

Research on the Impact of College Students' Financial Literacy on E-Commerce Entrepreneurial Willingness in the Context of "Internet Plus"

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Abstract: The important bottleneck of college students' entrepreneurship is the shortage of funds, which is more serious in rural areas. At present, college students generally lack financial literacy and practical experience in the collection and use of funds in entrepreneurship. These financial difficulties are constantly emerging in the process of entrepreneurship. In order to solve entrepreneurship financing problem and then improve the success rate of college students' rural entrepreneurship, this research tries to improve college students' financial literacy. Firstly, a survey scale of college students' financial literacy on rural entrepreneurship willingness is designed, and relevant research hypotheses are proposed. Secondly, through statistics of the scale, empirical test on the relationship between financial literacy and rural entrepreneurship willingness is done in order to find the path and breakthrough in improving college students' financial literacy. Finally, from the perspectives of individuals, universities, government and society, the strategy of improving financial literacy is discussed to serve college students' rural entrepreneurship so as to help them solve the problem of venture financing, improve their success rate for rural entrepreneurship, which will serve the National Rural Revitalization Strategy.

Keywords: Internet Plus; Financial Literacy; E-Commerce Entrepreneurial Willingness; E-Commerce Entrepreneurial Desire; E-Commerce Entrepreneurial Possibility

1. Introduction

In the era of network economy, the "Internet plus" action plan carried out by the state provides new opportunities and platforms for college students to start a business. The Chinese "Internet plus" Undergraduate Innovation and Entrepreneurship

Competition, led by the Ministry of Education, has been held for many times since 2015. Colleges and universities at all levels have actively participated in these competitions and some of them got remarkable achievements. E-commerce entrepreneurship has the characteristics of low entry barriers, quick results, and being unaffected by time and geography, making it a common type of entrepreneurship for college students. But in reality, although many college students have insights into market opportunities, they are constrained by a lack of entrepreneurial funds to start a business^[1]. Thus, funding is a key factor which affects college students' decision for e-commerce entrepreneurship since they usually lack financial literacy and experience in raising and using funds, which hinders their willingness to start a business. This article can make the following contributions through empirical research: (1) empirically test the effect of financial literacy on e-commerce entrepreneurial willingness, and analyze how it takes effects and its key influencing mechanisms. (2) Based on the impact mechanism, propose improvement strategies for promoting e-commerce entrepreneurship willingness through financial literacy from the perspectives of individuals, colleges, government as well as the society. The improvement of college students' financial literacy will help to alleviate the difficulty of entrepreneurship financing, and then improve the success rate of college students' entrepreneurship.

2. Literature Review

2.1 Research on Financial Literacy

Financial literacy is often defined as an individual's ability to manage capital and make wise decisions. Chen and Volpe designed a questionnaire to investigate financial literacy through knowledge about economics, personal finance and some basic financial knowledge^[2]. Huston tried to build a universal measurement

system from four dimensions [3]. Chinese scholars have measured the level of financial literacy from the perspectives of consumers, rural residents, urban residents, college students and women. In a word, the definition of financial literacy and the evaluation methods provided by scholars have made a solid theoretical basis for this research.

2.2 Research on College Students' E-Commerce Entrepreneurial Willingness

The academia has conducted research on the influencing factors of college students' willingness to engage in e-commerce or online entrepreneurship. Through empirical research, Wang found that personal traits, entrepreneurial attitude, education background, and entrepreneurial environment factors of college students positively affect their willingness to engage in online entrepreneurship [4]. Financial literacy includes personal traits and entrepreneurial education background and so on. Zheng studied the impact of individual trait factors on college students' willingness to engage in online entrepreneurship and found that individual's attitude about challenges, cooperations, and innovations positively affect college students' willingness to engage in online entrepreneurship [5]. Individual traits, such as financial awareness and financial ability are included in one's financial literacy. Liu found through a survey that among the influencing factors of college students' entrepreneurial willingness, financial support, risk taking, and willingness to take challenges have the greatest impact [6]. Yu found that the driving factors for college students to engage in rural e-commerce entrepreneurship include e-commerce entrepreneurship education offered by universities, investment and support from leading e-commerce enterprises in the rural e-commerce market, and financial support on rural e-commerce by the government [7].

