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# Analysis of Factors Influencing Farmers' Identification of Entrepreneurial Opportunity

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**Abstract** Based on the survey data of entrepreneurship concerning farmers in China, this article uses the multivariate adjustment regression analysis method, to analyze the factors influencing farmers' identification of entrepreneurial opportunity and the mechanism. The results show that demographic characteristics are still an important factor influencing farmers' identification of entrepreneurial opportunity, but the extent of its influence is weaker than entrepreneurs' trait. The new trait theory is verified in farmers' entrepreneurship opportunity behavior; entrepreneurship environment is becoming an important factor influencing entrepreneurial opportunity identification, whose regulation effect on entrepreneurs' social network and previous experience is stronger than the regulation effect on entrepreneurs' psychological trait.

**Key words** Farmers' entrepreneurship, Opportunity behavior, Influencing factors, Empirical research

## 1 Introduction

Entrepreneurship is an important drive to economic development (Yang & Li, 2008). The Employment Promotion Law of People's Republic of China advocates that workers should develop correct concept of employment, and enhance working ability and entrepreneurial ability; the law also encourages workers to set up their own businesses. Farmers are the largest work forces of China, so the entrepreneurial ability and entrepreneurial level are directly related to accomplishment of national employment law, also related tightly to farmers' ability to increase income, the process of urbanization, and the construction of harmonious society. According to the GEM reports, the motivation of entrepreneurs in China has completed the transformation from survival mode to opportunity mode. In 1979, Kirzner pointed out firstly that entrepreneurship was an opportunity-identification activity. Opportunity-identification, as the foundation and kernel of opportunity entrepreneurship, determines the value-creating potential of entrepreneurship. For farmer entrepreneurs, what factor influences the opportunity-identification ability of farmers, and how is the process of opportunity-identification completed? This paper answers the above questions using the data of 518 farmer entrepreneurs collected in typical areas from middle, east and west parts of China by National Social Science Fund Project. And the paper hopes that farmers can improve the quality of entrepreneurial opportunity by cultivating and using social capital, and get more entrepreneurial profits.

## 2 Literature review and theoretical assumptions

**2.1 Literature review** In contrast with survival entrepreneurship, opportunity entrepreneurship refers to value creation that exists in the economic social dimension from recognizing, evaluating and developing entrepreneurial opportunities, and features of the opportunities determine the value creating potential of entrepreneurship (Shane & Venkataraman, 2000)<sup>[1]</sup>. Therefore, opportunity identification has become a core element of entrepreneurship; even Davidsson (2003) argues that research on entrepreneurship should be focused on research on opportunity identification<sup>[2]</sup>.

Around the differences in opportunity recognition, scholars do their theoretical and empirical research from the entrepreneurial opportunity identification and the factors influencing the opportunities. Based on the perspective of integration of learning and experience, Kolb (1984) considered that individuals obtained and converted information in different ways, which led to individual differences in opportunity recognition<sup>[3]</sup>. Shane & Venkataraman pointed out that some people can identify entrepreneurship opportunities, while others cannot. The difference comes mostly from the "differences in information, cognition and behavior"<sup>[4]</sup>. The opportunity identification model built by Kirzner (1979) from entrepreneurial awareness shows that insights help entrepreneurs to break through existing method – purpose, to find out the business value, to break limits of method – purpose from accessing the situation through understanding of certain procedures until the opportunities get recognized, and to highlight the importance of alertness to opportunity recognition in entrepreneurs' personal attributes<sup>[5]</sup>.

