

# The relationship between entrepreneurial passion, entrepreneurial persistence, entrepreneurial self-efficacy, and work vitality

Zhang Xin

## Abstract

The current academic research on entrepreneurship focuses on the entrepreneurial intention and opportunity identification and utilization of entrepreneurs in the early stage of entrepreneurship, as well as the entrepreneurial performance and entrepreneurial results after the establishment of entrepreneurial enterprises. Few studies focus on the entrepreneurial persistence of entrepreneurs in the development stage of entrepreneurial enterprises. Entrepreneurial persistence enables entrepreneurs to stick to their goals in adversity and continue to carry out positive entrepreneurial behaviors, which is conducive to the survival and development of enterprises and improves the chances of entrepreneurial success. Entrepreneurial persistence plays an important role in the entire process of entrepreneurship. Based on self-regulation theory, social cognition theory and emotional contagion theory, this study's purpose and objective is to construct a theoretical model of the mechanism of entrepreneurial passion on entrepreneurial persistence with entrepreneurial self-efficacy and work vitality as mediating variables and emotional intelligence as moderating variables. The process of cognitive strengthening and emotional activation realizes the transformation from entrepreneurial passion to entrepreneurial persistence. The quantitative empirical research was carried out by obtaining data through a questionnaire survey. Both theoretical models and empirical analysis show that entrepreneurial passion can improve entrepreneurial persistence through entrepreneurial self-efficacy and work vitality, and emotional intelligence plays an important role in regulating it. This study also confirmed the moderating mediation model of entrepreneurial passion and entrepreneurial persistence.



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About Author (s)

**Zhang Xin**, Asia Metropolitan University, Malaysia.

## Introduction

Entrepreneurship and innovation are the foundation and key for a country to win the future. Since the Nineteenth National Congress of the Communist Party of China, General Secretary Xi Jinping has emphasized on many occasions on different occasions that we must maximize the release of innovation, entrepreneurship and creation momentum of the whole society, support the development of private enterprises and move to a broader stage. The Central Economic Work Conference in recent years clearly pointed out that it is necessary to support the development of private enterprises, optimize the development environment of the private economy, enhance the vitality of micro-subjects, and give full play to the subjective initiative of enterprises and entrepreneurs. Entrepreneurs are an important part of private entrepreneurs and an important subject to promote the development of private enterprises. Entrepreneurs and entrepreneurial enterprises have become an important subject of technological innovation, an important field of employment promotion, and an important source of national tax revenue, playing an important role in my country's economic development. The size, contribution and potential of entrepreneurs cannot be ignored (Chen, 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett, 2015; Meek & Williams, 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016). In recent years, with the continuous advancement of high-quality development of innovation and entrepreneurship, the state and governments at all levels have promulgated a series of favorable policies for entrepreneurship support, entrepreneurship incubation, and key support for college graduates and other groups of entrepreneurs. According to statistics from the National Bureau of Statistics, as of 2021 In 2019, the number of entrepreneurship incubation institutions across the country reached 15,253, including 6,227 incubators, 1,287 national technology business incubators, 9,026 maker spaces, and 2,551 maker spaces registered with the state. China's entrepreneurial activity ranks among the top in the world. The Global Entrepreneurship Observatory survey found that nearly 13% of adults in China are actively involved in entrepreneurial activities. Promoting the high-quality development of entrepreneurship and creating an upgraded version of "Double Creation" has greatly stimulated the nation's entrepreneurial spirit and innovative genes and inspired the entrepreneurial passion of a large number of entrepreneurs. Entrepreneurial activities are flourishing on the land of China. But correspondingly, due to the intricate international situation and the impact of the new crown pneumonia epidemic, the world is facing major changes unseen in a century. This has led to the adjustment of supply chains on a global scale, the downward pressure on the economy, and the high risk and high uncertainty characteristics of entrepreneurial activities have become more prominent. The development of many enterprises has been severely impacted, and the growth and development of entrepreneurial enterprises are facing greater difficulties. Statistics show that the average life expectancy of small and medium-sized enterprises in China is only 3 years, the average life expectancy of large enterprises is only 8 years, and the average success rate of entrepreneurship is only 2%. There are only about 4% (Wang et al., 2021), and only 30% of start-ups can survive for more than 5 years (Zhang et al., 2016). Entrepreneurship activities have developed rapidly in my country in the past two decades. Although the road to entrepreneurship is full of challenges, more and more individuals choose to embark on the road of entrepreneurship. Not only because of relevant policies to encourage entrepreneurial activities and the support of a good entrepreneurial environment, my country's good economic development atmosphere also provides fertile ground for entrepreneurial enterprises to grow. However, good external environmental support cannot fully guarantee entrepreneurial success, and entrepreneurial activities are still full of risks and unknowns

as a whole (Chen, 2021). Entrepreneurship has potential for high returns and high risks. Faced with temptation, people are often impatient, but fear keeps many people from moving forward. There are some entrepreneurs who find it difficult to maintain concentration and persist in starting a business when faced with setbacks and adversities in the process of starting a business. In today's environment of high entrepreneurial passion, how to resist temptation, overcome fear, face up to difficulties and challenges, stimulate the resilience and potential of entrepreneurs, realize the transformation from entrepreneurial passion to entrepreneurial persistence, solve the problems of entrepreneurial survival and development, and promote high-quality entrepreneurship has become an important issue in the research and practice of enterprise management under the new form. (Chen, 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett 2015; Meek & Williams, 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016)

### **Problem Statement**

The theory of entrepreneurial behavior believes that the inherent uncertainty of entrepreneurship is a prominent feature of entrepreneurship research, and the initiative and behavior of entrepreneurs in the face of uncertainty are the key elements of entrepreneurship research. Entrepreneurship is divided into four stages: identification of entrepreneurial opportunities, development of entrepreneurial opportunities, establishment of entrepreneurial enterprises, and development of entrepreneurial enterprises. The establishment process of entrepreneurial enterprises has carried out a series of studies from the aspects of entrepreneurial intention, identification of entrepreneurial opportunities, grasping of entrepreneurial opportunities, entrepreneurial ability, and entrepreneurial learning. It is believed that the key to entrepreneurial activities lies in the establishment of entrepreneurial enterprises (Chen, 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett, 2015; Meek & Williams 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016). The current research on entrepreneurial persistence is mainly based on motivation theory and self-control theory. Entrepreneurial persistence is regarded as the decision-making and behavior of continuing to devote oneself to entrepreneurship in the face of setbacks or other external opportunities, and by measuring the duration of entrepreneurial activities or continuous development. The subjective intention of entrepreneurial behavior measures entrepreneurial persistence. These theories provide a reasonable explanation for entrepreneurs to continue to start a business in the face of setbacks and difficulties, as well as other external opportunities. However, there is a big difference between entrepreneurial persistence in the development period of the entrepreneurial enterprise and entrepreneurial persistence in the early stage of entrepreneurship. The entrepreneurial persistence in the early stage of entrepreneurship mainly focuses on the persistence of the clear goal of establishing an enterprise. It is manifested as a single decision-making process under conditions that may be conducive to establishing an enterprise. From the behavioral level of entrepreneurial persistence, it is manifested as a continuous process of resisting giving up and continuing to carry out entrepreneurial activities (Meek & Williams, 2018). In fact, entrepreneurial behavior in the development stage of entrepreneurial enterprises has dynamic characteristics. Entrepreneurs continue to deepen their understanding of entrepreneurship and perception of the environment during the development of entrepreneurial enterprises, and dynamically adjust their short-term entrepreneurial goals. Entrepreneurial behavior can be dynamically adjusted to achieve the harmony of environment-goal-behavior and better persistence in entrepreneurship. Behind the entrepreneurial persistence in this period included a series of goal adjustments and a persistent decision-making process in an uncertain environment. Goal Adjustment Theory explains the process by which entrepreneurs actively respond to changes

in the environment and external conditions, integrate information, reflect and summarize, carry out cognitive assessments, break away from original goals and establish new goals, in order to achieve harmony between external environmental conditions and their own goals. The theory of goal adjustment also emphasizes the process in which individuals actively carry out learning, pooling resources, and making efforts to achieve harmony between their own behavior and goal change and finally in the "situation-cognition-behavior" Under the general framework, it shows the dynamic characteristics of entrepreneurial persistence in the development period of entrepreneurial enterprises.