There has been a lot of research on the influencing factors of college students' willingness to start an e-commerce business, from perspectives such as personal traits, family factors, university entrepreneurship education, and regional economic environment [8]. However, there is relatively little literature on college students' willingness to start an e-commerce business from the perspective of financial literacy. Some financial literacy content is hidden in the general factors mentioned above and has not been decomposed. So it is necessary to unravel the black box of the relationship between financial literacy and entrepreneurial willingness.

3. The Mechanism of College Students' Financial Literacy on Their E-Commerce Entrepreneurial Willingness

3.1 Defining Variables

3.1.1 Measurement of college students' financial literacy

The measurement of financial literacy was first studied by Chen and Volpe when they made investigation on issues about personal finance of college students. They found that these issues included financial cognition, financing and lending, financial risk management and so on. Nowadays, financial literacy is mostly evaluated from three dimensions of compound interest, inflation and risk diversity [9]. Liu divides financial literacy into financial knowledge, financial skills, financial behavior and financial attitude [10]. Su and Kong tried to build financial literacy indicators with regional features, mainly involving three dimensions, i.e. financial knowledge, financial awareness and financial ability [11]. To sum up, this paper divides college students' financial literacy into three parts based on existing research, and designs a new measurement scale. The financial literacy measurement scale for college students is shown in Table 1.

3.1.2 Measurement of college students' e-commerce entrepreneurial willingness

There are two ways for scholars to measure entrepreneurial willingness. One is to use a single variable measurement method, such as measuring individual expectations, preferences, plans, behavioral expectations and so on. The other is to use multivariable measurement, for example, measuring their desire and possibility of starting a business [12]. Zhao regards entrepreneurial willingness as a one-dimensional variable and sets up five items to measure it [13]. Liu divides entrepreneurial willingness into two dimensions, i.e. perceived desire and possibility [14]. Based on the above research, this paper uses multi-dimensional indicators to measure entrepreneurial willingness through entrepreneurial desire and possibility.

Table 1. Financial Literacy Scale for College Students

Dimension	Item
Financial awareness (FAW)	It is necessary for college students to invest and finance.
	It is necessary for college students to purchase life insurance.
	When I buy financial products, I will

	take the initiative to understand the rights and obligations of the products.
Financial knowledge (FKN)	I understand the bank’s credit card, wealth management products, loans and other businesses.
	I pay attention to maintaining my personal credit in daily life.
	I understand the risks of investing in stocks.
Financial ability (FAB)	I often use Alipay or WeChat to pay.
	When I need money for emergencies, I can borrow it from my relatives, friends or neighbors.
	I have independent experience in handling deposits, withdrawals and remittances.

The scale of college students’ e-commerce entrepreneurial willingness is shown in Table 2.

3.2 Theoretical Model Construction

3.2.1 Financial literacy and e-commerce entrepreneurial desire

The important aspect of college Students’ entrepreneurship education involves entrepreneurship finance, allocation of funds, investment of funds and so on. If college students have entrepreneurial skills and financial skills, they will have powerful ability to assess entrepreneurial opportunities and control the financial arrangement through the entrepreneurial process better. Mastering these skills can increase the attractiveness and possibility of starting a business. At the same time, if students have a clear understanding of the financing and capital operation of start-up businesses, they can make themselves well prepared, and then have stronger willingness to start a business. Mastering financial skills of starting a business will improve college students’ entrepreneurial enthusiasm. Tian found that financial literacy has a greater impact on entrepreneurial motivation, which includes entrepreneurial attraction, entrepreneurial enthusiasm and other factors^[15].

Table 2. Scale of College Students’ E-Commerce Entrepreneurial Willingness

Dimension	Item
Entrepreneurial desire (ED)	Starting an e-commerce business is attractive to me.
	I have a strong desire to start an e-commerce business.
	I will be enthusiastic about starting an e-commerce business.
Entrepreneurial	I think it’s feasible to start an

possibility (EP)	e-commerce enterprise by myself.
	If I start an e-commerce business, I think I have a good chance of success.
	I’m ready to start an e-commerce business.