Most scholars also consider that the special attributes of entrepreneurs, such as creativity (Singh, R. P.; Hills, G. E.; Lumpkin, G. T.; 1999), imagination (Shackle, 1982), the ability to search information, to process information (Kaish & Gilad, 1987), which lead them to find entrepreneurial opportunities while others cannot. Kirzner (1973) pointed out that opportunities

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will be produced in large number when environment changes, and therefore knowledge and information gap, businesses and markets change create other spaces<sup>[6]</sup>. Bhawe (1994) found out that caring about markets, industries and customers can increase the likelihood to identify opportunities<sup>[7]</sup>. Singh (2000) created an concept model to recognize opportunity:  $O = f(P, I, E)$ , in which  $O$  = entrepreneurial opportunities,  $P$  = personal knowledge, abilities and backgrounds of entrepreneurs,  $I$  = new ideas,  $E$  = Environment. He also pointed out that only when the three types of factors coordinate can one recognize business opportunities successfully<sup>[8]</sup>. Ardichvili (2003) built opportunity recognition model on the basis of process based on Dubin's (1978) theoretical model and empirical research. This model emphasizes the importance of personal traits, entrepreneurial alertness and previous experience, and this model considers opportunity identification as the multi-stage process an entrepreneur actively involved in; it also considers that individual differences (individual traits, previous experience) and the integration of environmental differences lead to the entrepreneurial opportunities recognition<sup>[9]</sup>.

According to the literature, I find that entrepreneurial trait is the main factor of the abilities to identify opportunities; entrepreneurial environment adjusts the individual's ability to identify opportunities. Because opportunity recognition is a behavior with greater subjective color, some stable individual differences in characteristics enable some people, not others, to discover and develop entrepreneurial opportunities<sup>[10]</sup>; changing environment brings both opportunities and threats to today's society, which is the prerequisite and basis for entrepreneurial opportunities. It is generally believed that a relaxed environment can stimulate entrepreneurial orientation through availability and acquisitiveness of resources (Bruno&Tyebjee, 1982)<sup>[11]</sup>, because entrepreneurial opportunity is a possibility to create value through combining resource creativities (Schumpeter, 1934)<sup>[12]</sup>.

## 2.2 Theoretical assumptions

**2.2.1** Entrepreneurs' trait and opportunity identification. The research path of Trait School turns out that the first thing is to focus on demographic traits, to study which kind of people more likely to find entrepreneurial opportunities. However, this cannot explain why people with these traits can become entrepreneurs<sup>[13]</sup>. Trait theory got seriously challenged; then in the 1980s, scholars shifted the focus of study to psychology and cognitive traits of entrepreneurs; and it was generally believed that these traits tend to reflect the essence of entrepreneurship better<sup>[14]</sup>. Besides, other traits related to entrepreneurial opportunity recognition include alertness (Krizner, 1973), risk-awareness (Keh, 2002), existing knowledge or previous experience (Shane, 2000), social networks (Hills, 1997).

For farmers, due to entrepreneurial restrictions, traditional rural culture, gender, age, religion *etc.* are still important factors affecting farmers' identification of entrepreneurial opportunities. Given the relatively balanced market environment in countryside, sense of achievement, risk attitudes, perseverance, innovation

ability will increase individual awareness, and enable farmers to pay attention to entrepreneurial opportunities around. Relative to the invisible psychological traits, farmers' acquired knowledge and accumulated experience can improve the ability to identify opportunities; besides, strong social network can extend the information sources of farmers, increase the breadth of sources of entrepreneurial opportunities.

Based on this, this paper makes the following assumptions:

H1: Traits of entrepreneurs are strongly related to entrepreneurial opportunity recognition.

H1a: Individual traits based on demographic characteristics are important factors affecting entrepreneurial opportunity recognition.

H1b – H1d: Psychological traits, previous knowledge, and social network of entrepreneurs are positively related to entrepreneurial opportunities recognition.

**2.2.2** The regulatory role of the entrepreneurial environment. According to the study framework of GEM economic growth, entrepreneurial environment affects the entrepreneurial opportunities and entrepreneurial abilities, and the frame puts forward nine dimensions measuring entrepreneurial environment. Shane (2000) considered that loose environment can bring entrepreneurs new external information, thus helping them to exploit entrepreneurial opportunities relying on their individual traits<sup>[1]</sup>. Helfat thought that environmental dynamics could improve the sensitivity of entrepreneurs to external reflection, and increase the alertness of entrepreneurs<sup>[15]</sup>.

