2014

ISSN : 0974 - 7435 Volume 10 Issue 18

BioTechnology

An Indian Journal

FULL PAPER

BTAIJ, 10(18), 2014 [10244-10250]

The empirical study for influential factors of internet entrepreneurship intentions of Chinese university students

Lin Xi[1], Zhao Yongle[2,*]

[1]The Business School, Hohai University, Nanjing, 210098, (CHINA)

[2]The Management School, Guilin University of Technology, Guilin, 541004, (CHINA)

E-mail : linxi@glut.edu.cn

ABSTRACT

Taking the 480 university students as the test sample, made them fill in the questionnaires of influential factors of internet entrepreneurship intentions of Chinese university students (Including five scales). Separately using the Independent-Samples T Test and the one-way ANOVA to analyze the data obtained from the investigation, the study found that the categorical variables consisting of gender, year, major and household register obviously affect the internet entrepreneurship intentions of Chinese university students. Besides, executing the multiple linear regression analysis for the five predictable factors containing prior knowledge, social network, school factors and social factors used in predicting the intentions, the study got the standardized regression equation of the five predictable factors and one calibration variable and found that the five predictable factors all produced obvious effect on the calibration variable.

KEYWORDS

University student; Internet entrepreneurship intentions; Empirical study.

INTRODUCTION

With the rapid development of Internet and the coming of the era of electronic commerce, the great enthusiasm of Internet entrepreneurship has been rising. Nowadays, there are the main three types of Internet entrepreneurship taken by Chinese university students: creating websites, starting online stores and online freelance work[1]. Comparing to traditional entrepreneurial activities, Internet entrepreneurial activities have some characteristics such as low risk, less cost and low entry threshold[2]. Unlimited business chances provide possibilities for university students looking for jobs to examine their own capabilities[3], more and more students start Internet entrepreneurial activities. This is a good phenomenon, especially reflecting the grand meaning in 2014 called possibly the most difficult year for the students to find jobs, because university students can relieve the employment pressure of their own and the whole society.

The present situation is that though it is a fact that Chinese university students have much interest and strong intentions to Internet entrepreneurship, the reasons resulting in the fact need to be researched systematically and deeply. In order to find out these important problems, the researchers made the university students to fill in the questionnaires and utilized the first-hand data to execute the empirical analysis of the relative influential factors so as to explore the influential mechanism of their Internet entrepreneurship intentions and expect the study to be regarded as a reference for the theoretical research and practical activities relating to Internet entrepreneurship of Chinese university students.

LITERATURES REVIEW AND THEORY CONSTRUCTION

As the continuous growth of Internet entrepreneurship of university students, it has been gradually paid more and more attention by domestic and foreign scholars. Yaojing Gen[1] discussed the specialties and forms of Internet entrepreneurship of Chinese university students. Yanlin Cheng[2] analyzed the dilemmas and causes of Internet entrepreneurship of Chinese university students and raised the suggestions of coordinated Internet entrepreneurship. Yinan Su[1] classified the types of Internet entrepreneurship of Chinese university students. Cindy Millman etc. made the empirical research from the aspects of demographics and IT curricula and found that gender, household income, IT curricula and online activities are all the obvious influential factors of Internet entrepreneurship intentions of Chinese university students[4].

It has been a focus to explore factors inducing a person to conceive entrepreneurial intention in the researching filed of entrepreneurship[5]. In the foreign study of personal entrepreneurship intention, there are two representative models: one is Ajzen's Theory of Planned Behavior (TPB), the other is the Model of the Entrepreneurial Event of Shapero and Sokol. Furthermore, western scholars have started to specially study the influential factors of entrepreneurial intentions of university students from 1980's. Michael G. Seott etc[6] divided the factors influencing entrepreneurial intentions into predisposing factors, triggering factors and possessing a business idea, predisposing factors include background, personality and perception factors, triggering factors include the effects of looking for work, career advice received and the prospect of unemployment (Scott M G, Twomey D F 5-13). In recent years, some domestic scholars have also one after another researched the problems of influential factors for Chinese university students' entrepreneurship. Wei Fan and Chongming Wang raised an influential factors model of entrepreneurial inclination including three dimensions of personality, background and environment. Yonghong Qian[5] created an analytic frame of entrepreneurial influential factors which has two levels (the level of personal traits and the level of personal resources) and six dimensions (achievement motive, risk taking, autonomy, entrepreneurial reward, resources attaining and future employment). Yinghua Ye[7] argued that four factors affect entrepreneurial intentions of Chinese university students including personal traits, prior knowledge, social resources and entrepreneurial cognition and entrepreneurial self-cognition is the medieval variable that influences personal traits, social resources and prior knowledge in the course of entrepreneurial intention[7,8]. applied the theory of planned behavior to build a model of factors affecting university students' entrepreneurial intentions to explore the relations among the factors of entrepreneurial traits, entrepreneurial cognition, entrepreneurial attitude, entrepreneurial environment and entrepreneurial intentions[8]. Some scholars paid their attention to demographic factors, for example, Lu Dan and Dai Yue[9] discussed the influences of gender, major, family and the only child to entrepreneurial motives of university students[9,10]; yet discussed the influences of income gap between city and countryside, parents' profession, majors, student cadres and political status to entrepreneurial motives of university students[10].