Specifically, in terms of starting an e-commerce business, improving financial literacy and mastering financial skills will make them more confident in setting up e-commerce enterprises, and they will have stronger willingness and enthusiasm to devote themselves to e-commerce businesses. Using financial skills to estimate the costs and benefits of e-commerce enterprises will help them better assess the possibility and get prepared for starting a business. The improvement of college students’ financial literacy can improve their enthusiasm to start an e-commerce business and their success rate.

Therefore, this paper assumes that:

Hypothesis 1: Financial awareness has a significant positive impact on e-commerce entrepreneurial desire.

Hypothesis 2: Financial knowledge has a significant positive impact on e-commerce entrepreneurial desire.

Hypothesis 3: Financial ability has a significant positive impact on e-commerce entrepreneurial desire.

3.2.2 Financial literacy and e-commerce entrepreneurial possibility

If college students have good financial awareness, rich financial knowledge and basic financial ability, they will be clearer about their own financial situation. Thus, they will plan their future rationally and get well prepared for entrepreneurship. College students’ understanding of return on investment and time value of money can help them to better estimate the cost and profit and optimize their plan for starting their own businesses. Financial knowledge such as return on investment also helps college students to estimate the financial cost of entrepreneurship, make reasonable financial arrangements, and then improve the ability to evaluate entrepreneurial opportunities, so as to make adequate preparations for entrepreneurial activities. College students’ financial literacy can affect their entrepreneurial decisions through taking entrepreneurial cost and income, efficiency of venture capital operation, and return of venture capital into consideration. It can affect college students to identify and evaluate entrepreneurial opportunities and also affect their decision about whether to implement

entrepreneurial plan or not.

Therefore, this paper assumes that:

Hypothesis 4: Financial awareness has a significant positive impact on e-commerce entrepreneurial possibility.

Hypothesis 5: Financial knowledge has a significant positive impact on e-commerce entrepreneurial possibility.

Hypothesis 6: Financial ability has a significant positive impact on e-commerce entrepreneurial possibility.

3.3 Data Analysis

The survey scale is divided into two parts, i.e. financial literacy and e-commerce entrepreneurial willingness. There are 15 questions assigned with credits according to the Likert five scale method. These questions are classified into two categories. The first category mainly investigates the financial literacy of college students, including financial willingness, financial knowledge and financial ability. The second category mainly investigates college students' entrepreneurial willingness, including entrepreneurial desire and entrepreneurial possibility. The questionnaire is mainly distributed in colleges in Jiangsu Province of China. 305 questionnaires were distributed, 268 questionnaires were collected, and 240 valid questionnaires were obtained, with a questionnaire effectiveness rate of 78.69%.

3.3.1 Data processing

In order to clarify the internal structure of observation variables and verify the rationality of related measurement items, we need to do factor analysis on variables. Firstly, factors should be extracted from observation variables, and then the score of factors (potential variables) should be calculated. Then regression should be done among factor scores.

3.3.1.1 Analysis on financial literacy

Before factor extraction of the three dimensions of college students' financial literacy, KMO and Bartlett tests were conducted. The KMO value of is 0.708, which means it is suitable for factor analysis. Then, factor analysis was carried out on financial literacy, and three factors were extracted according to the selection criteria that the characteristic root was greater than 1 and the maximum factor load was greater than 0.5. The items of financial awareness, financial knowledge and financial ability are all included in a factor. The factor load of each item is greater than 0.5, and the cumulative interpretation variation of the three factors is 76.731%, which passes the validity

test of factor analysis.

Next, in order to test the internal consistency among the items, this paper conducts a reliability analysis on the factors of financial literacy. The overall Item-Total correlation of each variable is greater than 0.35, and Cronbach's α coefficients of each variable is greater than 0.7. Therefore, there is good internal consistency among items. Then, according to the results of factor analysis, factor (potential variable) scores are calculated to prepare for regression analysis of potential variables.

