefficient. That is, perceived behavioral control has a greater impact on entrepreneurial intention than the other two variables, while personal attitude and subjective norm have little differences and significant impacts on entrepreneurial intention (see Table 2).



**Table 2** Regression coefficients in the theory of planned behavior

Independent variable	Dependent variable	Nonstandard Estimation Coefficient	Std. Error	z	p	Std. Estimate Coefficient
PA	EI	0.708	0.038	18.746	0.000**	0.648
SN	EI	0.792	0.041	19.459	0.000**	0.643
PBC	EI	1.200	0.053	22.53	0.000**	0.831

Note: \*\* $p > 0.01$

## Discussion

### Personal attitude towards entrepreneurial intention

Personal attitude has a significant impact on the entrepreneurial intention of college students ( $\beta=0.708^{**}$ ). In the context of Chinese college students, the administrative theory of the plan proposed by Ajzen (1991) has been supported and verified. As in previous studies, positive entrepreneurial attitude can lead to higher entrepreneurial intention. College entrepreneurs with a positive attitude have higher entrepreneurial intention and can accurately predict the problems and difficulties encountered in the process of entrepreneurship.

As Shane and Venkataraman (2000) found in their research, positive entrepreneurial attitude can bring entrepreneurs more entrepreneurial confidence. This entrepreneurial confidence enables entrepreneurs to accurately predict and analyze the future (Bengtsson & Kock, 2014). In addition,

positive entrepreneurial attitude will generate positive entrepreneurial enthusiasm (Murnieks et al, 2014). College students with entrepreneurial enthusiasm are full of vigor and enthusiasm. Their confidence in the development of enterprises and the increase and expansion of business play a significant role in improving the performance of entrepreneurial organizations, which can increase sales, hire new employees and make global external investment. Therefore, it is believed that those enthusiastic college students have higher entrepreneurial intention (Chen, Yao, & Kotha, 2009).

According to the extended construction theory (Fredrickson, 2001), this positive attitude will render the whole entrepreneurial environment, because entrepreneurial passion expands the knowledge base of entrepreneurial thoughts and actions by activating and broadening the scope of entrepreneurial cognition, and increases the ability and resources of entrepreneurial behaviors of



college students, thus improving the efficiency. When college students have high entrepreneurial enthusiasm, their perseverance is also highlighted (Murnieks et al, 2014). Therefore, as long as the entrepreneurial enthusiasm of college students is maintained, their entrepreneurial intention will be significantly improved.

### **Subjective norms towards entrepreneurial intention**

In this study, subjective norms have positive and significant effect on college students' entrepreneurial intention ( $\beta=0.792^{**}$ ), which is supported in the Chinese context. This variable reflects the pressure of the individual student from the society and the attitude of the surrounding people towards college students' entrepreneurship. For example, the entrepreneurial atmosphere and support can be fully reflected in this factor. The result of this study supports previous studies (Sitaridis et al, 2018), in which entrepreneurs' subjective norms can effectively predict entrepreneurs' intentions. The self-efficacy of college students can feel the degree of support for entrepreneurship from the surrounding people, thus promote the influence of entrepreneurial personality traits on entrepreneurial intention. Moreover, in the study of Ip et al. (2018) found that subjective norms are one of the main

factors that significantly affect college students' social entrepreneurial intention of Taiwan and Hong Kong students. Lacap et al. (2018) also found similar conclusions in the study of university students in the Philippines and Indonesia.

But what is surprising is that in developed countries and regions, subjective norms have little or weak influence on college students' entrepreneurial intention, but in some developing countries, such as Malaysia found that the subjective norm has a significant effect on the entrepreneurial intention of college students. For example, Omar et al. (2019) found in their study that subjective norms can explain more than half of the variance of college students' entrepreneurial intention. Similar conclusions were obtained in Chinese context of this study.

