

## **THE IMPACT OF ENTREPRENEURIAL COMPETENCE AND SELF-EFFICACY ON COLLEGE STUDENTS' INITIATIVE ENTREPRENEURIAL BEHAVIOR A SURVEY STUDY**

**CHUN-LING SUN<sup>1</sup>, ZHAN-BO ZHAO<sup>2</sup>, QIANG YANG<sup>3</sup> & YAN QUAN LIU<sup>4</sup>**

<sup>1,3</sup>Associate Professor, School of Management, Tianjin University of Technology, Tianjin, China

<sup>2</sup>Master Candidate, School of Management, Tianjin University of Technology, Tianjin, China

<sup>4</sup>Professor, School of Education, Southern Connecticut State University, New Haven, CT USA

### **ABSTRACT**

The action of promoting personal initiative entrepreneurial behavior of university students can facilitate the innovation and transformation of knowledge and endorse job opportunities to ease the employment pressure. Based on an analysis of present related literature and the self-efficacy attribution theory, the authors conducted a survey of 322 senior university students in China using structured equation modeling to explore the relation between entrepreneurial competence, entrepreneurial self-efficacy and initiative entrepreneurial behavior of university students. Research showed that firstly, university students' entrepreneurial competence has markedly positive impact on their entrepreneurial self-efficacies; and entrepreneurial competence and self-efficacy have markedly positive impact on the transformable and proactive behaviors of university students' entrepreneurship. Then, entrepreneurial self-efficacy plays a mediating role between entrepreneurial competence and the transformable, proactive behaviors of university students' entrepreneurship. Authors' recommendations about the inspiration of initiative entrepreneurial behavior of university students were also given.

**KEYWORDS:** Entrepreneurial Competence, Entrepreneurial Self-Efficacy (ESE), Initiative Entrepreneurial Behavior, Self-Efficacy Attribution Theory, University Students

### **INTRODUCTION**

In May 2010, the opinions to vigorously promote innovation, entrepreneurship, education of university and self-employed initiative work of university students issued by Ministry of Education pointed that the college student is one of the most potential group with innovation and entrepreneurship. Activating the education of innovation and entrepreneurship in university, and positively encouraging university students' initiative entrepreneurship are the great strategic moves to make education system go deep into the study and practice of scientific outlook on development, and serve the construction of an innovative country. Initiative entrepreneurship of university students is not only the requirement of society development in the era of knowledge-based economy, but also the effective approach to ease the pressure of students in finding a job. Information of Ministry of Education about finishing the work of the employment of national normal college graduates well pointed out that the number of national normal college graduates reached 6,990,000 in 2013 which increased by 190,000 people than that in 2012 and the situation of university students' employment was more complex and severe.

The contradiction between the difficulty of university students' employment and the continually expanded scale of university students recruited is increasingly aggravating, and the situation of macroscopic employment is very severe.

Thereby, initiative entrepreneurship is the effective means to promote and achieve employment of higher quality as well as to ease current severe employment situation.

The linchpin of university students' self-employed initiative lies in inspiration of university students' entrepreneurial initiative. According to the concept of personal initiative proposed by Frese, Kring and others [1], university students' entrepreneurial initiative is a kind of process of psychological decision and operating decision under the function of entrepreneurial motivation, that university students perceive and grasp entrepreneurial opportunity, integrate entrepreneurial resources and make a decision on whether to start a business or take part in a business before stepping into the society. At present, studies about university students' initiative entrepreneurship include theoretical exploration and empirical research. In theoretical exploration, it mainly discussed how to promote the level of university students' initiative entrepreneurship under different education modes. And in empirical research, from far to near, it involved entrepreneurial motivation, entrepreneurial competence, entrepreneurial self-efficacy, entrepreneurial intention and other elements on the evolution road of university students' entrepreneurial practices [2-4]. Compared with former researches, this paper plans to study initiative entrepreneurial behavior of university students, and then it's more close to the operating decision of entrepreneurship on the evolution road of entrepreneurial practices, so it's capable of predicting university students' entrepreneurial practices more accurately and effectively.

Entrepreneurial competence is the adhesion point and value of reflection of entrepreneurial spirit, is the ability of realistic skills and the energy of university students towards entrepreneurial practices. In an atmosphere consisting of society, university education and other environmental factors, the level of entrepreneurial competence acquired during university students' learning process, will be regarded as distal factors that influence their initiative entrepreneurial behaviors, and entrepreneurial self-efficacy will be regarded as proximal factors which are capable of predicting initiative entrepreneurial behavior effectively [2]. Thereby, from entrepreneurial competence and entrepreneurial self-efficacy, two antecedent variables, this study is hopefully as those similar studies to dispose the initiative entrepreneurial behavior of university students.