From the perspective of the entrepreneurial situation, due to the high risk and high uncertainty in the development process of entrepreneurial enterprises, entrepreneurs are often affected by factors that are not under the control of entrepreneurs, such as the deterioration of the external environment and the lack of key resources, making it difficult for entrepreneurs to continue. Continue to carry out entrepreneurial activities along the current direction, resulting in entrepreneurial failure. Entrepreneurial failure currently does not completely mean the failure of entrepreneurial persistence. It is more likely that entrepreneurs still adhere to higher-level entrepreneurial goals, start to evaluate, and adapt to the current entrepreneurial environment, and actively take actions to improve their own entrepreneurial capabilities. Learning from entrepreneurial failure is future-oriented and directly affects the improvement of entrepreneurs' ability and the degree of preparation for subsequent re-entrepreneurship. Entrepreneurs go through the process of "entrepreneurship -failure-re-entrepreneurship", which is conducive to the acquisition of knowledge and information, the improvement of cognitive ability and action ability, and enables entrepreneurs to continuously strengthen their own entrepreneurial ability (Chen 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett, 2015; Meek & Williams, 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016). Therefore, it is necessary to focus on the development period of entrepreneurial enterprises and conduct research on the structure and measurement of entrepreneurial persistence. Although entrepreneurial persistence is very important, few existing studies have conducted empirical research on entrepreneurial persistence and the sustainability of entrepreneurial enterprises. The more important problem is that most studies focus on entrepreneurial performance, or entrepreneurial establishment, and few studies focus on the development stage of entrepreneurial enterprises, lacking enough theory to guide the understanding of entrepreneurial persistence in the development stage of entrepreneurial enterprises (Holland & Garrett, 2015; Hechavarria et al., 2016). Traditional persistence studies have found that individual persistence is largely influenced by task attributes. When the attribute of the task is that continuous positive feedback can be obtained through hard work and persistence, and the individual has the opportunity to achieve the performance goal, the individual will often persist; but when the attribute of the task is high-risk, and the individual's ability is difficult to achieve the performance goal, the individual will often produce withdrawal behavior, and even encounter stress and depression. Due to the particularity and complexity of entrepreneurship, the entrepreneurial process is often described as the entrepreneur's grasp of opportunities amid risks, and the coexistence of risks and opportunities is clear at the initial stage of entrepreneurship. In this case, although entrepreneurial persistence is also affected by external factors such as the environment, resources, and conditions, the internal motivation of entrepreneurs' entrepreneurial persistence is more important. Therefore, this study will explore the causes of entrepreneurial persistence based on the perspective of intrinsic motivation. Entrepreneurial passion, as a motivating factor accompanied by strong positive emotion and identity, contains both emotional factors (positive and strong emotions) and cognitive factors (identification of the centrality of the entrepreneur's identity) from the connotation and extension of its concept. This study believes that entrepreneurial passion is

an important internal motivation factor for entrepreneurial persistence and will explore the impact mechanism of entrepreneurial passion on entrepreneurial persistence based on the dual paths of emotion and cognition.

### **Research objectives**

A large number of scholars and business management practitioners agree that persistent action strategies should be adopted in work and have confirmed the importance of persistence for continuous improvement of performance. With the rise of entrepreneurial activities, scholars have begun to pay attention to the role of persistence in entrepreneurial activities. When entrepreneurs can stick to their goals in adversity and continue to carry out positive behaviors, they can effectively improve the chances of survival of the enterprise. (Chen, 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett, 2015; Meek & Williams, 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016) formally proposed the concept of entrepreneurial persistence, and pointed out that entrepreneurial persistence can effectively improve the probability of entrepreneurial success. The effectiveness of the entrepreneurial enterprise development period is mainly reflected in ① being able to survive, ② being able to grow or develop, and ③ having a chance of success or sustainability. Empirical studies have shown that entrepreneurial persistence is conducive to the survival of entrepreneurial enterprises (Meek & Williams, 2018). Entrepreneurial persistence is conducive to entrepreneurs to cope with setbacks and adversity, and to overcome setbacks and adversity creatively, which is crucial for the survival and development of entrepreneurial enterprises and the realization of entrepreneurial success. Entrepreneurial persistence, as an application of persistence in the field of entrepreneurship, is a behavioral process with goal-oriented energy that shows persistence over time, and the goals involved refer to the success of entrepreneurial activities. In fact, entrepreneurial persistence plays an important role in the whole process of entrepreneurship. It not only helps entrepreneurs to continuously identify and grasp opportunities, invest resources, and establish enterprises in the early stage of entrepreneurship, but also helps entrepreneurs cope with the development process of entrepreneurial enterprises after establishment. complex challenges and sustain their own efforts in the meantime (Meek & Williams, 2018). Especially in the stage after the establishment of entrepreneurial enterprises, due to the high risk and high uncertainty attributes and characteristics of this stage, entrepreneurial persistence is of great significance to the survival and development of enterprises. Therefore, it is necessary to focus on the development period of entrepreneurial enterprises and continue to carry out research on entrepreneurship in the Chinese context, so as to improve entrepreneurs' ability to deal with uncertainty under the new economic normal and provide scientific research and management for high-quality development of entrepreneurship and entrepreneurship. Therefore, the core goal of this paper is to find out the influence path of entrepreneurial passion on entrepreneurial persistence as: 1. To evaluate if entrepreneurial passion positively affects entrepreneurial persistence. 2. To evaluate if entrepreneurial self-efficacy acts as the mediating role. 3. To explore if work vitality acts as the mediating role and 4. To explore how emotional intelligence regulate.

### **Research questions**

Based on the above problem statement, we found that the current research on the structural division of entrepreneurial persistence is relatively lacking. The existing single-dimensional division is difficult to explain entrepreneurial persistence in different scenarios, and it is difficult to fully display the dynamic characteristics of entrepreneurial persistence during the development period of entrepreneurial enterprises. The structural division of entrepreneurial persistence needs to be optimized. There is a lack of exploration of the internal motivation factors of entrepreneurial persistence from the perspective of cognitive and emotional

integration. Although entrepreneurial persistence will be affected by external driving factors such as the environment, resources, and conditions, the high-risk and high-uncertainty attributes attached to entrepreneurial activities mean that entrepreneurs have a strong acceptance and tolerance of external factors. Strengthen the role of the entrepreneur's intrinsic motivation. It is incomplete to explain the internal motivation of entrepreneurial persistence from the cognitive or emotional path alone. Entrepreneurial passion, as an internal motivation factor that includes both strong positive emotion and identity, is very important for the study of internal motivation of entrepreneurial persistence. Therefore, the specific questions to be addressed in this study are as follows: 1. Does entrepreneurial passion positively affect entrepreneurial persistence? 2. Does entrepreneurial self-efficacy act as the mediating role? 3. Does work vitality act as the mediating role? 4. How does emotional intelligence regulate?