Generally speaking, foreign scholars and domestic scholars have comprehensively researched influential factors of entrepreneurship and their studies are mainly empirical but broad, there are still few targeted studies relating to some concrete kind of entrepreneurship. With the rapid development of electronic commerce, Internet entrepreneurship has become one kind of entrepreneurial ways which university students like very much, but there are still few studies aimed to influential factors of Internet entrepreneurship of university students not only in China but in other countries. Nowadays, domestic scholars only qualitatively research the existent problems and policies. The empirical study of Cindy Millman mentioned previously focused on the influences over Internet entrepreneurship intentions from the four factors including gender, family income, major and online habits.

Thus, the study will mainly focus on the influences from personal resources, personal motives and environmental factors, as to personal traits, Sexton and Bowman found that there are not necessary connection between achievement needs and entrepreneurial decisions (Sexton D L, Bowman N 129-140). Gartner tried to find their similarities by categorizing entrepreneurs but he found there are the same differences between entrepreneurs as between entrepreneurs and non-entrepreneurs[12], so the study doesn't consider the factor of personal traits for the time being. In this way, the study's theoretical architecture includes the three constructions as personal resources, personal motives and environmental factors, among them, personal resources include the two dimensions as prior knowledge and social network, and environmental factors include the two dimensions as school factors and social factors.

RESEARCH DESIGN

Research hypotheses

The influences of personal resources over internet entrepreneurship intentions of university students

The research focuses on analyzing the influence of prior knowledge and social network from personal resources over Internet entrepreneurship of university students. In personal resources, prior knowledge refers to some knowledge reserve relating to Internet entrepreneurship, mainly including the cognition and understanding of website developing, web design and online social intercourse. The students often surfing the Internet know more the filed than the students seldom surfing the Internet and also contact more information relating to Internet entrepreneurship. So, the study gives the hypothesis as follows:

$H_{1:}$ Prior knowledge produces positive influence over the Internet entrepreneurship of university students

Social network refers to the personal network of university students mainly including many different relative groups such as parents, relatives, classmates, schoolmates and friends. These can somewhat cause influences over the Internet entrepreneurship intentions of university students such as parents' opinions, relatives and friends' opinions and the entrepreneurial practices from classmates or schoolmates. So, the study raises the following hypothesis:

H_2: Social network produces positive influence over the Internet entrepreneurship of university students

The influences of personal motives over the internet entrepreneurship intentions of university students

According to theories of motivation, motivations refer to the process by which a person's efforts are energized, directed and sustained toward attaining a goal. Without the driving of motivations, it is difficult for anyone to take actions to realize special aims. Certainly, about Internet entrepreneurship, because attaining objectives are different, personal motivations are also various, but it's sure that there are the influences of personal motivations over the Internet entrepreneurship intentions. So, the study raises the hypothesis as follows:

H_3: Personal motivations affect the Internet entrepreneurship intentions of university students

Environmental factors affect the Internet entrepreneurship intentions of university students

Environmental factors mainly refer to school factors and social factors. Every student has to live in universities' campuses for years to graduate in which school factors bring the students great influences. These can all produce important influences over the students' entrepreneurial passion like whether universities set up entrepreneurial courses, hold entrepreneurial competition and found entrepreneurial bases. So, the study raises the following hypothesis:

H_4: School factors produce positive influence over the Internet entrepreneurship intentions of university students

During the periods of winter holidays, summer holidays or part-time jobs and internship, students will leave campuses to contact the society and they will be affected by the social environment. To a great extent, it is decided by governments' leading whether a society's entrepreneurial atmosphere is strong or not. The entrepreneurial policies supported by governments directly influence the entrepreneurial atmosphere of the whole society and the positivity of entrepreneur. So, the study makes a hypothesis as follows:

H_5: There are positive relationship between social factors and the Internet entrepreneurship intentions of university students

Scales developing and analyzing

Based on the study's hypotheses, the study referred to university entrepreneurial scales developed by some scholars and used Likert 5-point scale as the model to develop the personal resources' scale of Internet entrepreneurship, the personal motives' scale of Internet entrepreneurship, the entrepreneurial environment factors' scale of Internet entrepreneurship and the intentions degree's scale of Internet entrepreneurship including 48 questions.