3.3.1.2 Analysis on e-commerce entrepreneurial willingness

Before factor extraction of the two dimensions of entrepreneurial desire and entrepreneurial possibility, KMO and Bartlett tests were conducted. The KMO value is 0.757, indicating that factor analysis is appropriate.

Then, factor analysis was carried out on e-commerce entrepreneurial willingness. The main component method was used to extract the factors. The factors were extracted according to the selection criteria that the characteristic root was greater than 1 and the maximum factor load was greater than 0.5. finally, two factors were extracted. The items of entrepreneurial desire and entrepreneurial possibility are separately included in a factor, and the factor load of each item is greater than 0.5. The cumulative interpretation variation of the two factors is 81.543%, which passes the validity test of factor analysis.

Next, in order to test the internal consistency among the items, this paper conducts a reliability analysis on the factors of e-commerce entrepreneurial willingness. The overall Item-Total correlation of each variable is greater than 0.35, and Cronbach's α of each variable are greater than 0.7. Therefore, there is good internal consistency. Then, according to the results of factor analysis, factor (potential variable) scores are calculated to prepare for regression analysis of potential variables.

3.3.2 Result analysis

Before the regression analysis, it is necessary to test whether the model has multicollinearity by variance expansion factor and tolerance value. Through test, it is found that the variance expansion factors of financial literacy on entrepreneurial desire and entrepreneurial possibility are both 1, and the minimum tolerance value is 1, which shows that there is no serious multicollinearity in the two models.

3.3.2.1 Financial literacy and e-commerce entrepreneurial desire

In order to test the relationship between college students' financial literacy and e-commerce entrepreneurial desire, SPSS26 was used to conduct multiple linear regression analysis. The regression results are shown in Table 3. It can be seen that financial awareness has no significant positive impact on entrepreneurial desire; financial knowledge has no significant positive impact on entrepreneurial desire; and financial ability has significant positive impact on entrepreneurial desire. Through regression analysis, it is found that Hypothesis 1 and Hypothesis 2 are not valid, while Hypothesis 3 is valid.

College students' financial awareness has no significant positive impact on entrepreneurial

desire. Financial awareness includes the understanding of investment and financing, insurance, financial products and other factors. Having a good financial awareness cannot directly motivate students' desire to start a business. It is not enough to cultivate financial awareness to improve the attractiveness of entrepreneurship. At the same time, the key bottleneck of college students' entrepreneurship lies in seeking for entrepreneurial financing. Before the enterprise has grown up, the importance of such behaviors as investing and financing, purchasing insurance and other financial products is much smaller than finding more funds for enterprise operation.

Table 3. Regression Results of Financial Literacy and Entrepreneurial Desire

Model	Unstandardized Coefficients		standardized Coefficients	t	Sig.
	B	S.E.	Beta		
1	(Constant)	-1.771E-17	.064	.000	1.000
	FAW	.055	.064	.055	.850
	FKN	.058	.064	.058	.904
	FAB	.135	.064	.135	2.095

College students' financial knowledge has no significant positive impact on entrepreneurial desire. Financial knowledge involves knowledge about banks, personal credit, stock investment, etc. Activities involving stock investment and banking business are concentrated in the late stages of entrepreneurship. For the preparation in the early stage of entrepreneurship, these activities have limited impact on attracting to college students to start a business and stimulating their entrepreneurial enthusiasm.

The financial ability of college students has a significant positive impact on e-commerce entrepreneurial desire. A large part of college students' venture capital comes from their own funds or loans from relatives and friends, and there may be some preferential credit from banks supported by the government. Therefore, obtaining funds from relatives, friends or the government can promote college students to start their own businesses and stimulate their entrepreneurial enthusiasm. To sum up, the verification of the research hypothesis basically conforms to the reality of college students' entrepreneurship.

3.3.2.2 Financial literacy and e-commerce entrepreneurial possibility

In order to test the relationship between financial literacy and e-commerce entrepreneurial possibility, SPSS26 was used for multiple linear regression. The regression results are shown in Table 4. It can be seen that financial awareness has a significant positive impact on entrepreneurial

possibility; financial knowledge has a significant positive impact on entrepreneurial possibility, and financial ability has a significant positive impact on entrepreneurial possibility. Hypothesis 4, 5 and 6 are valid.