Helfat even thought that the reason why entrepreneurs could be successful was that they put themselves in the best entrepreneurial environment. If a society is more tolerant to entrepreneurial failures, and the society has strong entrepreneurial atmosphere, perfect financial support and entrepreneurial service system, the society will stimulate individual entrepreneurial motivations and aspirations, and stimulate individuals to seek entrepreneurial opportunities voluntarily. Based on this, this paper proposes four environmental dimensions that regulate farmers' entrepreneurial opportunities recognition: governmental environment, financial environment, infrastructure and entrepreneurial atmosphere.

H2: Entrepreneurial environment regulates the relationship between entrepreneurial traits and entrepreneurial opportunity recognition aspiration and ability. It can be specified as:

H2a – H2c: Entrepreneurial environment adjusts positively the psychological traits, previous experiences, social networks of entrepreneurs, and improves the willingness and ability of entrepreneurs to identify entrepreneurial opportunities.

To sum up, this paper puts forward the research framework shown as Fig. 1:

## 3 Model establishment and data sources

### 3.1 Data sources and statistical description

**3.1.1** Sample selection. The subject studied is farmers' entrepreneurship, and the issues studied are factors affecting farmers' ability to identify entrepreneurial opportunities. Thus the samples

selected should satisfy the following 5 conditions: (1) Entrepreneurs have rural area registered permanent residence; (2) Entrepreneurial locations are in rural areas or township; (3) Entrepreneurial industry is expanded on the basis of traditional agriculture, which is divided specifically into five classes in Table 1; (4) Em-

ployee number is within 10 (entrepreneurs included); (5) Entrepreneurial period is within a year. Because the entrepreneurial opportunities are at the early stage of entrepreneurial activity, if the interval between survey and entrepreneurship is too long, it can easily lead to memory degradation and deviation.

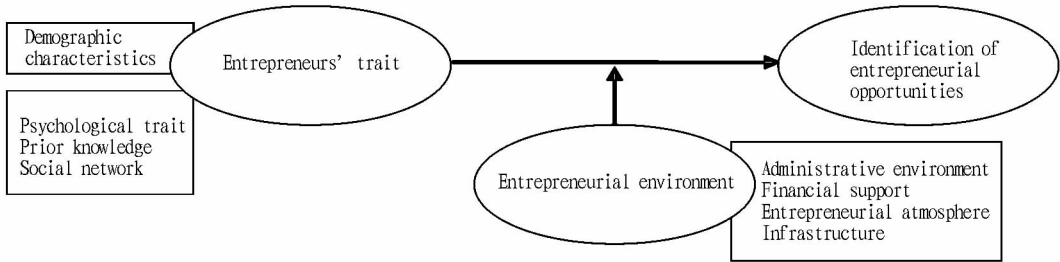


Fig. 1 Research framework of entrepreneurial opportunity identification

**3.1.2 Data collection and characteristics.** This data survey is mainly based on questionnaire and case interview. First of all, we conducted a pilot study to test the questionnaire in Chongqing and then revised the questionnaire. At last we chose to do the questionnaire and do case interview in 9 typical areas, Ye County in Pingdingshan City, Henan province, Jiaxing, Zhejiang Province, Shuangliu County in Chengdu City, Daying County, Leshan County, Sichuan province, as well as Hechuan area, Kai County, Tongliang County, Rongchang County in Chongqing. The survey used stratified random sampling method. The data of the question-

naire and interview are shown in Table 1. The distribution of valid sample is shown in Table 2. The ratio that entrepreneurship concentrates in traditional agriculture is 84.75% ; 91.31% of all the entrepreneurs are male, 62.55% of all the entrepreneurs are above 40; 57.14% of all the entrepreneurs have received junior school or high school education. This indicates that farmers' entrepreneurship concentrate mainly in the traditional agriculture, entrepreneurs are male-dominated and the education level is low on the average.