## **THE THEORETICAL BASIS AND RESEARCH HYPOTHESIS**

### **The Constituent Factors Analysis of Initiative Entrepreneurial Behavior of University Students**

Fay and Frese [5] pointed that personal initiative was a mode of behavior that individuals adopted in active and spontaneous ways to accomplish work tasks and achieve goals by overcoming all kinds of obstacles and difficulties. From spontaneity, proactive and overcoming-barriers, three aspects, it proceeded to representations on employees' initiative behaviors and pointed out that "proactive" was that in the long run, individuals preferred to be capable of considering what might happen in the future and adopting certain actions in advance rather than take actions until they have to react for demand. Adam [6] and others, when doing comprehensive research on employees' work proactive behavior, came up with the idea that proactive behavior is a sort of expected, self-affected and environmental behavior which can create or control the inner and external environment by proceeding initiative events (but not adaptive).

As you can see, "behavior" is a kind of beforehand preparation for the future events and a kind of challenging behavior for actuality, and its connotation also includes spontaneity elements. University students' initiative entrepreneurship is different from the entrepreneurship of social people because they possess abundant entrepreneurial energy and spirit but lack experiences and resources. Relative to social people, university students encounter bigger initiative entrepreneurship's risk and resistance, so they need the risk prediction and sufficient preparation for the future

events. Therefore, the representations on university students' initiative entrepreneurial behavior can be carried on from the perspective of entrepreneurial "proactive behavior".

On the research of employees' extra-role behavior, employees' changes in behavior is the behavior to make an organization accomplish goals better, by the transformation of working method, working procedure and other aspects beyond normal practices [7]. As a procedure of creating new value, entrepreneurship's essence is innovation; and as a potential entrepreneur, university students will encounter technical, managerial and various obstacles during the entire entrepreneurial procedure, so they must break routine and promote development of things. As a kind of behavior to achieve goal by breaking normality, university students' "changes in behavior" reflects the essence of entrepreneurship (innovation), and partly includes the "overcoming difficulty" element in the concept of initiative. Some research has shown that transformational leadership behavior has improvement on enterprise's performance [8]. As university students are future leaders, changes in behavior are significant to the success and development of university students' initiative entrepreneurship regardless of whether it is in the early or later period of entrepreneurship. Thus, the representations on university students' initiative entrepreneurial behavior can be carried on from the perspective of entrepreneurial "changes in behavior".

In conclusion, initiative entrepreneurial behavior of university students, as a sort of activity with high risks and strong challenges, is the behavior of individuals to pay attention to long-term objective, predict future problem, grasp opportunity and innovate employment channel, innovate employment post, achieve personal human capital's value under the condition without demand or specific role regulation. Therefore, the representations of initiative entrepreneurial behavior of university students can be carried on from two perspectives of entrepreneurial proactive and changes in behavior. Entrepreneurial proactive behavior mostly reflects the beforehand initiative plan preparation and other actions of university students after predicting the development of future events. Changes in behavior mostly reflects the actions that university students create value in by using innovate ways to solve problems.

### **Theoretical Basis and Model Building**

According to studies on the theory of self-efficacy, people with high self-efficacy have high enthusiasm and are willing to strive to solve difficulties, but people with low self-efficacy have lower enthusiasm and don't want to pay more efforts with the development of the theory of self-efficacy, the attribution theory has been introduced in the field of self-efficacy research, which emphasize the self-efficacy level that mostly depends on the attribution of the result of the behavior. When an individual attributes internally with stable factors, such as competence, this individual will compose high self-efficacy; on the contrary, when there is attribute towards failures because of the lack of one's competence, the individual will generate low self-efficacy.

The self-efficacy attribution theory explains the generation of individual self-efficacy from the perspective of individual attribution of the behavior's result that is when an individual's competence is strong (internal factors), in the process of attribution of the individual behavioral results, one tends to use the internal factors to explain why the results for individual behavior. This will produce a higher individual self-efficacy, and then to promote individual positive behavior.