The financial literacy has a significant positive impact on entrepreneurial possibility. The awareness or knowledge of investment and financing, insurance, banking, credit contained in financial literacy directly reflects college students' financial skills. College students with financial skills generally have better ability to identify and grasp entrepreneurial opportunities, and have more experience in financial operation as well as borrowing capitals. Therefore, their possibility of starting a business will be higher since they can better prepare for entrepreneurship. By comparing the two regression models, we find that the impact of financial awareness and financial knowledge on entrepreneurial desire reflects the potentiality of college students' entrepreneurship; The impact of financial awareness and financial knowledge on entrepreneurial possibility reflects the executive power of college students' entrepreneurship. There are several steps driving the entrepreneurial potentiality to executive power, and the difference between the two models also reflects the difference in affection mechanism. Through loans from relatives, friends or preferential loans from the government, college students can obtain start-up funds, make better products, expand business scale, and improve the success rate of

entrepreneurship.

Table 4. Regression Results of Financial Literacy and Entrepreneurial Possibility

Model	Unstandardized Coefficients		standardized Coefficients	t	Sig.	
	B	S.E.	Beta			
2	(Constant)	-3.202E-17	.063		.000	.007
	FAW	.172	.063	.172	2.740	.031
	FKN	.137	.063	.137	2.176	.026
	FAB	.141	.063	.141	2.246	.007

4. Strategies for Improving College Students' Financial Literacy Based on E-Commerce Entrepreneurship

College students' financial literacy needs to be promoted by joint efforts from individual, college and government. Through creating a friendly environment for personal learning, college education, government guidance and social construction, college students are more likely to start an e-commerce business.

4.1 Strategies for Individuals

College students need to actively learn various financial management knowledge, master financial skills necessary for entrepreneurship, especially financing, capital planning for emergencies. Moreover, entrepreneurs need to have a deep understanding of various national entrepreneurial support policies, actively obtain financing information from colleges, governments and social institutions, make adequate preparations for applying for entrepreneurial funds and obtaining financial support.

4.2 Strategies for Colleges

Colleges should improve students' comprehensive financial literacy from entrepreneurship curriculum, practice and tutor allocation. First of all, colleges can set up courses in venture financing and financial management to help students improve their financial literacy and entrepreneurial financial skills through theoretical study and case training. Secondly, they should carry out various e-commerce entrepreneurship projects so that students can not only obtain professional skills, but also improve financial skills and literacy through these projects.

4.3 Strategies for Government

The government should actively publicize various government venture capital platforms and technical service platforms so that entrepreneurs can better understand the government's support policies better, and they can make good use of various government services while reducing

burdens at their early stages of entrepreneurship. Meanwhile, the government should give priority to college student entrepreneurship projects and rural e-commerce entrepreneurship projects, and give full play to the exemplary role of government guidance funds.

4.4 Strategies for Society

We should actively popularize financial education to college students and make them fully understand the function of inclusive finance and small and micro finance. We can create a friendly social atmosphere that encourages entrepreneurship and tolerates failure. Young people are encouraged to innovate boldly in entrepreneurial projects. Apart from that, we should create a healthy and good entrepreneurial financial atmosphere, so that entrepreneurs have no worries about social pressure caused by entrepreneurial failure.

5. Conclusion

Under the background of "Internet plus" action plan, it is particularly necessary to guide college students to innovate and start an e-commerce business. This paper investigates the current situation of college students' financial literacy in Jiangsu Province in China, and then discusses the impact of college students' financial literacy on e-commerce entrepreneurial willingness. Guided by e-commerce entrepreneurship, this paper finds the bottleneck of cultivating college students' financial literacy, and puts forward relevant promotion strategies from the individual, college, government and social aspects. This paper enriches and improves the theory of college students' e-commerce entrepreneurship, and provides a decision-making basis for the government to draw up entrepreneurship support policies.

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