Table 1 Sample distribution and response

Questionnaires	Questionnaires distributed	Questionnaires called back	Valid questionnaires	Response rate	Validity rate
	800	692	518	86.5%	64.8%
	Scale operation of traditional agriculture: 439; establishment of new industries: 14; specialized production: 20; launching new business: 21; establishment of new organization: 24				
Case	31 interviewees, including 27 entrepreneurs and 4 grassroots cadres				100%

Table 2 Statistical results of respondent farmers' demographic variable

Basic characteristics	Grouping	Number of people	Share in the total sample//%
Gender	Male	473	91.31
	Female	45	8.69
Age	Below 30 years old	86	16.60
	31 to 40 years old	108	20.85
	Above 41 years old	324	62.55
Level of education	Primary school and lower	119	22.97
	Junior high school and senior high school	296	57.14
	Junior college and above	103	19.88
Working outside the home	Yes	297	57.34
	No	221	42.66

3.2 Variable selection and data processing

**3.2.1 Dependent variable.** According to the above analysis, the dependent variable involved in this paper is entrepreneurs' ability to identify opportunities. The business environment is not mature, and farmers' entrepreneurial action is still in the process of re-

search, so it's hard to find the right variables to measure the farmers' opportunity recognition behavior. According to the theory of behavior, the attitude and the ability determine behavior. In addition, the survey shows that the peasant household's entrepreneurial motivation is to pursue wealth. So we set two problems as the dependent variables to measure the peasant household's recognition ability in entrepreneurial opportunities: (1) Do you often want to make money or develop opportunities? (2) What about your ability to make money or develop opportunities?

**3.2.2 Independent variable.** The independent variable involved in this paper is mainly the entrepreneurs' characteristics, which are mainly measured from entrepreneurs' psychological traits, previous experience and social network. According to the literature review and interview case, the psychological traits are described by seven sub-items "innovation ability, the pioneering spirit, personality, communication skills, learning ability, risk propensity, sensitivity". For the previous knowledge, this paper introduces "Are you familiar with the technical support of entrepreneurship?" to measure it. As to social network, in terms of "the strength of

weak ties network" proposed by Granovetter(1973)<sup>[16]</sup> and Huang Jie(2010)<sup>[17]</sup>, this paper introduces the scale of the network to measure "the effect of network in opportunity recognition for returning farmers". According to the number of acquaintances or relatives contacted, value 1–5 is assigned.

**3.2.3 Regulating variable.** According to four types of entrepreneurial environment in Fig. 1, combined with entrepreneurial environments' nine dimensions in the GEM economic growth model<sup>[18]</sup>, this paper puts forward the following questions, represented by E1–E8: (1) What's your evaluation of local government? (2) Do you think local governments support the peasants' entrepreneurship? (3) Do you think farmers can get loans from formal financial institutions easily? (4) Do you think the surrounding farmers own a strong sense of entrepreneurship? (5) What's your evaluation of the rural infrastructure? (6) What's your evaluation of soft supply services in rural areas? (7) Do you think it's easy to enter a new area of production for local farmers? (8) Do you think the local legal system can protect farmers' rights? According to the correlation between question and entrepreneurship opportunity recognition, we adopt the Likert5–point scale scoring.

There may be a high degree of collinearity between the variables. Through the spss17.0 software for processing of the data, principal component analysis is used. Factor rotation uses orthogonal rotation. According to the standard of characteristic roots greater than 1 and factor loading less than 0.5, two common factors are extracted, and the results are shown in Table 3 and Table 4.