### **Scope of study**

This study mainly explores the structure and measurement of entrepreneurial persistence during the development period of entrepreneurial enterprises, and the multi-level impact mechanism of entrepreneurial passion and team entrepreneurial passion on entrepreneurial persistence. Entrepreneurial persistence is an important factor affecting entrepreneurial success. Entrepreneurial passion, as an important motivation variable covering both emotional and cognitive factors, coordinates the entrepreneur's emotion, cognition, and behavior, enhances the entrepreneur's confidence and resilience in overcoming difficulties, and stimulates entrepreneurial persistence. important role in the process. Therefore, this study first constructs the structure of entrepreneurs' entrepreneurial persistence in the development period of entrepreneurial enterprises through multi-case grounded theory research and develops corresponding measurement methods. Research 1: Research on the structure and measurement of entrepreneurial persistence during the development period of entrepreneurial enterprises. Based on the analysis of grounded theory of multiple cases, a two-dimensional model structure of entrepreneurial persistence in the development period of entrepreneurial enterprises is constructed. Following the standard scale development process, develop an entrepreneurial persistence measurement scale to lay the foundation for subsequent empirical analysis. Study 2: Research on the influence mechanism of entrepreneurial passion on entrepreneurial persistence. Based on the refinement of practical problems and the review of relevant literature, a theoretical model of the mechanism of entrepreneurial passion's impact on entrepreneurial persistence is established based on the self-regulation theory; The intermediary mechanism of action.

### **Literature review**

#### **Entrepreneurial Persistence**

Persistence is produced by a strong goal orientation, and the process of persistently pursuing goals. Scholars define persistence as unwavering adherence to a goal or task. "Never give up" reflects the understanding of many scholars on persistence. They believe that persistence is the process of deliberately resisting the urge to give up and continuing to work hard to achieve goals in the process of pursuing goals. They innovated the classification of entrepreneurial persistence based on Schindehutte 's research conclusions and believed that it includes two aspects: persistence in time and persistence in adversity. Entrepreneurial persistence is compared with perseverance. Perseverance refers to an individual's enthusiasm and persistence for long-term goals and is a personality characteristic that characterizes individual willpower and psychological endurance (Chen 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett 2015; Meek & Williams 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016). There are significant individual differences in individual perseverance, and it is a relatively stable, unchangeable, and constructible construct that can be cultivated.

Perseverance is highly related to individual self-control and conscientiousness, but the emphasis is different. Perseverance can only be reflected in challenging work. It is manifested in the ability to maintain hard work and passion despite failures, adversity and stagnation. Just like running a marathon, the greatest advantage of perseverance is endurance. Compared with entrepreneurial persistence, although both emphasize the continuous pursuit of goals and positive responses to negative situations, the essence of the two is completely different. Perseverance is a stable personality trait, and entrepreneurial persistence is an individual decision-making or cognition and behavior. Secondly, in addition to emphasizing the content of persistence, perseverance also includes emotional factors such as interest and passion. Finally, perseverance does not involve individual cognitive processes, so perseverance will have a positive impact on performance, but the impact of entrepreneurial persistence on entrepreneurial performance is more complicated. Entrepreneurial persistence is compared with entrepreneurial resilience. Entrepreneurial resilience is an extension of psychological toughness in the field of entrepreneurship. Entrepreneurs in the uncertain entrepreneurial process can show good adaptability through self-regulation and external help, restore to the original state, and even surpass oneself, so as to obtain the ability of sustainable development and growth (Wang et al., 2021). Compared with entrepreneurial persistence, both emphasize not giving up in the face of negative feedback, but there is also a big difference between the two. Entrepreneurial resilience emphasizes the recovery process of the mental state under negative feedback, while entrepreneurial persistence emphasizes the decision-making or cognition and behavior of individuals not to give up under negative feedback. Secondly, entrepreneurial resilience must be triggered by negative situations or negative stimuli to activate entrepreneurial resilience, but entrepreneurial persistence, regardless of whether there is a negative situation or not, represents the entrepreneur's willingness to continue to pursue goals. Finally, entrepreneurial resilience, as a manifestation of individual psychological ability, will have a positive impact on entrepreneurial activities, but entrepreneurial persistence is a kind of cognition and behavior, and its impact on entrepreneurial activities depends on the influence of other boundary conditions (Chen, 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett, 2015; Meek & Williams, 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016).

### **Entrepreneurial Passion**

The concept of passion can be traced back to Aristotle's rhetoric, Spinoza's ethics, Machiavelli's prince, Bhagavad Gita and other works, which agree that passion is a strong emotion that can Long-lasting and powerful motivators to behavior. Passion has long been deeply rooted in the theory and practice of entrepreneurship. As early as 1951, Schumpeter's early writings began to use passion to explain entrepreneurial behaviors that violated the assumptions of rational people, such as abnormal risk-taking, strong persistence, and unshakable conviction. However, since many entrepreneurial theories are derived based on western scholars in the early 20th century, most of them pay more attention to rationality and avoid involving emotional issues. They believe that entrepreneurs are mysterious or even unknowable, a combination of special individuals and random environments. Risk takers, demand satisfyers, and opportunity sensitive people integrate resources in novel ways, create new companies, provide new services, create social value, and build disruptive industries. Although entrepreneurs initially rely mainly on their personal vision, goals, motivations, and actions, the assumptions about rational people in organizational theory focus on describing the cognitive and behavioral characteristics of entrepreneurs, ignoring their social attributes, and do not consider They are affected by emotions such as anxiety, hope, fear, excitement, and regret, and cannot fully present the essence of entrepreneurs. The important role of emotional factors in the entrepreneurial process, and believed that passion, rationality and ability are not opposed to

each other. Rationality and ability ensure the smooth establishment and healthy growth of enterprises, but the process must require the care of passion and expectation, became the foundation work of emotional research in the field of entrepreneurship. The relationship between entrepreneurs and entrepreneurial enterprises is like that between parents and children. The entire growth process needs to be devoted to cultivation, not only accompanied by self-sacrifice, but also requires strong emotions and deep identification, accompanied by irrational persistence and uncertain returns. Through this analogy, the importance of a strong emotional and intimate bond between the entrepreneur and the entrepreneurial venture is emphasized. After nearly 15 years of intensive research. Passion is increasingly recognized as a highly influential factor in the entrepreneurial process, outlasting behaviors caused by external forces or occasional emotions, has become an important driving force to promote the survival and development of entrepreneurial enterprises and promote enterprise transformation. Scholars at home and abroad have carried out a lot of research on the connotation of entrepreneurial passion and endowed entrepreneurial passion with different meanings based on different theoretical perspectives.

### **Entrepreneurial Self-Efficacy**

Entrepreneurial self-efficacy is an important predictor variable for entrepreneurial attitudes and behaviors and is one of the key factors for identifying whether an individual is a potential entrepreneur. Self-efficacy is not the ability that an individual possesses, but the degree of confidence that an individual can achieve a given goal by performing a certain behavior on himself. The concept and theory of self-efficacy proposed by Bandura into the field of entrepreneurial research for the first time, and defined it as "Entrepreneurial Self-efficacy", its connotation is the individual's self-belief and self-confidence in whether he can complete the entrepreneurial task and successfully start a business. Entrepreneurial self-efficacy makes the unique application of self-efficacy in the field of entrepreneurship, and this concept has been recognized in the academic circle, and extensive and in-depth research has been carried out. Entrepreneurial self-efficacy is a core component of social cognitive theory in the field of entrepreneurship, which motivates entrepreneurs' willingness to achieve their goals and expectations. (Chen, 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett, 2015; Meek & Williams, 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016) pointed out that entrepreneurial self-efficacy is an individual's belief in their ability to succeed and their ability to deal with challenges and opportunities in the entrepreneurial process. Entrepreneurial self-efficacy is an important part of entrepreneurial motivation. Entrepreneurs with strong entrepreneurial self-efficacy have better self-awareness and believe that they have the ability to establish and operate enterprises, although this process will be affected by the high uncertainty of the entrepreneurial environment and the effect of ambiguity. In general, scholars believe that entrepreneurial self-efficacy is relatively stable, but it will also change with the individual's own factors and the external environment. It reflects entrepreneurs' potential evaluation of self-ability and judgment of confidence in whether individuals can achieve entrepreneurial tasks and is a key motivation factor for predicting entrepreneurs' persistence in entrepreneurship.