After finishing the first drafts of scales, the researchers selected 100 university students to make the trial test and then examined the items, validity test and reliability test. About analyzing the items, the researchers calculated CR's amounts of each item and respectively deleted one insignificant item of the personal resources' scale and one insignificant item of the environmental factors' scale, the left are 46 items. After analyzing items, the researchers respectively made exploratory factor analyses for each scale and used the principal component analysis to extract common factors, at the same time, carried out orthogonal rotation and oblique rotation, then selected the number of factors in combination with Kaiser criteria and the steep slope test.

Sample selection

The report of employment urged by Internet entrepreneurship published by the Ministry of Human Resources and Social Security of China pointed out that the percentage of university and junior college students occupies 48.9% among the total number of people engaging Internet entrepreneurship. So, the study mainly takes students from Guilin's universities as participants. Among them, there are 288 boys and 192 girls; 138 students come from social science majors occupying 28.8% of the total number and 116 students come from natural science majors occupying 24.2% of the total number and 226 students come from engineering majors occupying 47% of the total number.

Data processing

The study used the Chinese version of SPSS20.0 to make statistics and analyze the first-hand data collected by the questionnaires.

RESULTS AND ANALYSES

Comparisons of classified factors of students background with other influential factors about internet entrepreneurship intentions

The researchers inputted the data filled in the scales of questionnaires by the participants to the Chinese version of SPSS20.0 in order to execute Independent-Samples T Test and one-way Anova. The results show as follows: 1. about the comparison of gender difference, female students get more scores than male students over prior knowledge, social network, school factors and social factors, only lower over personal motives; The result gave the researchers a surprise, because it is obviously different from the study results of traditional entrepreneurship. The researchers think it is because female students prefer to buy costumes and cosmetics etc. on the Internet than male students so they are gradually familiar with the operation of online shops selling these products by repetitive buying, besides, the doorsill of Internet entrepreneurship is relatively low, thus female students have more enthusiasm and better preparation than male students about Internet entrepreneurship. 2. About the difference of learning years, the first-year students and the second-year students have higher entrepreneurial intentions than the third-year students and the last-year students on many influential factors. In universities, because junior students have much more spare time most of them take part-time jobs to make money, moreover, with the development of Internet entrepreneurship, a few students start all kinds of online shops on platforms like Taobao and Paipai, some of these shops have grown to corresponding scales, but senior students have appeared more and more realistic under the pressure of employment, most of them join the entrance exams for postgraduate schools, civil service exams or look for jobs and give up their dreams of founding their own business. 3. About the comparison of majors' difference, the students from the majors as economy and management, computer science and machinery manufacturing and automation get higher scores than students from other majors. Because the students from the majors of economy and management may hear entrepreneurial stories of various kinds of entrepreneurs while they learn professional knowledge and in the era of electronic commerce they have higher Internet entrepreneurship intentions. However, the students from the majors of computer science and machinery manufacturing and automation grasping the skills relating to Internet or cartography similarly own higher Internet entrepreneurship. 4. On the comparison of household registration difference, the students from rural areas get higher scores than the students from cities over prior knowledge, personal motives, school factors and social factors, especially the highest score over personal motives but only lower scores over social network. The result deviates from our expectation, because we thought the students from cities and towns should have stronger Internet entrepreneurship intentions. The reason why the students from rural areas have strong Internet entrepreneurship intentions is mainly caused by their personal motives. Compared with the students from cities and towns, they have few resources applied for getting jobs to use and many difficulties to find content jobs depended on their parents' social network, so under this circumstance, they have stronger desires to change their fates by their own efforts, especially Internet offers them a very good entrepreneurial platform, many of them realized the change of an ugly duckling into a swan by Internet, so their Internet entrepreneurship intention are usually stronger.

Multiple regression analysis for influential factors of internet entrepreneurship intentions

The purpose of the multiple regression analysis aims to find the regressive equation of the Influential Factors of Internet Entrepreneurship Intentions so as to illustrate the relationship and strength between these influential factors and Internet entrepreneurship intentions and entirely explain whether the amounts of variation appear statistically significant.

