Research on Farmers' Entrepreneurship: Willingness, Behavior and Performance of Hunan Province Central China

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Abstract

In the new era, the principal contradiction facing Chinese society has undergone a major transformation. China has used Rural revitalization strategy, which is considered an important strategic change in China's urban and rural development. It is in line with the new trend of the two-way flow of resources and factors in urban and rural areas in the new era. and is an important means of resolving important conflicts in Chinese society.

This article aimed 1) to study the influencing factors of farmers' entrepreneurial performance in Hunan Province, 2) to analyse the impact of entrepreneurial willingness on entrepreneurial behaviour and entrepreneurial performance of farmers in Hunan Province and 3) to propose policy recommendations to promote farmers' entrepreneurial performance in Hunan Province. This study was conducted through a combination of qualitative and quantitative research. In the quantitative part, the sample was 400 peasant entrepreneurs in Hunan Province. They were selected by simple method, sent questionnaires to the farmer entrepreneurs in Hunan Province through questionnaire star, WeChat, QQ and email. Regarding the qualitative analysis, the sample consisted of 10 people, including 5 farmer entrepreneurs and 5 Ph.D.s in management who have been working in farmer entrepreneurship for many years. The instrument for collecting data has 2 types: questionnaires and in-depth interviews. Analysis data by percentage, mean, and standard deviation. And content analysis. The research results were found as follows;

1. The influencing factors of farmers' entrepreneurial performance in Hunan Province is Entrepreneurial behavior includes entrepreneurial team, entrepreneurial resources and entrepreneurial opportunities.

2. Entrepreneurial willingness has a direct positive effect on farmers' entrepreneurial behavior in terms of entrepreneurial opportunities, entrepreneurial resources and entrepreneurial teams. But entrepreneurial willingness will have an indirect positive effect on farmers' entrepreneurial performance through entrepreneurial behavior.

3. Based on the findings of the study, countermeasures to promote farmers' entrepreneurship in their hometowns are proposed: 1) Guide and support female entrepreneurship. 2) Emphasize entrepreneurship training and education. 3) Improve farmers' entrepreneurial willingness. 4) Enhance farmers' entrepreneurial behavior. And 5) Encourage multiple forms of entrepreneurship.

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Keywords: Entrepreneurial Willingness; Entrepreneurial Behavior; Entrepreneurial Performance; Farmers' Entrepreneurship; Returned Entrepreneurship

Introduction

In the new era, the principal contradiction facing Chinese society has undergone a major transformation. The contradiction between the people's ever-growing needs for a better life and unbalanced and inadequate development has become the principal contradiction, especially the inadequate and unbalanced development of agriculture and rural areas. To this end, at the 19th National Congress of the Communist Party of China, China proposed to fully implement the rural revitalization strategy, and make a comprehensive plan for China's rural construction from the height of national strategy. The rural revitalization strategy is a major strategic shift in China's urban and rural development. It conforms to the new trend of the two-way flow of resources and factors in urban and rural areas in the new era, and is an important way to solve the principal contradiction in China's society. Rural revitalization strategy is the main body of farmers. The rural revitalization strategy insists that China's agricultural development should shift from resource-consuming mode of production to sustainable and green mode of production, and shift from simply pursuing quantity to pursuing high-quality development. The implementation of the Rural revitalization strategy will help resolve the principal contradiction facing Chinese society in the new era and is a necessary requirement for realizing the dream of great national rejuvenation (China's Strategic Plan for Rural Revitalization 2018-2022). The overall requirements of rural revitalization are "thriving industries, livable ecology, civilized rural customs, effective governance and rich life". Industrial prosperity is the basis of rural revitalization and the premise of solving the problems of "agriculture, rural areas and farmers". The concept of "rural industry" was clearly defined in the Guiding Opinions of The State Council on Promoting the Revitalization of Rural Industries issued on June 17, 2019, pointing out the shortcomings of the rural industry and making scientific plans on how to revitalize it (the Guiding Opinions of The State Council on Promoting the Revitalization of Rural Industries, 2019). Ajzen's (1991) Theory of Planned Behavior emphasizes that entrepreneurial attitude, perceived normative pressure and perceived behavioral control determine individual entrepreneurial willingness. At present, it is generally believed that individual characteristics such as age, gender, education level, entrepreneurial role models, previous experience and other factors will affect the willingness to start a business (Blanchflower & Meyer, 1994; Barbosa et al., 2007). And Chinese peasants Entrepreneurial Willingness can be affected by the more level, such as Hong-gen Zhu (2013) points out that the rural financial environment affects farmers' willingness to entrepreneurship. The measurement of Entrepreneurial Willingness in this study is based on the theoretical basis of entrepreneurial event model, and the existing relatively mature scale is adopted to measure.

Highlights the dominant position of peasants in rural industries, is an excellent representative of farmers and migrant workers return home entrepreneurship group, they have mastered a certain amount of money, technology and management ability, high sensitivity to the market and policy, how to give full play to the positive role of the group in the country industry to revitalize the is one of current hot problems worthy of studying.