### **Work Vitality**

Work vitality comes from the concept of work prosperity, which refers to the state of positive emotional experience perceived by individuals and awakened by positive energy. Work vitality refers to the individual's feeling of being full of power, which represents the degree of activity to work, including treating work with excitement, enthusiasm, and enthusiasm, rather than giving up halfway. Work vitality makes individuals feel the purpose and sense of meaning of behavior, which makes individuals more actively involved in work and achieves better



performance. In other words, when the work vitality is high, the individual's thinking is more agile, and the work efficiency is higher. Vitality at work is an intensifying experience because people try to enhance, prolong, or reproduce situations that they perceive to increase vitality, while they attempt to reduce or avoid situations that they perceive to decrease vitality. People who feel energetic tend to view events positively and expect positive events to happen again. Work vitality will affect people's efforts in activities, and studies have shown that individuals with higher work vitality are more inclined to continuously invest in entrepreneurial activities and achieve better entrepreneurial performance (Chen 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett 2015; Meek & Williams 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016).

### **Emotional Intelligence**

The emergence of the concept of emotional intelligence represents the pursuit of human beings for the emotional world and humanistic care in the current era, and it is a further satisfaction of human beings for the realization of self-worth and spiritual needs. The concept of emotional intelligence for the first time, defining emotional intelligence as the ability of individuals to perceive the emotions and emotions of themselves and others in real time, and use the perceived information to guide their own thoughts and actions. Ability is generally used to describe the individual's ability to recognize, evaluate, control, and utilize the emotions of self and others. Later, with the continuous enrichment of research perspectives, three representative views of the connotation of emotional intelligence emerged at the operational level: emotional intelligence ability, trait emotional intelligence, and mixed emotional intelligence. Emotional intelligence research focuses on the differences in the ability of individuals to assess emotions (emotional manipulation, emotional regulation, etc.), commonly used to assess the emotional intelligence of practitioners in organizational settings. Trait Emotional Intelligence emphasizes individual differences in cognition, evaluation, control and utilization of emotions and emotions. Research based on Trait Emotional Intelligence can effectively predict individuals' cognition, emotion, work attitude and work behavior. Mixed emotional intelligence is a combination of ability perspective and trait perspective. It mainly focuses on the individual's perception and processing state of emotion and emotion (including both ability and tendency). Emotional intelligence has a similar predictive effect, with a moderate predictive effect, but because the mixed type can use 360-degree evaluation, it is usually used in training scenarios. Although scholars have put forward different interpretations of the connotation of emotional intelligence from different research perspectives, these perspectives all include four aspects of emotional intelligence (1) Sensing emotions (perceiving emotions of oneself and others), (2) Regulating emotions of oneself, (3) Regulating emotions of others (the social dimension of emotional intelligence), and (4) Using emotions strategically. Since the research on emotional intelligence based on the trait perspective has a strong predictive effect on individual cognition, behavior and performance, it is suitable as a boundary condition in the research, so this paper uses the connotation of trait emotional intelligence to conduct research. (Chen 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett 2015; Meek & Williams 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016)

### **Methodology**

#### **Research Design**

##### **1. Build a theoretical model**

Explain the theoretical basis of the research and establish the research model. Based on clarifying the research questions and literature review, it is found that the self-regulation theory can effectively explain the dynamic adjustment process of entrepreneurs' own emotion

and cognition in the development stage of entrepreneurial enterprises. Therefore, this study is based on the self-regulation theory, constructing the influence mechanism and mechanism model of entrepreneurial passion on entrepreneurial persistence at the individual level of entrepreneurs. It provides a theoretical basis for the follow-up research content.

## 2. Empirical Analysis and Hypothesis Testing

First, design the research process and survey questionnaire for empirical analysis, select entrepreneurs who meet the theme of this research as samples, and select appropriate measurement scales to form the survey questionnaire according to the core concepts involved in the hypothesis. Among them, the entrepreneur questionnaire mainly involves: Entrepreneurial Passion, Entrepreneurial Persistence, Emotional Intelligence, Entrepreneurial Self-efficacy, and Work Vitality Scale; SPSS, AMOS and other software are used to test the reliability and validity of the theoretical research model. Secondly, further use hierarchical regression analysis, structural equation model, Bootstrap, cross-level regression analysis and other methods to carry out empirical analysis and hypothesis testing on the theoretical research model of entrepreneurs and discuss the test results.

## 3. Provide management implications and practical suggestions

Based on the research conclusions of this study, from the structure and measurement of entrepreneurial persistence, the transformation mechanism of entrepreneurial passion to entrepreneurial persistence, it is proposed to establish correct entrepreneurial values, pay attention to the cognitive factors and emotional factors of entrepreneurs, and from the individual level of entrepreneurs and society, and practical recommendations are made at the level.

## Data collection

Data collection and sample selection are important parts of the questionnaire survey and play a decisive role in the results of data analysis. This survey selected entrepreneurs who participated in the entrepreneurial training courses entrusted by the government of Sun Yat-sen University and Jinan University as the main research objects. Through communication with the head teachers of the entrepreneurial training courses, qualified entrepreneurs were selected to participate after obtaining survey support. This survey. A total of 450 entrepreneurs were selected as a sample. These entrepreneurial enterprises are mainly engaged in the electronic information industry, cultural and creative industry, financial industry, medical and health industry, education industry and other business content. Before starting the survey, first contact the entrepreneur directly. The conditions for participating in the survey are: (a) The entrepreneur is an opportunistic entrepreneur and has officially registered the entrepreneurial enterprise; (b) The entrepreneurial direction and field are clear, and the actual business has been carried out; (c) The entrepreneurial enterprise is currently in the development stage and seeks market expansion. To ensure that the questionnaire has good validity, this study mainly adopts the form of on-site survey and return questionnaire for data collection. After determining the research object, each entrepreneur is numbered, and each entrepreneur needs to fill in his own number on the questionnaire when answering. Each questionnaire consists of three parts. The first part is the introduction, which mainly introduces the purpose of the survey and the promise of anonymity and confidentiality, so as to reduce the psychological pressure and burden of the respondents; the second part is the basic information survey, including the entrepreneur's gender, age, educational background, marital status, entrepreneurial time, entrepreneurial field, etc.; the third part is the main core variables, including entrepreneurial passion, entrepreneurial persistence, entrepreneurial self-efficacy, work vitality and emotional intelligence. During the period from October to December 2022, 450 questionnaires were distributed through the WeChat group of the class by using the

questionnaire star link, 432 questionnaires were recovered, and 422 valid questionnaires were retained after excluding invalid questionnaires 93.78 %.

### **Target population**

The term "target population" refers to a certain group of people that the researchers would like to focus their attention on while carrying out the study (Sekaran & Bougie, 2016). There are many distinct target groups that may be found in various types of research; therefore, we need to choose which target population will provide us with the best opportunities to collect data and information for our study. This survey selected entrepreneurs who participated in the entrepreneurial training courses entrusted by the government of Sun Yat-sen University and Jinan University as the main research objects. Through communication with the head teachers of the entrepreneurial training courses, qualified entrepreneurs were selected to participate after obtaining survey support. This survey. A total of 450 entrepreneurs were selected as a sample. These entrepreneurial enterprises are mainly engaged in the electronic information industry, cultural and creative industry, financial industry, medical and health industry, education industry and other business content. Before starting the survey, first contact the entrepreneur directly. The conditions for participating in the survey are: (a) The entrepreneur is an opportunistic entrepreneur and has officially registered the entrepreneurial enterprise; (b) The entrepreneurial direction and field are clear and the actual business has been carried out; (c) The entrepreneurial enterprise is currently in the development stage and seeks market expansion.

### **Sampling frame and sampling location**

The sample frame of this paper is for entrepreneurs from all over China, but for the convenience of sampling, the sampling objects for this time are students participating in entrepreneurship training courses at Sun Yat sen University and Jinan University. All participants in the sample survey have the qualifications of entrepreneurs.

### **Sampling size**

The size of the sample that is collected from the whole population is known as the sampling size. The size of the sample should be large enough to eliminate the possibility of sampling errors and biases (Gill, Johnso 8, 1 8 0 n & Clark, 2014). Full population research will be impractical and prohibitively expensive to carry out; instead, establishing a sampling size will be the most effective way to cut down on the time and money required to carry out a study. For the purpose of our study, the population that we focused on consisted of 450 entrepreneurs in entrepreneurship training courses at Sun Yat sen University and Jinan University.

