

Social Networks and Entrepreneurship

The Mediating Role of Alertness

Zhiwen Zhou¹, Wanying Fu^{2*}
zhiwenzhou79@126.com, bffwy0906@163.com

¹Ideological and Political Department Beijing Institute of Fashion Technology, Beijing, China

²Ideological and Political Department, Beijing Institute of Fashion Technology; School of Marxism, Beijing Normal University, Beijing, China

Corresponding Author

Abstract—Based on information processing theory and emotion consistency theory, this study reviewed pieces of literature on four variables, namely, social networks, entrepreneurial alertness, entrepreneurial behavior and entrepreneurial emotion, preliminarily determined the relationship among each variable, and proposed relevant hypotheses. Then this study to explore empirically the relationship between the variables, and discuss the empirical study based on the above theory, information processing theory, emotional consistency of social networks, entrepreneurial alertness, entrepreneurial behavior, business sentiment has carried on the literature review four variables, the relationship between the variables were initially determined, put forward relevant assumptions. Subsequently, this study empirically explores the relationship between variables and discusses the empirical analysis results mentioned above. Social networks positively influences entrepreneurial behavior, entrepreneurial alertness mediates the relationship between social networks and entrepreneurial behavior, and negative entrepreneurial emotion negatively moderates the relationship between social networks and entrepreneurial behavior.

Keywords- Entrepreneurial environment; Entrepreneurial passion; Entrepreneurship; Entrepreneurial alertness

1 INTRODUCTION

China is facing the fourth wave of entrepreneurship, the Party and the government have put forward a number of development strategies such as "independent innovation" and "integrated innovation", and various social subjects are also engaged in entrepreneurship practice. College students are the most dynamic creative talents in China and their entrepreneurial activities can provide inexhaustible power for the construction of an innovative country. China's "Internet plus" initiative has constantly spawned all kinds of new enterprises, and traditional enterprises have gradually carried out intelligent transformation. The employment concept of college students also began to change, more and more college students choose to start their own

business. In the face of college students, universities, the government and society also actively encourage entrepreneurship to ease the employment pressure of college students.

A social networks is a set of individuals or organizations and the relationships between them and provides an important channel for accessing information and resources. Scholars propose that entrepreneurial activities are rooted in social networks and social networks is an important basis for individuals to win entrepreneurial resources. The position and structure of college students' entrepreneurs in embedded social networks influence their recognition of entrepreneurial opportunities hidden in complex environments. Based on this, this study focuses on college graduates and explores the mechanism of college students' social networks on entrepreneurial behavior.

Entrepreneurial alertness is a framework of knowledge that people use to assess, judge or make decisions about opportunity assessment, risk creation and growth. One of the main factors affecting individual cognitive sensitivity and alertness is social networks. At the same time, social networks is also an important channel for individuals to obtain entrepreneurial information and resources. It is the prerequisite for individuals to become potential entrepreneurs or entrepreneurs. The generation of entrepreneurial behavior depends on various factors and conditions, such as people's psychological and personal characteristics as well as environmental and structural factors. Entrepreneurial alertness is one of the necessary conditions for individuals to carry out entrepreneurial activities. It is a bridge between individual thinking and action and reflects individual psychological perception in entrepreneurial activities. College students' entrepreneurial alertness affects their judgment of various entrepreneurial information and opportunities. Based on this, this study considers that entrepreneurial alertness plays a mediating role between social networks and entrepreneurial behavior.

Entrepreneurial emotion is a kind of emotion held by individuals in the process of entrepreneurship under the stimulation of entrepreneurial environment, including positive and negative emotions. Different emotional reactions have an impact on individual behavior, so it can be seen that different emotions of individuals have an impact on their entrepreneurial behavior. College students' emotions play a role in strengthening or weakening individual behaviors. Based on this, this study considers that entrepreneurial emotion plays a moderating role between social networks and entrepreneurial behavior.