$F1 = 0.112E1 + 0.180E2 - 0.106E3 + 0.082E4 + 0.297E5 + 0.328E6 + 0.315E7 - 0.188E8$  (Variance contribution rate is 39.43%);

$F2 = 0.225E1 + 0.107E2 + 0.502E3 + 0.231E4 - 0.137E5 - 0.171E6 - 0.150E7 + 0.622E8$  (Variance contribution rate is 18.78%);

The cumulative variance contribution rate is 58.21%, and the comprehensive principal components are derived using the respective variance contribution rate as weight:

$$F = 39.43F1/58.21 + 18.78F2/58.21 = 0.149E1 + 0.156E2 + 0.090E3 + 0.130E4 + 0.157E5 + 0.167E6 + 0.165E7 + 0.073E8$$

**Table 3 Analysis of entrepreneurial environment – total variance explained**

Component	Initial eigenvalue			Rotation sums of squared loading		
	Total	Variance//%	Cumulative//%	Total	Variance//%	Cumulative//%
1	3.592	44.901	44.901	3.154	39.426	39.426
2	1.065	13.309	58.209	1.503	18.784	58.209
3	0.955	11.939	70.148			
4	0.727	9.085	79.234			
5	0.674	8.430	87.663			
6	0.387	4.833	92.496			
7	0.357	4.468	96.964			
8	0.243	3.036	100.000			

Extraction method: principal component analysis. KMO = 0.814, Bartlett's sphericity test approximate chi-square = 1404.54,  $P < 0.001$ .

To keep the dimensions unified, the coefficients are taken as weights. Through normalized processing, composite indicator of the entrepreneurial environment is obtained:

$$H = F / (0.149 + 0.156 + 0.090 + 0.130 + 0.157 + 0.167 + 0.165 + 0.073) = 0.137E1 + 0.144E2 + 0.083E3 + 0.120E4 + 0.144E5 + 0.154E6 + 0.152E7 + 0.067E8$$

**3.2.4 Control variable.** This study chooses gender, age, education as control variables. The detailed description is seen in Table 5.

**3.3 Econometric model** According to the characteristics of the dependent variable in this article, the ability of farmers to identify entrepreneurial opportunities is the ordinal categorical variable between the two values from 1 to 5, which belongs to multiple fixed variables. If there are more than two categorical variables in the study process, the general choice is the probit multiple fixed variable for the moderated multiple regression (MMR). In the ranking selection, the dependent variables select value 0, 1, 2, 3..., and the independent variables are a variety of factors that may affect the ranking of independent variables, which can be the collection of many independent variables. The general form of the specific probit model is as follows:

$$Y_i = \beta X_i + \varepsilon_i$$

where  $Y_i$  is a certain type of hidden variable or latent variable;  $X_i$  is the set of explanatory variables;  $\beta$  is the parameters to be estimated;  $\beta$  means random disturbance term.

## 4 Econometric analysis of factors influencing farmers' entrepreneurial behavior

**4.1 Econometric results of model** This article adopts Eviews5.0 software to handle the 518 sequential samples with probit model, and gradually add the control variables, the independent variables, the regulating variables, the interaction term of the independent variables and the regulating variables for data analysis. The model fitting results are seen in Table 6.

From the model fitting results in Table 6, the model likelihood ratio function and goodness of fit estimation results show that the overall model fitting result is good. From the changes of  $\Delta R^2$ , it can be seen that the moderating effect of the entrepreneurial environment to the principal factors is significant.

**Table 4 Analysis of entrepreneurship environment – factor loading, component score coefficient matrix**

	Component score coefficient matrix		The rotated component matrix	
	1	2	1	2
E1	0.112	0.225	0.871	0.057
E2	0.180	0.107	0.850	0.076
E3	-0.106	0.502	0.806	0.078
E4	0.082	0.231	0.670	0.334
E5	0.297	-0.137	0.570	0.446
E6	0.328	-0.171	0.479	0.425
E7	0.315	-0.150	0.003	0.755
E8	-0.188	0.622	0.146	0.653

Extraction method: principal component analysis. Rotation method: Kaiser standardized orthogonal rotation method; rotation converges after three iterations.