Based on the self-efficacy attribution theory, this paper will study how the entrepreneurial competence influence college students' initiative entrepreneurial behavior College students' self-employment is a constant process of self-awareness, in the process of attribution of entrepreneurial behavioral results, if college student has strong entrepreneurial competence, he will tend to interpret the entrepreneurial competence (internal and stable factor) as the

reasons for the behavioral results According to the theory of self-efficacy attribution, this will generate high entrepreneurial self-efficacy, and then promote college students' initiative entrepreneurial behavior Based on the above analysis, this paper puts forward the following theory model:

### **Research Hypothesis**

#### **The Influence of Analysis and Hypotheses of Entrepreneurial Competence and Entrepreneurial Self-Efficacy to University Students' Initiative Entrepreneurial Behavior**

Chandler and Hanks (1993) defined entrepreneurial competency as "the ability to identify, predict and utilize opportunities", and thought this ability was the core ability of entrepreneurship to continually enhance the familiarity of entrepreneurs to the market increasingly [9]. With the expanding of entrepreneurial competence's connotation, its representations dimensionality mainly can be divided into opportunity to identify, exploitation ability and operating management ability [10]. Entrepreneurial competence is one of the significant influential factors of initiative entrepreneurial behavior and its performance, is a sort of knowledge and skill to achieve entrepreneurial goal smoothly [11]. It affects the efficiency of entrepreneurial practices directly, promoting the entrepreneurial activities to go on smoothly and be capable of founding and developing. As initiative entrepreneurial behavior of university students is the outward expression of mental activity under certain outside environment, entrepreneurial intention is the important motivational factor to guide individuals to take practical actions [12], while entrepreneurial competence has positive impact on entrepreneurial intention [13].

We propose the following hypothesis based on the above analysis:

**H1a:** The enhancement of entrepreneurial competence has positive impacts on the changes in behavior of university students' initiative entrepreneurship;

**H1b:** The enhancement of entrepreneurial competence has positive impacts on the proactive behavior of university students' initiative entrepreneurship.

Entrepreneurial self-Efficacy (ESE) is the specific reflection of Bandura's self-efficiency concept in the entrepreneurial field. Bandura considered that one significant action of self-efficiency is that, on the behavior selections, individuals were prone to plan and select their career path in a way by the appraisal of themselves to the responses of different occupational capacities, while ESE was the strength of belief to act the role of entrepreneurs successfully and accomplish the core task of entrepreneurship [14]. Seeing from the researches at home and abroad, most researches on ESE, except the researches focusing on self-efficiency's measurement, consider ESE as predictive variables of entrepreneurial behaviors to carry on empirical research. Individuals with higher entrepreneurial self-efficacy are more possible to express entrepreneurial behaviors and well entrepreneurial performance in the future [15]. High ESE is one of the critical preconditions to forecast latent entrepreneurs [16].

We propose following hypothesis basing on above analysis:

**H2a:** The stronger the ESE is, the more obvious the changes in behavior of university students' initiative entrepreneurship is;

**H2b:** The stronger the ESE is, the more obvious the proactive behavior of university students' initiative entrepreneurship is.

## The Influence Analysis and Hypothesis of Entrepreneurial Competence to University Students' ESE

According to Bandura's self-efficacy theory [17], ESE is mostly affected by individual behavioral consequences /performance accomplishments, vicarious experiences, physiological arousals, outside appraisals, outside persuasions and verbal persuasions. The culture of entrepreneurial competence is a sort of comprehensive quality promoting procedure. Although in present literatures, there are no direct researches on the relationship between entrepreneurial competence and ESE, many literature researches have shown that one of important antecedent variables of entrepreneurial intention is the perception of individuals to successfully carry on entrepreneurial competence and entrepreneurial competence also has significant predictive role on entrepreneurial intention [18]. One of the effective means to cultivate entrepreneurial competence is practice, by which it can enhance students' conceptual ability, relationship ability, resource integration ability and other abilities, while these acquisitions of individual experiences will promote the development of university students' ESE [19] and the promotion of practice learning capacity is also the important part of the development of university students' entrepreneurial spirit and ESE [20]. With the nurturance and enhancement of entrepreneurial competence, entrepreneurs will obtain higher entrepreneurial confident-efficiency and leadership-efficiency, and may effectively reduce the degree of self-doubt and the shaky emotion, obtaining goal achievement efficiency in every self-fulfillments and self-approvals.