### **Questionnaire design and instrumentation**

The research model in this chapter mainly involves variables such as entrepreneurial passion, emotional intelligence, entrepreneurial self-efficacy, work vitality, and entrepreneurial persistence. The variables in this study were measured using scales that are more mature and widely used. Since some scales are derived from foreign research, to ensure the semantic integrity of the scale items, all scales adopt the process of "translation -back-translation-re-translation" to ensure the accuracy of expression (see the appendix for the measurement questionnaire 2). All core variables were measured using a Likert-5 point scale, in which "1=very disagree", "2=disagree", "3=not sure", "4=conform" and "5=very conform". The measurement scales used for the core variables are as follows:

Entrepreneurial passion: Since the core of this study is the entrepreneurial persistence of entrepreneurs in the development stage of entrepreneurial enterprises, this study focuses on the entrepreneurial passion of entrepreneurs for the development of enterprises. The

measurement of entrepreneurial passion adopts the measurement scale developed by Cardon et al., (2013). The scale divides entrepreneurial passion into three parts: opportunity identification (entrepreneurial passion of the inventor), enterprise establishment (entrepreneurial passion of the founder), and enterprise development (entrepreneurial passion of the developer), each of which includes strong positive emotions and a clear identity. Identify two dimensions. The positive emotion dimension of the scale is comprehensively reflected and measured by 3 items, and the identity dimension is measured by 1 identity-centric item, including 4 items in total, including "developing the company is an important part of my identity as an entrepreneur. Finding the right people to work for my company is exciting, pushing my employees and myself to make the company better is what drives me, and I absolutely love finding the right people to promote our company's products or services."

2. Entrepreneurial persistence: The measurement of entrepreneurial cognitive persistence in this study is mainly based on the scale developed by Xie et al., (2020). The measurement of entrepreneurial behavior persistence is mainly based on Baum and Locke (2004), Xie and Huang (2014), Shan et al., (2015), Senyard et al., (2009) designed and revised the scales developed, and established a survey scale for entrepreneurial persistence, including two dimensions and 14 items. Among them, entrepreneurial cognition persistence includes 7 items, and entrepreneurial behavior persistence includes 7 items.

3. Entrepreneurial self-efficacy: This study uses four items specially developed by Zhao et al., (2005) for entrepreneurial self-efficacy to measure. Participants were asked to indicate their relative level of confidence in their ability to perform specific entrepreneurial tasks as entrepreneurs. These specific entrepreneurial tasks include "identifying the entrepreneurial environment, creating new products or services, thinking creatively, and making decisions under uncertainty." Although Bandura (2006) pointed out that task-specific self-efficacy can be generalized to other tasks, it is more accurate to use this method to measure entrepreneurial self-efficacy in entrepreneurial contexts. Murnieks et al., (2014) and Newman et al., (2019) both used this scale to measure entrepreneurial self-efficacy.

4. Work vitality: This study uses the scale developed by Porath et al., (2012) to measure the work vitality of entrepreneurs. In the study of Porath et al., work vitality was taken as one of the dimensions of job prosperity, including 5 measurement items. Sample topics include "In entrepreneurship, I feel energized, In entrepreneurship, I have energy and energy, In entrepreneurship, I don't feel energized, In entrepreneurship, I feel sharp and clear, I look forward to every day arrival".

5. Emotional intelligence: This study uses the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) to measure the trait emotional intelligence of entrepreneurs. The scale includes 30 items, reflecting 4 dimensions and 15 aspects, including: emotionality (empathy, emotional perception, emotional expression, and emotional relationship), self-control (emotional control, stress management, impulse control, self-motivation and adaptability), sociability (emotional management, assertiveness, and social awareness), and well-being (traits of optimism, self-esteem, and happiness). Example items include " Verbalizing my emotions is not a problem for me, I am generally able to influence other people's feelings, I generally have difficulty regulating my emotions (reverse scoring), I cannot figure out What is the feeling (reverse scoring) ", etc. Using the TEIQue-SF scale to measure trait emotional intelligence has high reliability. The reliability of a coefficient of this scale is usually higher than 0.80, and never lower than 0.70 in all their studies.

| serial | project  |
|--------|--|
| 1      | Even in the face of setbacks and adversity, I still actively communicate with        |
| 2      | I will continue to think about how to develop the enterprise from the                |
| 3      | I am keenly aware of the possible risks of the enterprise                            |
| 4      | In the face of setbacks and adversity, I will reflect on my mistakes and             |
| 5      | In the face of setbacks and adversity, I will sum up my experience to deal with      |
| 6      | I think about every piece of information I get                                       |
| 7      | I will continue to evaluate the current entrepreneurial environment and deal         |
| 8      | Even in the face of setbacks and adversity, I will continue to work hard to start    |
| 9      | Even in the face of more attractive employment opportunities, I will still           |
| 10     | Even in the face of setbacks and adversity, I can still adjust as soon as possible   |
| 11     | When others have withdrawn from entrepreneurial activities, I will ponder            |
| 12     | Even in the face of setbacks and adversity, I will still fully explore and integrate |
| 13     | Even in the face of setbacks and adversity, I will continue to integrate existing    |
| 14     | I will continue to integrate existing resources to deal with unknown                 |
| 15     | In my workplace, people generally feel that the current position has good job        |

| serial | project  |
|--------|--|
| 1      | Growing a company is a big part of my entrepreneurial identity               |
| 2      | Hiring the right people to work for my company is exciting                   |
| 3      | Making the company better is what drives me and my employees                 |
| 4      | I really like finding the right people to promote our company's              |
| 5      | For me, expressing my emotions in words is not a problem.                    |
| 6      | I often find it difficult to see things from another person's point of view. |
| 7      | Overall, I am a very driven person.  |
| 8      | I often have difficulty regulating my emotions.                              |
| 9      | I often feel that my life is not happy.                                      |
| 10     | I can deal with people effectively.  |
| 11     | I change my mind often.  |
| 12     | Many times I can't articulate the emotions I feel.                           |
| 13     | I think I have many good qualities.  |
| 14     | I find it often difficult for me to stand up for my views and standpoints.   |
| 15     | I am usually able to influence how other people feel about things.           |
| 16     | Overall, I'm pessimistic about most things.                                  |
| 17     | Friends around me often complain that I am unfair to them.                   |
| 18     | I often find it difficult for me to adapt to changes in my environment.      |
| 19     | Overall, I was able to handle stress.  |
| 20     | I find it difficult to express my emotions to those close to me.             |
| 21     | Usually I can put myself in someone else's shoes and understand their        |
| 22     | I found it hard to stay motivated.   |
| 23     | I can usually find ways to control my emotions if I want to.                 |
| 24     | In general, I am very satisfied with my life.                                |
| 25     | I consider myself a good negotiator.   |
| 26     | I tend to get involved in things that I later wish I could get out of.       |
| 27     | I often stop and think about how I feel.                                     |
| 28     | I think I have a lot of personal strengths.                                  |
| 29     | I tend to "give in" even when I know I'm right.                              |
| 30     | I don't seem to have any influence over other people's emotions.             |
| 31     | Usually I trust my life to turn out well.                                    |
| 32     | I found it difficult to maintain good relationships with people, even        |
| 33     | Usually I can adapt to new surroundings.                                     |
| 34     | Others admire my relaxed mind.   |

| serial | project   |
|--------|---|
| 1      | I am confident in my ability to identify entrepreneurial environments |

|   |  |
|---|--|
| 2 | I am confident in my ability to create new products or services  |
| 3 | I am confident in my creative thinking                           |
| 4 | I am confident in my ability to make decisions under uncertainty |
| 5 | In entrepreneurship, I feel alive                                |
| 6 | In entrepreneurship, I have energy and energy                    |
| 7 | In starting a business, I feel low on energy                     |
| 8 | In entrepreneurship, I feel sharp and sober                      |
| 9 | I look forward to every day                                      |