Table 5 Model variable explanation and statistical description

Variable name	Variable explanation	Mean	Variance
Independent variable			
Opportunity identification attitude( $y_1$ )	Do you often want to make money or have some development opportunities? Want very much =5, want =4, general =3, do not often want =2, do not want =1		3.25 1.86
Opportunity identification ability( $y_2$ )	How do you find the ability to make money or identify development opportunities? Very strong = 5, relatively strong = 4, Average = 3, relatively weak = 2, weak = 1		3.15 2.36
Control variable			
Gender ( $x_1$ )	Male =1, female =0		0.91 0.28
Age( $x_2$ )	Actual age		43.65 12.47
Level of education( $x_3$ )	Primary school and lower =1, Junior high school and senior high school =2, Junior college and above =3		1.97 0.65
Dependent variable			
Farmers' psychological trait ( $x_4$ )	According to Likert5 measure table, assigning value on the above seven items and averaging.		3.24 1.38
Previous experience( $x_5$ )	Yes = 1, No =0		0.62 0.59
Social network( $x_6$ )	Number of people contacted: <3 =1, 3-5 =2, 5-8 =3, 8-10 =4, >10 =5		2.44 0.74
Regulating variable			
Entrepreneurial environment( $x_7$ )	For the eight items, using factor analysis for dimensionality reduction and then integration.		3.97 1.58

Note:  $x_7$  is the above-mentioned variable  $HJ$ .

Table 6 The multivariate probit model estimation results of impact on farmers' entrepreneurial opportunity identification behavior (N =496)

	The dependent variable (First group model)			The dependent variable (Second group model)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
$x_1$	0.013 ***	0.015 ***	0.259 *	0.301 **	0.094 *	0.110 **
$x_2$	0.392 ***	0.299 **	0.013 *	0.003	0.001	0.001
$x_3$	-0.016 *	-0.009	-0.006	0.029 **	0.025 *	0.021 *
$(x_3)^2$	-0.010 *	-0.006 **	-0.003 *	-0.036 **	-0.017 *	-0.007 *
$x_4$		0.592 ***	0.468 ***		1.553 ***	1.602 ***
$x_5$		0.016	0.235 *		0.112 ***	-0.331 **
$x_6$		0.035 **	0.237 **		0.125 *	0.454 ***
$x_7$			0.654 **			0.374 **
$x_7 * x_4$			0.013			0.022
$x_7 * x_5$			0.164 *			0.125 **
$x_7 * x_6$			0.084 ***			0.172 **
Log Likelihood	-418.900	-506.935	-809.45	-426.013	-684.523	-1028.899
Pseudo - R <sup>2</sup>	0.027	0.106	0.218	0.030	0.172	0.322
$\Delta R^2$	-	0.079	0.112	-	0.142	0.150

Note: \*, \*\*, \*\*\* signify 10%, 5% and 1% significance level, respectively.

4.2 Analysis of econometric results

4.2.1 Analysis of the impact of demographic variable on the farmers' entrepreneurial opportunity identification ability. Comparing the two models,  $x_1$  passes the significance test;  $x_2$  is significant in model 1-3, but fails to pass the significance test in the model 4-6;  $x_3$  performs contrarily in the two sets of models, its quadratic form is negative, and entrepreneurial opportunities recognition behaviour shows inverted U-shape and is significant comparatively. These tests results indicate that due to physiological and social attitudes, the male have stronger willingness and ability to identify entrepreneurial opportunities than the female; the older people are more inclined to start an undertaking in rural areas. This accords with the data in Table 2, in which 62.55% of the entrepreneurs are over 40 years old. Because these farmer entrepreneurs are mostly the old generation home-going peasant-workers and their entrepreneurship is mostly concentrated in the agricultural industry (Table 1). Education degree performs contrarily in the two sets of models and there is a significant negative correlation between the quadratic term and the dependent variables. This in-