According to the synthesis of the analysis of 1.1 and 1.2, we can make the following hypothesis:

**H3:** entrepreneurial competence has positive impact on university students' ESE

## RESEARCH DESIGN AND RESEARCH METHOD

### Sample Analysis and Data Collection

This survey selects undergraduate seniors in Tientsin as research subjects, because they are about to graduate and have to face the selection between finding a job or starting a business, so their intentions of self-employed initiative are higher than other schoolmates which guarantees the suitability between questionnaire design and subjects. This survey includes two steps to carry on, the first are pretesting questionnaires investigation in order to confirm that the scale has favorable validity and then the second are official questionnaire surveys in order to verify the research hypothesis. We will distribute 200 pretesting questionnaires and 400 official questionnaires. The type of questionnaires' distribution is in print. After explaining to the teacher, we use our spare time to distribute and recover questionnaires on the spot. All problems in the questionnaires of this survey used level Likert5 scale scoring method to score: "complete accord" represents 5 points, "accord" represents 4 points, "half disaccord" represents 3 points, "majority disaccord" represents 2 points and "complete disaccord" represents 1 point.

### Measurement Scale (Research Tool)

In order to ensure the validity and reliability of measuring tools, this research employs scaled questions to make proper modifications based on this research's aim and regard it as the tools of empirical data collection.

### Entrepreneurial Competence

As for the inclusive textural elements of entrepreneurial competence, domestic scholars have done huge amounts of researches. The entrepreneurial competence scale in this paper mainly refers to the structural dimensionality research and scale design about entrepreneurial competence which are proposed by Wei Zhang, Hui Wang and others [21-22]. Aiming at university students, we make applicable adjustments and design items from six perspectives of opportunity

grasp, conceptual ability, relationship ability, resource integration ability, innovation ability and practice learning capacity. We also make proper modification of items in order to keep the independence of each dimensionality concept.

### **Entrepreneurial Self-Efficacy**

As for ESE, different domestic scholars have come up with different structural dimensionality elements, mostly with four, five or six dimensionality elements. This paper adopts Lizheng Han's five dimensionalities scale [23], design items from five aspects of ESE, goal achievement efficiency, leadership-efficiency, self-doubt efficiency and shaky emotion efficiency. Entrepreneurial self-confidence, goal achievement and leadership these three dimensionalities have reflected the individuals' cognition of self-entrepreneurial potential, entrepreneurial consequence expectation and entrepreneurial goals, namely "ability feelings". Self-doubt and shaky emotion have reflected individuals' control feelings of entrepreneurial activities and behavior control.

### **Initiative Entrepreneurial Behavior**

All entrepreneurial behavioral concepts have included opportunity, resource and other vocabularies. In the precondition of having entrepreneurial motivation, initiative entrepreneurial behavior of university students is a psychological accomplishment and behavior level of the entrepreneurship or entrepreneurship participation formed before entering society, through perceiving, grasping entrepreneurial opportunity and integrating entrepreneurial resources. According to former measure dimensionality about initiative behavior, this paper designs initiative entrepreneurial behavior scale from the perspectives of changes in behavior and proactive behavior. Changes in behavior reflects the procedure of individual transforming thinking model and creatively re-creating value. Proactive behavior means that we should do some preparations beforehand from a long perspective after considering what you want to do in the future.

### **Data Analysis Approach**

This research used SPSS and AMOS software to carry on statistical analysis on the survey data. Adoptive analysis approaches include exploratory factor analysis (EFA), reliability analysis, confirmatory factor analysis (CFA), structural equation model (SEM) and others. EFA and reliability analysis mainly are used for the data analysis of pretesting questionnaires to construct the measure tools of initiative entrepreneurial behavior of university students and its influence factors. CFA and SEM is mainly used for the data analysis of official questionnaires to test the relationship between each variable and the analytical model shown as figure 1.

## **RESEARCH CONSEQUENCES**

Through manually screening and getting rid of invalid questionnaires and those questionnaires which are obviously not filled earnestly, we obtain 154 valid pretesting questionnaires, 322 valid official questionnaires with the effective response rate of 77% and 80.5% respectively. The results of the high response rate have proved the validity of the selection of investigation objects and research tools.

### **Data Analysis of Pretesting Questionnaire**

#### **Reliability Test**

The  $\alpha$  coefficient, namely internal consistency  $\alpha$  coefficient is an important index of scale reliability test. Reliability test aims at testing the reliability coefficient changes of the whole scale after deleting the items. If the whole scale reliability coefficient after item deletion is much bigger than the original reliability coefficient, this item's properties to be measured or psychological traits may be different from the rest of items that represent the homogeneity between this item and other items which not high, so it can be deleted during item analysis.