## Findings

### Demographic Profile

The statistics of the basic characteristics of the samples in this study are shown in Table 4-1 . From the perspective of gender structure, there are more men in the sample, with 205 men, accounting for 51.40%, and 217 women, accounting for 48.60%. From the perspective of marital status, more than half of the respondents are married, with 295 people, accounting for 69.90% , there are 69 unmarried respondents, accounting for 16.40%. From the perspective of age structure, the survey samples are mainly concentrated between 26-35 years old, accounting for 66.40%. From the perspective of educational background, the main educational background of the respondents is a bachelor Among the above, undergraduates and postgraduates accounted for 52.84% and 37.20% respectively; from the perspective of entrepreneurial years, the respondents were mainly entrepreneurs with 3 and 2 years of entrepreneurship, accounting for 44.50% and 23.50% respectively, followed by those with 4 years of entrepreneurship Entrepreneurs account for 20.90%. In addition, there are a small number of entrepreneurs who have started their business for one year and five years or more, accounting for 8.80% and 2.60% respectively. From the perspective of industry categories, most of the respondents are from the electronic information industry, cultural and creative industry and financial industry, accounting for 28.90%, 28.20% and 24.90% respectively. The rest of the respondents are from the medical and health industry and the education industry, accounting for 12.30% respectively and 5.70%.

**Table4- 1Sample Basic Information Statistics**

| variable                  | category                       | quantity | Proportion |
|---------------------------|--------------------------------|----------|------------|
| gender                    | male                           | 205      | 51.40%     |
|                           | female                         | 217      | 48.60%     |
| marital status            | unmarried                      | 69       | 16.40%     |
|                           | Married                        | 295      | 69.90%     |
|                           | other                          | 58       | 13.70%     |
| age                       | 25 and under                   | 59       | 14.00%     |
|                           | 26-35 years old                | 280      | 66.40%     |
|                           | 36-45 years old                | 40       | 9.50%      |
|                           | 46-55 years old                | 26       | 6.20%      |
|                           | 56 years and over              | 17       | 4.00%      |
| academic qualifications   | high school and below          | 6        | 1.42%      |
|                           | junior college                 | 36       | 8.54%      |
|                           | undergraduate                  | 223      | 52.84%     |
|                           | postgraduate                   | 157      | 37.20%     |
| industry category         | Healthcare Industry            | 52       | 12.30%     |
|                           | Education industry             | 24       | 5.70%      |
|                           | Financial sector               | 105      | 24.90%     |
|                           | Cultural and creative industry | 119      | 28.20%     |
|                           | Electronic information         | 122      | 28.90%     |
| Years of Entrepreneurship | of 1 year                      | 37       | 8.80%      |
| Entrepreneurship          | 2 years                        | 99       | 23.50%     |
|                           | 3 years                        | 187      | 44.50%     |
|                           | 4 years                        | 88       | 20.90%     |
|                           | over 5 years                   | 11       | 2.60%      |

## Reliability and Validity

### Reliability analysis

This study uses SPSS 26.0 software to analyze the reliability of the five entrepreneurial core variable measurement scales of entrepreneurial passion, entrepreneurial persistence, entrepreneurial self-efficacy, work vitality, and emotional intelligence. The reliability analysis results are shown in Table 3-1. Show. It shows that the scales in this questionnaire have high stability and reliability.

**Table3- 1Reliability test of each scale at the individual level**

| variable                      | Number of items | Overall Cronbach 's alpha |
|-------------------------------|-----------------|---------------------------|
| Entrepreneurial persistence   | 14              | 0 . 886                   |
| entrepreneurial self-efficacy | 4               | 0 . 836                   |
| work vitality                 | 5               | 0 . 853                   |
| emotional intelligence        | 30              | 0 . 749                   |
| Entrepreneurial passion       | 4               | 0 . 869                   |

### Validity test

Entrepreneurs' entrepreneurial persistence has passed the exploratory test of large sample research. The following uses SPSS26.0 software to conduct exploratory factor analysis on the scales of entrepreneurial passion, emotional intelligence, entrepreneurial self-efficacy, and work vitality.

#### (1) Entrepreneurial Passion Scale

The KMO test of entrepreneurial passion shows that the KMO value is 0.807, and the significance of the Bartley sphericity test is less than 0.001 (see Table 3-2), indicating that factor analysis is suitable for entrepreneurial passion in this study. The results of exploratory factor analysis of entrepreneurial passion showed that a total of 1 component was extracted, and the factor loadings on the components were all over 0.8, which is in line with the dimension division in this study that only focuses on developer identity and entrepreneurial passion. The cumulative variance explained reached 67.23%, indicating that the scale has good applicability in this study (see Table 3-3).

**Table3- 2KMO test value of factor analysis of Entrepreneurial Passion Scale**

| Kai ser-Meyer-Olkin             |                        | 0.807     |
|---------------------------------|------------------------|-----------|
| Bartlett 's test for sphericity | Approximate chi-square | 637 . 442 |
|                                 | df                     | 6         |
|                                 | Sig.                   | 0.000     |

**Table3- 3Results of exploratory factor analysis of entrepreneurial passion**

| serial number | project one   | Element   |
|---------------|---|-----------|
|               |   | <b>F1</b> |
| 1             | Growing a company is a big part of my entrepreneurial identity              | 0.884     |
| 2             | Hiring the right people to work for my company is exciting                  | 0.828     |
| 3             | Making the company better is what drives me and my employees                | 0.806     |
| 4             | I really like finding the right people to promote our company's products or | 0.801     |
|               | cumulative explanatory power  | 67.23%    |

#### (2) Entrepreneurship Persistence Scale

The KMO test of entrepreneurial persistence shows that the KMO value is 0.883, and the significance of the Bartley sphericity test is less than 0.001 (see Table 3-4), indicating that factor analysis is suitable for entrepreneurial persistence in this study. The results of exploratory factor analysis of entrepreneurial persistence show that two components are extracted, and the factor loadings on the components are all over 0.8, which is in line with the

dimension division of entrepreneurial persistence in this study. Discriminant validity: The exploratory factor analysis process in the above analysis process of this study shows that the items of the two dimensions of entrepreneurial persistence show the largest load on the dimension, which shows that there is a significant relationship between entrepreneurial cognitive persistence and entrepreneurial behavior persistence. There are differences; the confirmatory factor analysis process shows that the measurement items of the two dimensions of entrepreneurial cognition persistence and entrepreneurial behavior persistence are in good agreement with the theoretical dimension and can be measured by the 14-item scale developed above. Show good reliability and applicability. (See Table 3- 5).

**Table3- 4KMO test value of factor analysis of entrepreneurial persistence scale**

|                                 |                        |            |
|---------------------------------|------------------------|------------|
| Kai ser-Meyer-Olkin             |                        | 0.883      |
| Bartlett 's test for sphericity | Approximate chi-square | 1025 . 426 |
|                                 | df                     | 91         |
|                                 | Sig.                   | 0.000      |
| Cronbach 's α                   | 0.945                  |            |