During the process of practical operations, the researchers made the variables to forcedly enter and execute the regressive analysis of explanation. The analytic results outputted by SPSS20.0 are as follows:

TABLE 1 : Pearson product-moment correlation matrix

		Entrepreneurial Intention	Prior Knowledge	Social Network	Personal Motives	School Factors	Social Factors
Pearson relativity	Entrepreneurial Intention	1.000	.658	.589	.678	.586	.666
	Prior Knowledge	.658	1.000	.458	.582	.628	.587
	Social Network	.589	.458	1.000	.638	.656	.467
	Personal Motives	.678	.582	.638	1.000	.655	.670
	School Factors	.586	.628	.656	.655	1.000	652
	Social Factors	.666	.587	.467	.670	.652	1.000
Sig.(one-side)	Entrepreneurial Intention	.	.000	.000	.000	.000	.000
	Prior Knowledge	.000	.	.000	.000	.000	.000
	Social Network	.000	.000	.	.000	.000	.000
	Personal Motives	.000	.000	.000	.	.000	.000
	School Factors	.000	.000	.000	.000	.	.000
	Social Factors	.000	.000	.000	.000	.000	.

TABLE 1 shows that there are obviously positive relationships (P<0.001) between the five predicative variables and the correlation coefficients range from 0.458 to 0.678. There are obviously positive relationships (P<0.001) between the predictive variables and the criterion variable and the correlation coefficients range from 0.586 to 0.678 meaning the five predictive variables have middle relationship with the criterion variable.

TABLE 2 : Model summarization

Model	R	R^2	Adjusted R^2	estimated standard error	Statistics Alteration					Durbin-Watson
					R^2 Alteration	F Alteration	df1	df2	Sig. F Alteration	
1	.752[a]	.566	.560	7.568	.566	233.512	5	474	.000	.625

a. Predictable variables: (constant), prior knowledge, social network, personal motives, school factors, social factors; b. Independent variable: Entrepreneurial intention

TABLE 2 shows that the correlation coefficient is 0.752 between the predictive variables and the entrepreneurial intention, the coefficient of determination (R^2) is 0.566, the adjusted R^2 is 0.560 and the estimated standard error of MSE is 7.568. Because of the forceful entrance of variables, there is only a regressive model, so the R squared change equals the R squared statistic 0.566 meaning the five predicative variables can explain 56.6% amount of variability of the criterion variable.

TABLE 3 : Variance analysis

Model		Quadratic Sum	df	Mean Square	F	Sig.
1	Regression	42676.538	5	15241.621	233.512	.000[b]
	Residual Error	30879.074	474	64.763		
	aggregate	73555.612	479			

a. Dependent Variable: Entrepreneurial Intention; b. Predictable variables: (constant), prior knowledge, social network, personal motives, school factors, social factors

TABLE 3 shows that F is 233.512 and P is 0.000 which is smaller than the significant level of 0.05 meaning statistically significant for the regressive model to wholly explain the amount of variability.

TABLE 4 : Regression coefficient

Model		Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
		B	Standard Error	Beta Distribution			tolerance	VIF
1	(Constant)	5.858	1.563		10.056	.000		
	Prior Knowledge	.873	.077	.257	6.625	.000	.267	3.743
	Social Network	.376	.125	.118	2.463	.024	.348	2.874
	Personal Motives	.906	.086	.246	6.322	.000	.315	3.171
	School Factors	.456	.109	.129	2.458	.000	.310	3.242
	Social Factors	.364	.176	.105	2.319	.013	.289	3.736

a. Dependent variable: entrepreneurial intention

The nonstandard regressive equation gotten from the TABLE 4 is as follows:

Entrepreneurship intention=5.858+0.873×prior knowledge+0.376×social network+0.906×personal motives+0.456×school factors+0.364×social factors

But because nonstandard regressive coefficients include a constant item and can't compare relative importance of the predictive variables the researchers changed the original regression equation into a standard regression equation as follows:

Entrepreneurship intention=0.257×prior knowledge+0.118×social network+0.246×personal motives+0.129×school factors+0.105×social factors

From the standard regression equation, the orders of influential strength from the five predictive variables on the criterion variable are as follows: prior knowledge, personal motives, school factors, social network and social factors. The

standard regression coefficients of the five independent variables are all positive meaning their influence over the dependent variable are all positive. The t values tested by significance of the five independent variables' regression coefficients are respectively 6.625 (P=0.000<0.05), 2.463 (P=0.024<0.05), 6.322 (P=0.000<0.05), 2.458 (P=0.000<0.05), 2.319 (P=0.013<0.05).