Test consequence: The values of each dimensionality's  $\alpha$  coefficient of entrepreneurial competence scale are from 0.726 to 0.817, and its value of the whole scale  $\alpha$  coefficient is 0.894. The values of each dimensionality's  $\alpha$  coefficient of entrepreneurial self-efficacy scale are from 0.703 to 0.792, and its value of the whole scale  $\alpha$  coefficient is 0.867. The values of two dimensionalities'  $\alpha$  coefficient of initiative entrepreneurial behavior of university students scale are from 0.752 to 0.763, and its value of the whole scale  $\alpha$  coefficient is 0.818. It is generally accepted that if single dimensionality reliability is higher than 0.7 and composite reliability is higher than 0.8, it belongs to high reliability, so we can see that each scale's reliability is very good.

**Exploratory Factor Analysis**

KMO value and Bartlett sphere test is calculated for the sample data, it is generally believed that KMO coefficient over 0.8 is suitable for factor analysis. The KMO value of initiative entrepreneurial behavior scale, entrepreneurial competence scale and ESE scale were greater than 0.8, Bartlett sphere test statistic probability is 0.000, less than 1 %, which are suited to do exploratory factor analysis. Test consequence show that explained variation respectively are 62.789%, 62.789% and 62.789%.

**Data Analysis of Official Questionnaire**

**Descriptive Statistics of Formal Questionnaire**

Table 1 is for the mean, standard deviation and correlation coefficient matrix of variables, Entrepreneurial competence and ESE is significantly positive related ( $r=0.603$ ,  $p<0.01$ ); Entrepreneurial competence and changes in behavior, Proactive behavior are respectively significantly positive related (respectively is  $r=0.589$ ,  $p<0.01$ ;  $r=0.577$ ,  $p<0.01$ ); Entrepreneurial competence and Chances in behavior. Proactive behavior are respectively significantly positive related (respectively is  $r=0.535$ ,  $p<0.01$ ;  $r=0.517$ ,  $p<0.01$ ) and surveys results show, the sample size in girls is 44.64% and boys is 55.36%.

**Table 1: The Mean, Standard Deviation and Correlation Coefficient Matrix of Variables**

Variables	Mean	Standard Deviation	1	2	3	4
1.Entrepreneurial competence	3.72	0.594	1			
2.ESE	4.01	0.585	0.603**	1		
3. Changes in behavior	3.69	0.755	0.589**	0.535**	1	
4. Proactive behavior	3.76	0.642	0.577**	0.517**	0.604**	1

Note : N=322, \*\* $p<0.01$ .

**Analysis of Reliability and Validity**

This research adopts Cronbach consistency coefficient ( $\alpha$ coefficient) to evaluate the reliability of scales and the CFA to evaluate the validity of scale.

Analysis of reliability. The alpha coefficient for the entrepreneurial competence scale is 0.909, the alpha coefficient for the ESE scale is 0.928, the alpha coefficient for the changes in behavior scale and proactive behavior scale respectively are 0.787 and 0.762 respectfully, and the alpha coefficient for the initiative entrepreneurial behavior scale is 0.834. They are all greater than 0.7, which indicate that the scales all have good reliability

Analysis of validity. This research used AMOS18.0 structure equation software to progress confirmatory factor analysis (CFA) on university students' entrepreneurial competence, ESE and initiative entrepreneurial behavior. It's generally considered that  $2 < x^2/df < 5$  model is acceptable and the closer  $x^2/df$  is to 2, the better the model fitness is. RMSEA bigger than 0.1 represents that the model is not acceptable, smaller than 0.1 represents that the model fitness is

acceptable and smaller than 0.08 that the model fitness is good.  $RMR \leq 0.05$ ,  $GFI \geq 0.90$ ,  $AGFI \geq 0.80$ ,  $IFI \geq 0.90$ ,  $TLI \geq 0.90$  and  $CFI \geq 0.9$  represent that the model fitness is very good. From each index in table 2, we can see the whole construct validity of each scale is very good.

**Table 2: The CFA of Entrepreneurial Competence, ESE and Initiative Entrepreneurial Behavior**

Index	Entrepreneurial Competence	Entrepreneurial Self-Efficacy	Initiative Entrepreneurial Behavior
$\chi^2/df$	2.745	3.035	3.075
RMR	0.047	0.027	0.027
GFI	0.904	0.956	0.966
AGFI	0.863	0.904	0.928
IFI	0.923	0.962	0.965
TLI	0.901	0.930	0.943
CFI	0.922	0.961	0.964
RMSEA	0.074	0.080	0.080

### The Verification Result of Research Hypothesis

On the discussion of the relation between entrepreneurial competence, ESE and initiative entrepreneurial behavior of university students, in order to research the whole effect of each pair of relation, we take entrepreneurial competence, ESE and initiative entrepreneurial behavior as latent variables, make package of of entrepreneurial competence and ESE, divide the six dimensionalities of entrepreneurial competence into six packages, and divide the five dimensionalities of ESE into five packages. In order to proving the mediating role of self-efficacy, first we have to prove the relations between entrepreneurial competence, ESE and initiative entrepreneurial behavior of university students. Next, the verification is carried on:

- The verification of the interactional relations between entrepreneurial competence, ESE and initiative entrepreneurial behavior of university students

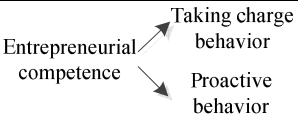
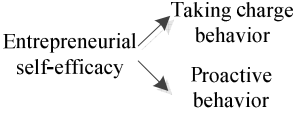
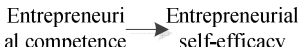
The verification consequence of the interactional relations between entrepreneurial competence, ESE and initiative entrepreneurial behavior of university students are shown in table 2. From the index value of the degree of structural model fitness, we can see the degrees of three model's fitness are very good. It's generally considered that the estimated value of parametric statistics should reaches significant level (the absolute value of  $t > 1.96$  or  $p < 0.05$ ), and standardize path coefficient had better is between 0.45-0.95 which can represent the validation of this hypothesis. The bigger the standardize path coefficient is, the bigger the interaction intensity between two latent variables is.

From table 3, we can see that the path coefficients between entrepreneurial competence and changes in behavior. Proactive behavior are 0.837 and 0.800 respectively. They all reach significant level that means entrepreneurial competence has positive impacts on initiative entrepreneurial behavior of university students.

The path coefficients between ESE and changes in behavior proactive behavior are 0.846 and 0.897 respectively. They all reach significant level which means ESE has positive impacts on initiative entrepreneurial behavior of university students. The path coefficient between entrepreneurial competence and ESE is 0.718, which is significant. So entrepreneurial competence has positive impacts on ESE.



**Table: The Verification Results of the Correlation Between Entrepreneurial Competence ESE and Initiative Entrepreneurial Behavior of University Students**

Variable Relationship	Goodness of Fit Index of Revised Model	Path Coefficient	T Value
	$\chi^2/df=2.359$ , RMR=0.031, GFI=0.94, AGFI=0.906, NFI=0.923, IFI=0.954, TLI=0.937, CFI=0.954, RMSEA=0.065	0.837 0.800	7.939*** 6.853***
	$\chi^2/df=2.542$ , RMR=0.031, GFI=0.949, AGFI=0.910, NFI=0.928, IFI=0.955, TLI=0.931, CFI=0.954, RMSEA=0.069	0.846 0.897	7.990*** 7.995***
	$\chi^2/df=2.503$ , RMR=0.026, GFI=0.952, AGFI=0.915, NFI=0.937, IFI=0.961, TLI=0.942, CFI=0.961, RMSEA=0.068	0.718	9.640***

**Note:** \* indicates significant level of 0.05, 0.01 significant level, \*\* said \*\*\* indicates significant level of 0.001

- The influence analysis of entrepreneurial competence and ESE on initiative entrepreneurial behavior of university students

As figure 2 shows, it's the structural model analysis consequence of the influence of entrepreneurial competence and ESE on initiative entrepreneurial behavior of university students. This model's index of fitness after correction is:  $\chi^2/df=2.718$ , RMR=0.036, GFI=0.900, AGFI=0.858, IFI=0.918, CFI=0.917, RMSEA=0.073. The index of fitness of this model is very well.

The standardize path coefficient between entrepreneurial competence and ESE is 0.780 ( $p=0.000$ ), so H3 has been verified. The standardize path coefficients between changes in behavior, proactive behavior and entrepreneurial competence are 0.309 ( $p=0.012$ ) and 0.264 ( $p=0.045$ ) respectively, so H1a and H1b have been verified. The standardize path coefficient between changes in behavior, proactive behavior and ESE are 0.518 ( $p=0.000$ ) and 0.620 ( $p=0.000$ ) respectively, so H2a and H2b have been verified.

Therefore, the direct influence effects of entrepreneurial competence on university students' changes in behavior and proactive behavior are 0.309 and 0.264 respectively. The indirect influence effects by ESE are 0.404 ( $0.780 \times 0.518$ ) and 0.484 ( $0.780 \times 0.620$ ) respectively. The whole influence effects are 0.713 and 0.748 respectively. It shows that ESE plays mediating role between entrepreneurial competence and university students' entrepreneurial changes in behavior and proactive behavior.