**Table3- 5Results of exploratory factor analysis of entrepreneurial persistence**

| serial number | project   | Element        |                |
|---------------|---|----------------|----------------|
|               |   | F1             | F 2            |
| AA 1          | Even in the face of setbacks and adversity, I still actively communicate with others and get      | <b>0 . 907</b> | 0 . 238        |
| AA 2          | I will continue to think about how to develop the enterprise from the perspective of customers    | <b>0 . 863</b> | 0 . 272        |
| AA 3          | I have a keen sense of the possible risks of the enterprise.                                      | <b>0 . 849</b> | 0 . 155        |
| AA 4          | In the face of setbacks and adversity, I will reflect on my mistakes and deficiencies, and seek   | <b>0 . 848</b> | 0 . 291        |
| AA 5          | In the face of setbacks and adversity, I will sum up my own experience to deal with it.           | <b>0 . 837</b> | 0 . 270        |
| AA 6          | I will continue to evaluate the current entrepreneurial environment and deal with possible        | <b>0 . 795</b> | 0 . 305        |
| AA 7          | Even in the face of setbacks and adversity, I continue to identify                                | <b>0 . 794</b> | 0.232          |
| BB1           | Even in the face of setbacks and adversity, I will continue to work hard to start a business.     | 0 . 230        | <b>0 . 911</b> |
| BB2           | Even in the face of more attractive employment opportunities, I will still choose to continue to  | 0 . 189        | <b>0 . 908</b> |
| BB 3          | Even when I encounter setbacks and adversity, I can still adjust as soon as possible and continue | 0 . 276        | <b>0 . 889</b> |
| BB 4          | Even in the face of setbacks and adversity, I will still fully explore and integrate existing     | 0 . 153        | <b>0 . 843</b> |
| BB 5          | Even in the face of setbacks and adversity, I will continue to study.                             | 0 . 328        | <b>0 . 815</b> |
| BB6           | I often learn by observing the behavior, actions or results of other businesses.                  | 0 . 280        | <b>0 . 798</b> |
| BB 7          | I will often summarize past entrepreneurial experience and learn from it.                         | 0 . 377        | <b>0 . 624</b> |

Extraction method: principal component analysis.

Convergent validity: Convergent validity refers to the aggregation of different measurement indicators when measuring latent variables, which is characterized by the degree of correlation between measurement indicators. This study uses combination reliability CR and average variance extraction AVE to test. In this study, the combination reliability CR of the two dimensions of entrepreneurial cognition persistence and entrepreneurial behavior persistence in entrepreneurial persistence are 0.948 and 0.950 respectively, and the average variance extraction The AVEs are 0.724 and 0.733 respectively (see Table 3-6), indicating that the scale has good convergent validity.

**Table3- 6Convergent validity of each dimension of Entrepreneurship Persistence Scale**

| dimension                            | CR    | AVE   |
|--------------------------------------|-------|-------|
| Persistence in Entrepreneurship      | 0.948 | 0.724 |
| Entrepreneurial Behavior Persistence | 0.950 | 0.733 |
| evaluation standard                  | >0.7  | >0.5  |



**(3) Entrepreneurial Self-Efficacy Scale**

KMO test of the Entrepreneurial Self-Efficacy Scale shows that the KMO value is 0.829, and the significance of Bartley's spherical test is less than 0.001 (see Table 3-7), indicating that factor analysis is suitable for entrepreneurial self-efficacy in this study. The results of exploratory factor analysis of entrepreneurial self-efficacy showed that a total of 1 component was extracted, and the factor loadings on the components were all over 0.8, which conformed to the division of dimensions of the entrepreneurial self-efficacy scale. The cumulative variance explained reached 71.96%, indicating that the scale has good applicability in this study (see Table 3-8).

**Table3- 7KMO test value of factor analysis of entrepreneurial self-efficacy scale**

|                                 |                        |         |
|---------------------------------|------------------------|---------|
| Kaiser-Meyer-Olkin              |                        | 0.829   |
| Bartlett 's test for sphericity | Approximate chi-square | 815.949 |
|                                 | df                     | 6       |
|                                 | Sig.                   | 0.000   |

**Table3- 8Results of exploratory factor analysis of entrepreneurial self-efficacy scale**

| serial number                | project   | Element<br>F1 |
|------------------------------|---|---------------|
| 1                            | I am confident in my ability to identify entrepreneurial environments | 0.882         |
| 2                            | I am confident in my ability to create new products or services       | 0.866         |
| 3                            | I am confident in my creative thinking                                | 0.840         |
| 4                            | I am confident in my ability to make decisions under uncertainty      | 0.803         |
| cumulative explanatory power |   | 71.96%        |

**(4) Work Vitality Scale**

KMO test of the Work Vitality Scale showed that the KMO value was 0.861, and the Bartley sphericity test was significantly less than 0.001 (as shown in Table 3-9 ), indicating that the work vitality in this study is suitable for factor analysis. The results of the exploratory factor analysis of work vitality showed that a total of 1 component was extracted, and the factor loadings on the components were all over 0.7, which was in line with the division of the dimensions of the work vitality scale. The cumulative variance explained reached 63.30%, indicating that the scale has good applicability in this study ( see Table 3-10 ).

**Table3- 9KMO test value of factor analysis of work vitality scale**

|                                 |                        |         |
|---------------------------------|------------------------|---------|
| Kaiser-Meyer-Olkin              |                        | 0.861   |
| Bartlett 's test for sphericity | Approximate chi-square | 855.866 |
|                                 | df                     | 10      |
|                                 | Sig.                   | 0.000   |

**Table3- 10The results of exploratory factor analysis of work vitality scale**

| serial number                | project                                       | Element<br>F1 |
|------------------------------|---|---------------|
| 1                            | In entrepreneurship, I feel alive             | 0.833         |
| 2                            | In entrepreneurship, I have energy and energy | 0.832         |
| 3                            | In starting a business, I feel low on energy  | 0.812         |
| 4                            | In entrepreneurship, I feel sharp and sober   | 0.768         |
| 5                            | I look forward to every day                   | 0.728         |
| cumulative explanatory power |   | 63.30%        |

( 5) Emotional Intelligence Scale

The KMO test of emotional intelligence showed that the KMO value was 0.949, and the significance of Bartlett's spherical test was less than 0.001 (see Table 3-11), indicating that factor analysis is suitable for emotional intelligence in this study. The results of exploratory factor analysis of emotional intelligence showed that 4 components were extracted, and the factor loadings on the components were all greater than 0.6, which met the division of dimensions of the trait emotional intelligence scale. The cumulative variance explained reached 66.19%, indicating that the scale has good applicability in this study (see Table 3-12).

**Table3- 11KMO test value of emotional intelligence factor analysis**

|                                 |                        |           |
|---------------------------------|------------------------|-----------|
| Kaiser-Meyer-Olkin              |                        | 0.949     |
| Bartlett 's test for sphericity | Approximate chi-square | 20695.421 |
|                                 | df                     | 435       |
|                                 | Sig.                   | 0.000     |

**Table3- 12 Emotional Intelligence Scale Exploratory Factor Analysis Results**

| serial numbe                 | project  | Element |       |       |       |
|------------------------------|--|---------|-------|-------|-------|
|                              |  | F1      | F2    | F3    | F4    |
| 1                            | I often stop and think about how I feel.                                     | 0.847   |       |       |       |
| 2                            | Many times I can't articulate the emotions I feel.                           | 0.832   |       |       |       |
| 3                            | For me, expressing my emotions in words is not a problem.                    | 0.822   |       |       |       |
| 4                            | I find it difficult to express my emotions to those close to me.             | 0.809   |       |       |       |
| 5                            | I don't seem to have any influence over other people's emotions.             | 0.804   |       |       |       |
| 6                            | I am usually able to influence how other people feel about things.           | 0.797   |       |       |       |
| 7                            | I found it difficult to maintain good relationships with people, even those  | 0.758   |       |       |       |
| 8                            | I can deal with people effectively.  | 0.758   |       |       |       |
| 9                            | I often have difficulty regulating my emotions.                              |         | 0.852 |       |       |
| 10                           | I can usually find ways to control my emotions if I want to.                 |         | 0.842 |       |       |
| 11                           | I think I have many good qualities.  |         | 0.833 |       |       |
| 12                           | I think I have a lot of personal strengths.                                  |         | 0.820 |       |       |
| 13                           | Overall, I was able to handle stress.  |         | 0.814 |       |       |
| 14                           | Others admire my relaxed mind.   |         | 0.798 |       |       |
| 15                           | I often find it difficult for me to adapt to changes in my environment.      |         | 0.787 |       |       |
| 16                           | Usually I can adapt to new surroundings.                                     |         | 0.731 |       |       |
| 17                           | I tend to "give in" even when I know I'm right.                              |         | 0.705 |       |       |
| 18                           | I tend to get involved in things that I later wish I could get out of.       |         | 0.671 |       |       |
| 19                           | I often find it difficult to see things from another person's point of view. |         |       | 0.740 |       |
| 20                           | Usually I can put myself in someone else's shoes and understand their        |         |       | 0.731 |       |
| 21                           | Overall, I am a very driven person.  |         |       | 0.712 |       |
| 22                           | I found it hard to stay motivated.   |         |       | 0.712 |       |
| 23                           | I consider myself a good negotiator.   |         |       | 0.707 |       |
| 24                           | Friends around me often complain that I am unfair to them.                   |         |       | 0.699 |       |
| 25                           | Overall, I'm pessimistic about most things.                                  |         |       |       | 0.813 |
| 26                           | Usually I trust my life to turn out well.                                    |         |       |       | 0.808 |
| 27                           | I often feel that my life is not happy.                                      |         |       |       | 0.753 |
| 28                           | In general, I am very satisfied with my life.                                |         |       |       | 0.751 |
| 29                           | I change my mind often.  |         |       |       | 0.685 |
| 30                           | I find it often difficult for me to stand up for my views and standpoints.   |         |       |       | 0.679 |
| cumulative explanatory power |  | 66.193% |       |       |       |