dicates that the education degree has little effect on entrepreneurial opportunity recognition willingness, but it can significantly improve the ability to identify entrepreneurial opportunities. As for the farmers with high or low educational background, their willingness and ability to identify entrepreneurial opportunities is low, and the possible explanation is that the highly educated have a wide range of employment opportunities, lack farming experience, plus the high entrepreneurial opportunity cost, so they are unwilling to venture. People with low education background do not satisfy the entrepreneurial threshold requirements and can only be engaged in traditional farming, so it is difficult to start an undertaking for them. And these coincide with the data in Table 2, in which 57% of the entrepreneurs have junior and senior secondary education degree. In addition, it is similar to the entrepreneurial characteristics of the home-going peasant-workers in Yongji of Shanxi Province concluded by Chen Wenlong (2010)<sup>[19]</sup>. Generally speaking, the effect of the demographic factors is diverse in farmers' entrepreneurial opportunities recognition, and the hypothesis H1a is partially verified.

**4.2.2** Analysis of the impact of entrepreneurs' trait on the farmers' entrepreneurial opportunity identification ability. In model 2, all variables are positively and significantly affecting the dependent variables except that  $x_5$  fails to pass the significance test, and  $x_4$  has the most significant effect (the coefficient is the maximum one in model 1 to 6). For  $x_5$ , its significance is weaker in the first set of models than in the second set.

Generally, for entrepreneurs, the psychological trait is the core element affecting farmers' willingness and ability to identify entrepreneurial opportunities, and hypotheses H1b is verified. The impact of the size of the entrepreneurs' social networks on the willingness of opportunities is stronger than the recognition ability, while the previous experience is to the contrary. The expansion of social network size can strengthen the entrepreneurship willingness, and improving the opportunity recognition capabilities mainly relies on the previous experience. H1c and H1d get verified.

**4.2.3** Analysis of the regulating effect of the entrepreneurial environment. Regulating terms are added to model 3 and model 6.  $x_7 * x_5$  and  $x_7 * x_6$  pass the significance test, while  $x_7 * x_4$  fails to pass the test and the sign is negative. The regulating effect of  $x_7 * x_6$  is the most significant. H2b and H2c get verified, but H2a fails to pass the test.

The possible explanation is that for a long time, the rural closed environment, farmers' satisfaction with small wealth, and risk-averse mentality restrict the farmers' entrepreneurial passion, thus reducing the ability of people to identify entrepreneurial opportunities. In the short term, the external entrepreneurial environment is difficult to change the farmers' entrepreneurial attitude. Positive entrepreneurial environment can expand the social networks of farmers. Through mutual learning among members of the network, the unique knowledge corridor is formed, and the entrepreneurial experience is formed, thereby increasing the willingness and ability to identify entrepreneurial opportunities. And this coincides with the conclusion of Singh (2000) who stressed that the individuals with rich social resources have more valuable information than others, so they can identify opportunities effectively.

## 5 Conclusions and implications

Based on actual survey data and using multiple probit moderated regression analysis, we conduct an empirical study on factors affecting the farmers to identify entrepreneurial opportunity and draw the following conclusions:

(1) Demographic characteristics are still an important factor influencing farmers' identification of entrepreneurial opportunity. But gender and age also restrict the farmers' entrepreneurial participation behavior, and this shows that traditional farming customs and social attitudes are still conservative. Women and young people should be encouraged to participate in rural entrepreneurship, which is an effective way of promoting the transfer of surplus rural labor. And in order to improve the rural industrial structure and promote the upgrading of agricultural industry, highly educated people should be encouraged to participate in the rural entrepreneurship.

neurship.