TABLE 5 Collinearity diagnosis

Model	Dimension	eigenvalue	Condition Index	Variance Proportion					
				(Constant)	Prior Knowledge	Social Network	Personal Motive	School Factors	Social Factors
1	1	7.904	1.000	.00	.00	.00	.00	.00	.00
	2	.014	17.024	.67	.01	.00	.00	.01	.00
	3	.020	19.831	.06	.18	.14	.01	.01	.04
	4	.018	23.588	.07	.18	.03	.17	.16	.07
	5	.016	25.958	.11	.01	.17	.00	.42	.32
	6	.009	30.157	.01	.00	.05	.79	.28	.04

a. Dependent variable: entrepreneurial intention

From TABLE 5, there is only one that is smaller than 0.10 among the six Eigen values. Its corresponding conditional parameter value is 30.157 that is slightly larger than 30. Observing from the variance proportions, the researchers did not find any two variables have the proportions which are higher than 0.800 or 0.700 over some Eigen value at the same time meaning there is not serious multicollinearity among the independent variables and the result is the same as the above result calculated by VIF and tolerance value.

CONCLUSION AND EXPECTATION

Through the above empirical study, the paper gets the main conclusions as follows: (1) the classified variables about students' background have significant difference over each influential factor of Internet entrepreneurship intention; (2) the five hypotheses raised in the previous discussions can be established, namely the factors including prior knowledge, social network, personal motives, school factors and social factors all produce obvious influence over Internet entrepreneurship intention and their influence are all positive. According the positive relation strength, the rank of influential strengths between the five independent variables and the dependent variable are prior knowledge, personal motives, school factors, social network and social factors.

Certainly, the paper's research is somewhat limited. Because the support gained by the study is limited the study samples are all from the city where the researchers live. In addition, the study samples are all from common universities, not including other universities like 985 Project universities, 211 Project universities, independent colleges and vocational colleges, so the samples' representativeness is somewhat insufficient. In subsequent researches, we will plan to select some cities based on the regions from East China, Middle China to West China and select students from various kinds of universities of the cities as the research samples so as to improve the study's representativeness and reliability as far as possible.

CONFLICT OF INTEREST

This article content has no conflict of interest.

REFERENCES

[1] Yinan Su, Yongyue Zhu, Zhiqiang Ma; "The problems' analysis and policies' study for Internet entrepreneurship of university students", China Higher Education Research, 59-60, **(October 2009)**.

[2] Yaojing Gen; "The entrepreneurial problems of university students under the Internet environment", Henan Social Sciences, **15(5)**, 161-3 **(May 2007)**.

[3] Yanlin Cheng, Yongwei Zhou; "The dilemmas and policies for Internet entrepreneurship of university students, China Youth Study, 75-7 **(November 2007)**.

[4] C.Millman, Z.Li, H.Matlay et al; "Entrepreneurship education and students' internet entrepreneurship intentions: Evidence from Chinese HEIs", Journal of Small Business and Enterprise Development, **17(4)**, 569-590 **(2010)**.

[5] Yonghong Qian; "On the determinants of Entrepreneurial Intentions", Journal of Zhejiang University (Humanities and Social Sciences), **37(4)**, 144-152 **(2007)**.

[6] M.G.Scott, D.F.Twomey; "The long-term supply of entrepreneurs: students' career aspirations in relation to

entrepreneurship", Journal of Small Business Management, **26(4)**, 5-13 **(1988)**.

[7] Yinghua Ye; "Research on the influencing factors of university students' intention of entrepreneurship", Educational Research, 73-7 **(2009)**.

[8] Wenjuan Chen, Guanxin Yao, Zhandong Xu; "An empirical research on factors affecting university students' entrepreneurial intention", China Higher Education Research, 86-90 **(September 2012)**.

[9] Dan Lu, Yue Dai; "Research on influential factors of entrepreneurial motives of university students from West China cities under the demography's background", Education and Vocation, **24**, 89-90 **(August 2012)**.

[10] Jingbao Huang; "Analysis on factors affecting university students' entrepreneurship", China Adult Education, **22**, 121-4 **(2011)**.

[11] D.L.Sexton, N.Bowman; "The entrepreneur: A capable executive and more", Journal of Business Venturing, **1(1)**, 129-140 **(1986)**.

[12] W.B.Gartner; "A conceptual framework for describing the phenomenon of new venture creation", **10(4)**, 696-706 Academy of management review, **(1985)**.