## DISCUSSIONS AND CONCLUSIONS

This research has discussed the impacts of entrepreneurial competence and ESE on initiative entrepreneurial behavior of university students and proved that entrepreneurial competence has obviously positive effect on the development of initiative entrepreneurial behavior of university students, and ESE is not only a most direct influence factor of initiative entrepreneurial behavior of university students, but also plays a very important mediating role between entrepreneurial competence and initiative entrepreneurial behavior.

The above conclusions not only have enriched and developed the research of ESE theory in entrepreneurial educational field through the structure exploration of university students' ESE and initiative entrepreneurial behavior, providing new theoretical guidance for university students' entrepreneurship, but also have significant practical meanings of developing entrepreneurial education and stimulating, guiding initiative entrepreneurial behavior of university students

which will enhance university students' entrepreneurial instructional level, innovate university's entrepreneurial education and entrepreneurial cultivation mode.

From the research data of the entire model, we can that entrepreneurial competence and ESE have positive impacts on university students' entrepreneurial transformational and proactive behaviors, while ESE plays a mediating role between entrepreneurial competence and university students' entrepreneurial transformational or proactive behaviors. In order to further reveal this relation, this research has asked about 10 university students in this questionnaire survey, and we have discussed the research results with them.

- Enhance entrepreneurial competence, facilitate university students' changes in behavior and proactive behaviors

As a sort of very practical and risky activity, entrepreneurial behavior is the reflecting procedure of the interaction between individual ability and internal mental activity on the behavioral aspect. It needs adequate knowledge reserve and perfect knowledge structure to support [24]. As a comprehensive ability, entrepreneurial competence is the essential factor to drive individual behavior. Everyone has the tendency to realize the value of self-abilities. Individuals who possess strong practice learning capacity tend to make valuation of their knowledge and individuals who are good at grasping opportunities and have initiative spirit tend to utilize opportunities to do some innovative practices. 10 university students emphasized that the classmates with strong language communication ability will communicate with others actively and then obtain interpersonal relationship resources; individuals with strong practice learning capacity tend to take part in some social practices actively and then collect and study relative domain knowledge in order to make preparations for the future employment or entrepreneurship.

- Enhance ESE, facilitate university students' changes in behaviors and proactive behaviors

The mental disposition of individuals will show some individual behaviors under the proper outside environmental stimulation, and as the mental process before individuals showing entrepreneurial behaviors, ESE is the direct factor to actuate individual behaviors. 10 university students also emphasized that people who have strong perception of ESE, especially strong feeling of control, will make clear occupation career plans, contact the new things actively such as participating social activities and lectures about entrepreneurship, and tend to analyze problems in multiple perspectives.

- Enhance entrepreneurial competence, inspire university students' ESE

As a psychological cognition of entrepreneurs, ESE will be affected by entrepreneurial atmosphere, entrepreneurial experiences, entrepreneurial competence and other factors [8]. While as the element that entrepreneurs themselves can shape, entrepreneurial competence plays an important role in the development of ESE. The enhancement of entrepreneurial competence and increasing of self's resources will drive individuals to form high goal achievability as well as the self-confidence for career. In the ability development, innovation ability, conceptual ability, relationship ability and so on are the key abilities for leader which have important influence on increasing students' leadership self-efficacy and then facilitating students role to transform to entrepreneurs role. 10 university students also emphasized that in the well entrepreneurial atmosphere, although the perceptive entrepreneurial resistance will decrease and the confidence for self's abilities will enhance, the fundamental source of ability feeling is the increase of self's abilities and qualities, while the control feeling also will be affected by ability feeling.

- Promote entrepreneurship education, facilitate initiative entrepreneurial behavior of university students

The direct, vicarious experiences individuals receive, play a vital role in the shaping of self-efficacy. Direct experiences mostly derive from individual own perception and study, while vicarious experiences mostly establish on the observational learning of existing successful entrepreneurial cases [25]. Therefore, during entrepreneurship education procedure, promoting cooperative education among university, enterprise and scientific research institution, making the best use of each superior resource to develop university students' entrepreneurial competence, both produce subtly influenced effects on the development of entrepreneurial self-efficacy and entrepreneurial behaviors. For example, the education modes aiming at practices through "working and learning alternation" mode, "school and enterprise co-construction" mode and project actuation mode, can take university students out of classes, broaden their horizon, facilitate the combination of university students' speculative knowledge and practices, facilitate university students opportunity perception, grasping ability, practice learning capacity and so on, and then facilitate university students self-confidence for their enterprise development, increase goal achievability, produce proactive behaviors so as to prepare their enterprise in advance. Research and development cooperation between school and enterprise, cooperation and development carried by scientific research project, and other education modes aiming at research and innovation can actively mobilize university students' innovation interest and develop skeptical attitude so as to improve innovation ability and facilitate university students' change in behaviors that they are not satisfied with actuality and want to make differences.