2 THEORETICAL BASIS AND RESEARCH HYPOTHESIS

2.1 Information processing theory and emotion consistency theory

Based on information processing theory and emotion consistency theory, the research model is established. From the perspective of information processing, entrepreneurship is a process in which individuals acquire, store, transform and use entrepreneurial information. Individuals obtain information from the outside, form personal judgment through information processing, and then produce entrepreneurial behavior. Social networks can be regarded as a network of external information and resources owned by individuals, and the vigilance shown by individuals is the cognition and judgment generated in the process of using entrepreneurial

information. Individuals extract relevant entrepreneurial information from social networks into sensory organs and convert complex information into short-term memory and long-term memory. The perception, transmission and encoding of information in the sensory system and memory system form the individual's vigilance to part of entrepreneurial information, which is finally transmitted to the reactor to produce the output of entrepreneurial behavior. Starting from the theory of emotional consistency, individual emotion, as another signal, also acts on individual entrepreneurial activities. Individual emotional changes will send positive or negative signals, which will affect people's thinking mode, and then form the interaction between emotion and individual cognition, which will affect the final result. Information processing theory and emotional consistency theory explain the research model of this paper well, reveal the relationship among social networks, entrepreneurial vigilance, entrepreneurial emotion and entrepreneurial behavior, and provide a solid theoretical support for this paper. Therefore, this paper argues that social networks influence entrepreneurial behavior, while entrepreneurial alertness and entrepreneurial emotion play a mediating and moderating role respectively.

2.2 The relationship between social networks and entrepreneurial behavior

Walker and MacBride (1997) showed that the effectiveness of emotional and material support provided by social networks will increase when the social networks is larger and network members have more frequent contact. Therefore, when individuals have rich entrepreneurial resources and diversified information acquisition channels, they are likely to become potential entrepreneurs and make use of the information and resources they have mastered to prepare for entrepreneurship ^[5]. In the past, college students have come into contact with different teachers, classmates and friends at each stage of their growth. Each student forms his own unique network of relationships. This social networks formed in past experiences plays a huge role in future life. In the future, when students enter the society, they may enter different positions, and this invisible social networks will form a resource. This resource will influence the entrepreneurial choice and future entrepreneurial direction of the individual. Hence the hypothesis.

H1: Social networks is positively correlated with entrepreneurial behavior

2.3 The mediating role of entrepreneurial vigilance

The theory of information processing explains the process of human cognition and human behavior. Entrepreneurship alertness can be regarded as the cognition formed in the process of individual information processing ^[6]. When individuals recognize entrepreneurial opportunities, they will judge the feasibility of entrepreneurship, and eventually generate entrepreneurial intentions and output entrepreneurial behaviors. In the process of communication between college students and members of their social networks, they will exchange and learn information, knowledge and experience, and improve their ability to evaluate and judge entrepreneurial information and opportunities in the process of communication and learning. It can be said that social networks is the premise to improve college students' entrepreneurial alertness. At the same time, the alertness in turn makes them have entrepreneurial ideas and put them into practice, that is, the improvement of entrepreneurial alertness is conducive to the emergence of entrepreneurial behaviors of college students. Hence the hypothesis.

H2: Entrepreneurial alertness plays a mediating role between social networks and entrepreneurial behavior.

2.4 The moderating role of entrepreneurial sentiment

According to the emotional consistency theory, individuals with positive emotional states can expand their cognitive range when recalling, paying attention to, perceiving and interpreting information. Therefore, whether an individual's entrepreneurial mood is positive will affect the efficiency of capturing and collecting information. This study suggests that entrepreneurial emotion moderates the impact of social networks on entrepreneurial behavior. When college students have strong entrepreneurial positive emotions, they will be more active in communication with social networks members to acquire information resources, learn from experience, seize entrepreneurial opportunities and carry out entrepreneurial activities. When interacting with social networks members, college students with negative entrepreneurial emotions react slowly to the information resources they have obtained and hesitate in the face of entrepreneurial opportunities, which is not conducive to entrepreneurial activities. Hence the hypothesis.

H3: Entrepreneurial emotion plays a moderating role between social networks and entrepreneurial behavior

3 RESEARCH METHODS

3.1 Data collection

This paper selects college graduates as the respondents, including those who have started their own business or are preparing for it. In this study, a total of 500 questionnaires were sent out, and invalid questionnaires were removed. Finally, 324 valid questionnaires were collected.

3.2 Measuring tools

The scale in this paper uses mature scales at home and abroad for reference and adopts five-point Likert scale for measurement and evaluation, with 1 indicating "completely disagree" and 5 indicating "completely agree".

- Social networks variable measurement divides social networks into four dimensions: network centrality, network size, network strength and network heterogeneity, with 12 questions^[1]. Combined with the research practice of this paper, the relevant items are adjusted. Network scale includes three questions: "I can quickly obtain information and resources from others"; Network intensity includes three questions: "I have a very high frequency of interaction with people I think important"; The scale of the network includes three questions, such as "I am able to contact and know more people at school than my classmates", and the heterogeneity of the network includes three questions, such as "the people I keep in touch with come from different regions". The overall Cronbach α value of the scale was 0.89, and the Cronbach α values of the four dimensions were 0.746, 0.778, 0.79 and 0.78 respectively.