(2) Entrepreneurs' psychological trait has become the core factor affecting farmers' willingness and ability to identify opportunities, and the new trait theory is verified in farmers' entrepreneurship opportunity behavior. By expanding the sources surface of heterogeneous information, social networks can spark individual entrepreneurs' willingness to identify the opportunity, but the opportunity recognition capabilities still benefit from the accumulation of previous experience. This shows that the entrepreneur characteristics are composed of the inherent entrepreneurs' psychological traits, external network and experience, which exert synergistic effect on entrepreneurs' opportunity recognition behavior. Farmers should actively improve the inherent quality, expand their social network, and accumulate experience consciously, in order to improve the ability to identify entrepreneurial opportunities.

(3) Entrepreneurship environment is becoming an important factor influencing entrepreneurial opportunity identification. Its role in regulating the intrinsic quality of entrepreneurs is yet to be felt, but its role in improving entrepreneurs' social network and work experience is obvious. This shows that the entrepreneurial environment's moderating effects on entrepreneurial opportunity identification are exerted through the external dimension factors. The intrinsic quality of the entrepreneur is the main cause of the opportunity recognition behavior. Therefore, the improvement of the entrepreneurial environment should be based on the improvement of the intrinsic quality of the entrepreneurs, such as improving the farmers' innovative capacity from the perspective of educational innovation, establishing farmers' venture insurance to reduce the farmers' costs of business failure and improve their entrepreneurial risk affordability.

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to maintain the interests of grain growers; strengthen efforts to provide credit preference for major grain growers<sup>[2]</sup>.

**3.2 Continuing to increase government investment is an important means to improve the production capacity of major grain growers** From the macro level, government's input to agriculture has an important role in increasing food production for major grain growers. Research has shown that government expenditure on agriculture, basic agricultural building spending, and science and technology funds, play a significant role in boosting food production. The research data show that for each additional 1% of government expenditure on agriculture, the grain yield will increase by 0.405 2% ; for each additional 1% of science and technology expenditure, the grain yield will increase by 4%<sup>[3]</sup>. Therefore, the government should continue to increase investment, and pay more attention to optimizing the internal structure of financial support for agriculture.

**3.3 Setting up special support funds is the major way to protect major grain growers' enthusiasm for production**

Some places issue a series of incentive and subsidy policies to encourage the development of major grain growers, and the effect is very obvious. The experience is worth thinking and learning. But since food production is a welfare problem in a large measure, the government should play a major role in this problem. When faced with financial difficulties, the financial department should set up special projects to solve the source of funds. In addition, we can integrate funds from the comprehensive development of agriculture and water conservancy construction.

**3.4 Improving management system is a necessary prerequisite for eliminating the obstacles to major grain growers**

There is a large number of major grain growers in the region, and a sound management system plays a very important role in improving the application effect of funds for supporting agriculture. So the responsible departments must meet the two requirements: one is to have sound organizational system, able to extend the feelers to each major grain grower in the region; the other is to have the ability to provide technical support to major grain growers, and guide major grain growers to rationally use subsidy funds. From

the current situation, the agricultural department of the district is an ideal choice. The difficulties facing the development of major grain growers are multifaceted, so one department alone is difficult to address the situation. For example, the production technical services, dry field and warehouse construction, water conservancy infrastructure, field roads, food production and food processing, need many departments to solve<sup>[4]</sup>, so in the long run it is necessary to establish collaborative mechanisms and institutions, to support the development of major grain growers.

**3.5 Increasing the input of science and technology is an effective way to alleviate the too high costs for major grain growers** Technological factor scarcity is the main reason for the high cost of food production, and the lack of high-tech agricultural personnel causes high labor costs. If the major grain growers in Jiaojiang District want to free themselves from the costs distress, they must take the road of labor-intensive cultivation and rational fertilization. To do this it is necessary to inject technological factors. The technological factors mainly include two aspects: one is science and technology talents and the other is science and technology. It is necessary to vigorously introduce agricultural science and technology extension talent, rely on science and technology to improve and enhance agricultural production technology, and rely on scientific management to improve and enhance the agricultural management.

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