## Conclusion

1. Entrepreneurship persistence in the development period of entrepreneurial enterprises includes two dimensions.

This study constructs two dimensions of entrepreneurial persistence during the development period of entrepreneurial enterprises and develops an entrepreneurial persistence measurement scale including 14 items. First, using behavioral event interviews, biographical material collection and other methods to obtain multi-case text data, and based on the research ideas of grounded theory to analyze the text data, this study proposes that the persistence of entrepreneurial enterprises in the development period includes two aspects: entrepreneurial cognitive persistence and entrepreneurial behavior persistence. Secondly, according to the development process of the standard scale, using the results of multi-case analysis as the specific measurement index, combined with the existing measurement scale and exploratory research methods, an initial measurement scale for entrepreneurial persistence was designed. Through small-scale pre-test and large-scale sample survey conducted to test the validity and reliability of the measurement scale, and finally developed the entrepreneurial persistence measurement scale including 14 items in the development stage of entrepreneurial enterprises. Among them, entrepreneurial cognition persistence includes 7 items, and entrepreneurial behavior persistence includes 7 items. Finally, based on the Goal Adjustment Theory, Information Processing Theory, and Goal Pursuit related research, the structural division of entrepreneurial persistence is discussed, which further enriches the theoretical perspective of entrepreneurial persistence research. (Chen 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett 2015; Meek & Williams 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016)

The structure of entrepreneurial persistence in the development period of entrepreneurial enterprises constructed by this research can more completely reveal the entrepreneurial persistence in different entrepreneurial situations and reflect the dynamic characteristics of entrepreneurs' entrepreneurial persistence in the process of enterprise development. Previous studies on the structure of entrepreneurial persistence were mainly based on motivation theory and self-control theory. Entrepreneurial persistence was regarded as a single dimension with "resistance to give up" as the core. Sticking to the measurement, these theories provide a plausible explanation for how entrepreneurs can continue to start a business in the face of setbacks and difficulties, as well as other temptations. However, there is a big difference between the entrepreneurial persistence in the development process of entrepreneurial enterprises and the entrepreneurial persistence in the initial stage of entrepreneurship. Unaffected by factors under the control of entrepreneurs, it is difficult to sustain entrepreneurial activities. The research on serial entrepreneurs and entrepreneurial failure recovery shows that even in the face of entrepreneurial failure, entrepreneurs can still continue to carry out new entrepreneurial opportunity identification, entrepreneurial learning activities, and strive to return to entrepreneurship. Entrepreneurial persistence not only refers to the continuous process of behavior, but also includes the dynamic continuous process of cognition. This process is difficult to explain using the structure of existing entrepreneurial insistence. This study believes that the entrepreneurial persistence in the development stage of entrepreneurial enterprises is a continuous investment process of "aiming at achieving entrepreneurial success", and it is necessary to adhere to "continuous cognitive evaluation" and "continuous dynamic improvement" while insisting on resisting giving up, so it could actively adapt to changes in external environmental conditions. The goal adjustment theory holds that the external entrepreneurial environment and entrepreneurial conditions will change over time, and this change may transform the current favorable external environmental conditions into restrictive external environmental conditions, and vice versa, which will lead

entrepreneurs to perceive the current possibility of realizing entrepreneurial goals changes, which in turn activates the goal adjustment process of entrepreneurs, which involves dynamic adjustment and improvement at the cognitive and behavioral levels. Therefore, this study divides entrepreneurial persistence into entrepreneurial cognitive persistence and entrepreneurial behavioral persistence and believes that entrepreneurs' entrepreneurial persistence includes both "information integration, reflection and Entrepreneurial patchwork, entrepreneurial learning" and other entrepreneurial behaviors persist. Not only is it helpful to explain the entrepreneurial persistence in different entrepreneurial situations such as the development process of entrepreneurial enterprises, the recovery process of entrepreneurial failures, and the continuous entrepreneurial process, but also reflects the dynamic characteristics of entrepreneurial persistence during the development period of entrepreneurial enterprises.

## 2. Entrepreneurial passion exerts an internal driving effect on entrepreneurial persistence through cognitive-emotional dual pathways

Based on the self-regulation theory, this study constructs the influence mechanism and mechanism model of entrepreneurial passion on entrepreneurial persistence with entrepreneurial self-efficacy and work vitality as the mediating variable and emotional intelligence as the moderating variable. The process and emotional activation process realize the transformation from entrepreneurial passion to entrepreneurial persistence. This study also enriches the research on entrepreneurial passion and entrepreneurial persistence by constructing a regulated mediation model of entrepreneurial passion and entrepreneurial persistence.

This study finds that entrepreneurs' entrepreneurial passion is conducive to improving entrepreneurs' entrepreneurial persistence. Entrepreneurial passion has a significant positive impact on entrepreneurial self-efficacy, and entrepreneurial self-efficacy has a significant positive impact on entrepreneurial persistence. Entrepreneurial self-efficacy plays a mediating role in the process of entrepreneurial passion affecting entrepreneurial persistence. On the cognitive path, entrepreneurial Passion will have a positive impact on entrepreneurial persistence by strengthening entrepreneurs' entrepreneurial self-efficacy. The positive impact of entrepreneurial passion on entrepreneurial self-efficacy is also regulated by emotional intelligence, that is, when the level of emotional intelligence is high, entrepreneurs can better strengthen their own cognition of entrepreneurial identity and enhance entrepreneurial self-efficacy. Emotional intelligence also moderates the mediating effect of entrepreneurial self-efficacy between entrepreneurial passion and entrepreneurial persistence. The higher the level of emotional intelligence, the stronger the mediating effect of entrepreneurial self-efficacy. In addition, this study also found that entrepreneurial passion has a significant positive impact on work vitality, work vitality has a significant positive impact on entrepreneurial persistence, and work vitality plays a mediating role in the process of entrepreneurial passion affecting entrepreneurial persistence, that is to say, on the emotional path, entrepreneurial passion will have a positive impact on entrepreneurial persistence by activating the work vitality of entrepreneurs. The positive impact of entrepreneurial passion on work vitality is also regulated by emotional intelligence, that is, when the level of emotional intelligence is high, entrepreneurs can more effectively use the strong positive emotions brought about by entrepreneurial passion to activate work vitality. Emotional intelligence also moderates the mediating effect of work vitality between entrepreneurial passion and entrepreneurial persistence. The higher the level of emotional intelligence, the stronger the mediating effect of work vitality. (Chen 2021; Bakker et al., 2021; Hechavarria et al., 2016; Holland & Garrett 2015; Meek & Williams 2018; Ramoglou et al., 2016; Wang et al., 2021; Zhang et al., 2016)

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