- The variable measurement scale of entrepreneurship alertness is divided into three dimensions, including nine items of perceived alertness, thinking alertness and reaction alertness ^[2]. The overall Cronbach ' α ' value of the scale was 0.89, and the Cronbach ' α ' value of the three dimensions were 0.74, 0.823 and 0.713, respectively.
- The variable measurement scale of entrepreneurial behavior refers to the entrepreneurial behavior scale for college students developed by Yao Xiaolian (2014) and Yu Fumao et al. (2010), covering five items including the degree of energy investment ^[3], the degree of opportunity search and the degree of capital preparation, the degree of interpersonal network construction and the degree of market understanding. The Cronbach ' α ' value of the scale was 0.895.
- Entrepreneurial emotion ^[4] The entrepreneurial positive emotion measurement scale contains 5 items such as "I often feel excited in the process of starting a business", and negative emotion contains 5 items such as "I often feel angry in the process of starting a business". The overall Cronbach ' α ' value of the scale was 0.95, and the Cronbach ' α ' values of the two dimensions were 0.941 and 0.923, respectively.
- This study proposed six variables as control variables: gender, education background, discipline category, household registration, entrepreneurial experience and entrepreneurial courses.

4 RESEARCH RESULTS

4.1 Correlation analysis

All dimensions of social networks are positively correlated with entrepreneurial behavior, with correlation coefficients of 0.501, 0.416, 0.421 and 0.476, respectively, indicating that network centrality, network size, network strength and network heterogeneity are correlated with entrepreneurial behavior. Secondly, there is a significant positive correlation between the dimensions of entrepreneurial alertness (perceptual alertness, thinking alertness and reaction alertness) and entrepreneurial behavior, with the correlation coefficients being 0.559, 0.617 and 0.508, respectively. In addition, there is a significant positive correlation between the dimensions of social networks and the dimensions of entrepreneurial alertness, so regression analysis can be carried out to verify the previous hypothesis.

4.2 Regression analysis

4.2.1 Main effect

In model 0, the normalized regression coefficients of network centrality, network size, network strength, and network heterogeneity were 0.034, 0.373, 0.246, and 0.236 ($P < 0.05$), indicating that the hypothesis test of social networks and entrepreneurial behavior was established. It is assumed that the network centrality, network size, network strength and network heterogeneity from H1a to H1d significantly positively affect entrepreneurial behavior.

4.2.2 Mediating effect

According to the data analysis results, the standardized coefficient of perceived alertness is 0.427 and P value <0.001, indicating that the mediating effect of perceived alertness between social networks and entrepreneurial behavior has passed the test. According to Model 2, the standardized coefficient of perceived alertness is 0.427 and P value <0.001, indicating that perceived alertness plays a partially mediating role between various dimensions of social networks and entrepreneurial behavior. The results indicate that response alertness plays a partial mediating role in the relationship between social networks dimensions and entrepreneurial behavior. According to Model 3, the standardized coefficient of thinking alertness is 0.468, and P value <0.001, indicating that thinking alertness plays a partial mediating role between the dimensions of social networks and entrepreneurial behavior.

4.2.3 Moderating effect

According to Model 5, the normalized coefficient of interaction between social networks and positive emotion is 0.022, $P > 0.1$. Therefore, positive entrepreneurial emotion has no moderating effect on entrepreneurial alertness and social networks, and false H5a is not valid. According to Model 4, the normalized coefficient of interaction between social networks and positive emotion is -0.211, and P value <0.05. Therefore, negative entrepreneurial emotion has a negative moderating effect on social networks and entrepreneurial behavior, and the false H5b hypothesis is established. Part of the test of the moderating effect of entrepreneurial emotion on social networks and entrepreneurial alertness in this study passed, that is, positive entrepreneurial emotion does not have a moderating effect on social networks and entrepreneurial alertness, but negative entrepreneurial emotion has a negative moderating effect on social networks and entrepreneurial alertness.