### **Perceived behavioral control towards entrepreneurial intention**

Perceived behavioral control as the third predictor in Ajzen (1991) theory of planned behavior was also supported in this study ( $\beta=1.200^{**}$ ). That is among Chinese college students those who can control their entrepreneurial intention are more likely to have entrepreneurial intention. From this aspect, Chinese college students' understanding of their own abilities and resources, as well as



their judgment on participating in entrepreneurial activities, have a direct impact on their entrepreneurial intention.

Therefore, the finding of this study is consistent with the results of previous research. Zhao et al. (2005) showed that college students with higher sense and behavioral control can affect their entrepreneurial learning and experience, and to a lesser extent, their control of entrepreneurial risk. In study of Caliendo et al. (2009) on the 10-wave from 2000 to 2009, the correlation of internal perceived behavioral control was also observed. In addition, there appears to be a strong link between perceived behavioral control and entrepreneurship, as well as specific related functions such as business planning skills and communication skills. Baum and Locke (2004) conducted a longitudinal study for a period of 6 years. They found that context-specific motivations such as goals, perceived behavioral control, and communication vision had direct effects on entrepreneurial growth, mediating other traits such as passion, tenacity, and new resource skills. This is in line with the findings of Tolentino et al. (2014); Mortan et al. (2014); Roy and Das (2020); Fatoki (2020); Urban (2020) that there is a strong positive correlation between self-perceived behavioral control and entrepreneurial intention.

## Conclusions

This study aims to investigate the relationship between the theory of planned behavior and entrepreneurial intention of college students in China. In the theory of planned behavior, particularly entrepreneurial attitude, subjective norms and perceived behavior control all have significant influences on Chinese college students' entrepreneurial intention. Perceived behavioral control has a greater impact on entrepreneurial intention than the other two variables, while personal attitude and subjective norm have little differences and significant impacts on entrepreneurial intention. This study, therefore, confirms effect of the theory of planned behavior on entrepreneurial intention, indicating that entrepreneurial intention is not only the result of entrepreneurial education, but also may be caused by the influencing factors of personality traits, which enriches the research on entrepreneurship. This research, therefore, provides new insights into how to improve the personality traits needed for entrepreneurial success and to cultivate in entrepreneurship education. Furthermore, it provides valuable recommendations for the Chinese government in developing policies and promoting entrepreneurship and innovation.



## Contributions and future research

This research provides some contributions to the research and practice. The contribution for the research is that this study investigates the causal relationship between the theory of planned behavior and entrepreneurial intention in the context of Chinese society and the causal relationships among variables are verified in this study. This enriches the theory of planned behavior and entrepreneurship literature. In addition to the implication for the government as in order to cultivate entrepreneurship culture and attitudes among Chinese college students, it is necessary to create an environment and ecosystem where people around them can support college students' entrepreneurship. At least, policy support and available resources should be provided for them in the formulation of the system. Moreover, the implication for entrepreneurship education, in order to improve the entrepreneurial intention and behavior of college students and obtain a higher success rate of entrepreneurship, some specific entrepreneurial personality behaviors, particularly personal attitude, subjective norm, and perceived behavioral control of college students must be consciously cultivated in the process of entrepreneurship education. The curriculum and training for

entrepreneurial skills and abilities are not enough but also the positive students' cognition, attitude, and belief of their ability to cope with limited existing resources and obtain new resources are important.

This study also provides some suggestions for further research. Firstly, this study focuses only on the entrepreneurial intention of college students in China. Therefore, this study can be replicated in college students of other parts of China or other contexts and cultures in order to validate the causal relationship among variables. Secondly, this study uses the theory of planned behavior as the antecedents of entrepreneurial intention. Other factors, such as demographic factors, entrepreneurial culture and environmental factors can be further studied since they have the potential impact on college students' entrepreneurial intention. In addition, future studies should use qualitative research approach to gain in-depth understanding of all the constructs and the links of the variables under this study.

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