## REFERENCES

1. Frese M., Kring W., Soose A., & Zempel J. (1996). Personal Initiative at Work: Differences between East and West Germany. *Academy of Management Journal*, 39(1):37-63.
2. Shane S, Locke E A, & Collins C J. (2003). Entrepreneurial motivation. *Human resource management review*, 13(2), 257-279.
3. De Noble, A F, Jung, D, & Ehrlich, S B. (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. *Frontiers of entrepreneurship research*, 73-87.
4. Pihie L, & Akmaliah Z. (2009). Entrepreneurship as a career choice: An analysis of entrepreneurial self-efficacy and intention of university students. *European journal of social sciences*, 9(2), 338-349.
5. Frese M. & Fay D. (2001). Personal Initiative: An Active Performance Concept for Work in the 21st Century. *Research in Organizational Behavior*, 23(1), 133-187.
6. ADAMM, G. & SUSAN J A. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior*, 28, 3-34.
7. Morrison, E W, & Phelps, C C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of management Journal*, 42(4), 403-419
8. Garcia-Morales, V J, Jiménez-Barrionuevo, M M, & Gutiérrez-Gutiérrez, L. (2012). Transformational leadership influence on organizational performance through organizational learning and innovation. (2012). *Journal of Business Research*, 65(7), 1040-1050
9. Chandler, G. N. & Hanks, S. H. (2010) Measuring the Performance of Emerging Businesses: A Validation Study. *Journal of Business Venturing*, 8 (5),391-408.

10. TANG, Jin, & JIANG, Yan-fu. (2008). Theoretical construction and verification of the concept of entrepreneurial ability. *Science and technology management*, 8, 52-57.
11. Mitchelmore S, & Rowley J. (2010). Entrepreneurial competencies: a literature review and development agenda [J]. *International Journal of Entrepreneurial Behaviour & Research*, 16(2), 92-111.
12. FU, Yi-shi, & LIU, Jiao. (2010). Research on university students' entrepreneurial intention : initiative personality and occupational values. *Shanxi Agricultural University*(1), 239-242
13. PENG Zheng-xia, et al. (2010). Impact of individual and social environment on university students' entrepreneurial intention. *High engineering education research*
14. Sherer, R.F., Adams, J. & Carley, S.S. (1989). Role model performance effects on development of entrepreneurial career preference. *Entrepreneurship Theory and Practice*, 13, 53-71.
15. Boyd, N., G., & Vozikis, G., S. (1994). The Influence of Self-Efficacy on the Development of Entrepreneurial Intentions and Actions. *Entrepreneurship: Theory & Practice*, 18, 63-77.
16. Krueger, N.F., & Brazeal, D.V. (1994). Entrepreneurial Potential and Potential Entrepreneurs. *Entrepreneurship: Theory & Practice*, 18, 91-104.
17. Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
18. FENG, Lei, CAO Ying & WANG, Rui. (2011). Impact of entrepreneurial skill education on university students' entrepreneurial intention. *Business economics*, (3), 74-80
19. Chandler, G.N., & Jansen, E. (1992). The Founder's Self-Assessed Competence and Venture Performance. *Journal of Business Venturing*, 7:223-237.
20. JIA, Shao-hua. (2009). Exploration of university students' entrepreneurial developing mode—explore the objective law of university students' successful entrepreneurship [J]. *High engineering education research*. (2).121-124.
21. ZHANG, Wei, & WANG Chong-ming. (2004). Combination mode of high-tech small and medium-sized enterprises' entrepreneurs and characterization research on competency. *Science and technology management* (3) 90-93.
22. WANG, Hui, & ZHANG, Jia-hua. (2012). Connotation and structure of university students' entrepreneurial ability—case and verification research. *Journal of national institute of education administration*, (2), 81-86.
23. HAN, Li-zheng. (2011). Self efficacy structure research of university students' entrepreneurship. Nanjing Normal University.
24. Markham, G., Balkin, D., & Baron, R. (2002). Inventors and new venture formation: The effects of general self-efficacy and regretful thinking. *Entrepreneurship Theory and Practice*, 27(2), 149-165.
25. Stumpf, S.S., Dunbar, R.L., & Mullen, T.P.(1991). Simulations in entrepreneurship education: Oxymoron or untapped opportunity? *Frontiers in Entrepreneurship Research*, 681-694.