Table 1 Means, Standard Deviations, And Correlations Among Study Variables

Variable	1	2	3	4	5
Centricity	1				
Scale	.573**	1			
Intensity	.127*	.327**	1		
Heterogeneity	.352**	.421**	.484**	1	
Alertness	.595**	.515**	.476**	.447**	1
Mind Alert	.624**	.409**	.405**	.359**	.822**
Reaction Alert	.561**	.611**	.442**	.476**	.578**
Positive Emotion	.398*	.294*	.179**	.173*	.629*
Negative Emotion	.399*	.200**	.140*	.147*	-.406*
Entrepreneurial Behavior	.501**	.416**	.421*	.476**	.559**
Mean	3.37	3.302	3.867	3.616	3.533
Sd	0.656	0.786	0.711	0.697	0.683

Note: *** means: $P < 0.001$, ** means: $P < 0.01$, * means: $P < 0.05$ (The same below)

Table 1 Means, Standard Deviations, And Correlations Among Study Variables (Continue)

Variable	6	7	8	9	10
Centricity					
Scale					

Intensity					
Heterogeneity					
Alertness					
Mind Alert	1				
Reaction Alert	.628**	1			
Positive Emotion	.671*	.480**	1		
Negative Emotion	-.394*	-.476**	.491**	1	
Entrepreneurial Behavior	.617**	.508**	.748**	-.509**	1
Mean	3.302	3.867	3.616	3.533	3.302
Sd	0.786	0.711	0.697	0.683	0.786

Table 2 Regression Results

Entrepreneurial behavior			
	Model0	Model 1	Model 2
Centricity	0.217	0.012***	0.026***
Scale	0.155**	0.208***	0.071***
Intensity	0.263***	0.028**	0.027**
heterogeneity	0.056***	0.133*	0.134*
Perceived alertness		0.427***	
Mental alertness			0.468***
Response alertness			
Entrepreneurship			
negative emotions			
Ind1			
Entrepreneurial			
positive emotion			
Ind2			
F	15.301***	27.588***	32.567***
R2	0.320	0.484	0.525

Table 2 Regression Results (Continue)

Entrepreneurial behavior			
	Model4	Model 5	Model 6
Centricity	0.031***	0.217***	0.143***
Scale	0.094**		
Intensity	0.015**		
heterogeneity	0.117*		
Perceived alertness			
Mental alertness			
Response alertness	0.333***		
Entrepreneurship		0.480***	
negative emotions			
Ind1		-0.211***	
Entrepreneurial positive			0.649***
emotion			
Ind2			0.022
F	23.751***	24.077 **	58.830 **
R2	0.446	0.445	0.619

5 RESEARCH CONCLUSIONS AND PROSPECTS

5.1 Research Conclusion

Based on information processing theory and emotion consistency theory, this study reviewed pieces of literature on four variables, namely, social networks, entrepreneurial alertness, entrepreneurial behavior and entrepreneurial emotion, preliminarily determined the relationship among each variable, and proposed relevant hypotheses. Then this study to explore empirically the relationship between the variables, and discuss the empirical study based on the above theory, information processing theory, emotional consistency of social networks, entrepreneurial alertness, entrepreneurial behavior, business sentiment has carried on the literature review four variables, the relationship between the variables were initially determined, put forward relevant assumptions. Subsequently, this study empirically explores the relationship between variables and discusses the empirical analysis results mentioned above. Social networks positively influences entrepreneurial behavior, entrepreneurial alertness mediates the relationship between social networks and entrepreneurial behavior, and negative entrepreneurial emotion negatively moderates the relationship between social networks and entrepreneurial behavior.

5.2 Research recommendations and prospects

(1) Pay attention to the expansion and maintenance of network relations, improve the social networks of college students; (2) Enhance participation in social networks activities and enhance network heterogeneity. Explore entrepreneurial opportunities and improve the level of entrepreneurial alertness. (1) Carry out entrepreneurial learning; (2) Attach importance to entrepreneurial practice; (3) Create a "heterogeneous" entrepreneurial team. (1) Dissolve the negative emotional psychology of college students in entrepreneurship; (2) Change the traditional mode of thinking; (3) Actively cultivate entrepreneurial team consciousness.

First of all, we should continue to enrich the research content of college students' entrepreneurial behavior, and try to explain the process of college students' entrepreneurial behavior with different theories. In addition, we can broaden our thinking and actively explore the mechanism of organizational factors on college students' entrepreneurial behavior. Secondly, the survey object can be expanded to more provinces and the sample size can be expanded to make the statistical data more representative and truly reflect the situation related to college students' entrepreneurial activities. Finally, in future studies, the time for data collection should be extended to collect data at different time points from unified survey objects. In addition, the current situation of college students' entrepreneurial behavior has not been fully investigated. In future research, interviews with experts and scholars can be considered to further explore the generation process of college students' entrepreneurial behavior from different subjects.

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