It can be seen that in China, which has entered a new stage of development, farmers' entrepreneurship is of great historical significance. What are the factors that influence the willingness and behavior of farmers to start a business? How to promote the willingness of farmers to start businesses to carry out entrepreneurial actions? What is the measure standard of farmers' entrepreneurial performance? How to improve the performance of farmers' entrepreneurship?

This research paper presents how developing countries give play to the enthusiasm of farmers to start businesses and promote the development of agriculture and rural areas.

Research Objectives

1. To study the influencing factors of farmers' entrepreneurial performance in Hunan Province.

2. To analyse the impact of entrepreneurial willingness on entrepreneurial behaviour and entrepreneurial performance of farmers in Hunan Province.

3. To propose policy recommendations to promote farmers' entrepreneurial performance in Hunan Province.

Literature Review

Literature Review of Farmers' Entrepreneurial Willingness

The entrepreneurial willingness of farmers referred to in this study refers to the attitude and motivation of farmers to carry out entrepreneurial activities. Theory of Planned Behavior emphasizes that entrepreneurial attitude, perceived normative pressure and perceived behavioral control determine individual entrepreneurial willingness. At present, it is generally believed that individual characteristics such as age, gender, education level, entrepreneurial role models, previous experience and other factors will affect the willingness to start a business (Lafuente, 2007). And Chinese peasants Entrepreneurial Willingness can be affected by the more level, such as Hong-gen Zhu (2013) points out that the rural financial environment affects farmers' willingness to entrepreneurship, Yu-fei Zhou (2017) put forward rural cultural environment and policy environment will affect the farmers' willingness to entrepreneurship, Qing-jun Zhao (2018) thinks that good social network resources will enhance farmers' Entrepreneurial Willingness. The measurement of Entrepreneurial Willingness in this study is based on the theoretical basis of entrepreneurial event model, and the existing relatively mature scale is adopted to measure.

Measures of entrepreneurial willingness are derived from the Theory of Planned Behaviour's theory of perceived behavioural control, which refers to an individual's perception of his or her ability to perform a particular behaviour. Linan and Chen's study applied this theory to the measurement of entrepreneurial willingness, which included: entrepreneurial need, readiness need, career need, entrepreneurial feasibility, readiness feasibility and career feasibility to measure the individual's perceptions of entrepreneurship.

Literature Review of Farmers' Entrepreneurial Behaviour

Research on farmers' Entrepreneurial Teams

The entrepreneurial team (or entrepreneurs) plays a key role in entrepreneurial practice, is the controller of entrepreneurial activities, and determines the direction of entrepreneurship. Due to the influence of small-scale peasant economy for thousands of years, China's peasant entrepreneurs are often individuals (or families). Therefore, the personal characteristics, background experience and social resources of peasant entrepreneurs play a decisive role in entrepreneurial activities.

Scholars generally agree that farmers' families are more appropriate entrepreneurial subjects or teams in the Chinese context (Su Lanlan and Kong Rong, 2016), followed by the main body of farmers' entrepreneurship at the initial stage of Chinese farmers' entrepreneurship tends to be dominated by individual farmers' entrepreneurship (Zhu Honggen and Kang Lanyuan, 2013).

Research on farmers' entrepreneurial resources

Liu Zhaomin and Gao Shijie (2020) divided entrepreneurial resources into three dimensions, namely, operational resources, human and technological resources, and financial resources, and found that all three dimensions of entrepreneurial resources significantly affect entrepreneurial performance through the study of 285 questionnaires of entrepreneurs. Zhao, Liang, et al. (2020) used both structural equation modelling and fuzzy set qualitative comparative analysis (fsQCA) to analyse 256 entrepreneurial firms in the field of high technology, and pointed out that entrepreneurial resource integration promotes entrepreneurial behaviour by improving the firm's innovation ability, and that entrepreneurial learning plays an important intermediary effect in it. It is argued that entrepreneurs should pay attention to entrepreneurial learning, cultivate an internal entrepreneurial culture, strengthen the cultivation of innovation ability, and endeavour to improve the resource integration ability of entrepreneurial teams.

Influence of entrepreneurial team on farmers' entrepreneurial performance

Zheng Xiuzhi, Qiu Lezhi et al. (2019) further conducted a follow-up study of farmer entrepreneurs in Shandong Province and Jiangsu Province, and concluded that entrepreneurial talent plays a very important role in enhancing the entrepreneurial performance of farmer entrepreneurs, and that farmer entrepreneurs who start their businesses when they are at their prime entrepreneurial age are able to achieve better entrepreneurial performance. Zhao Jiajia and Wei Juan et al. (2020) further verified the effect of trust on farmers' entrepreneurial performance through heterogeneity analysis, and found that: compared to the non-farm entrepreneurial group, trust promotes farmers' entrepreneurial performance more in the farmer-related entrepreneurial group; compared to survival entrepreneurs, trust promotes the entrepreneurial performance of opportunity entrepreneurs more; and compared to female entrepreneurs, trust better promotes male entrepreneurs' entrepreneurial performance.

Impact of entrepreneurial resources on farmers' entrepreneurial performance

Zhang Qiangqiang and Ma Hongyu et al. (2022) divided entrepreneurial resources into economic, social and psychological dimensions, and through research and analysis of 696 farmer entrepreneurs in Shaanxi Province, the study found that social capital, economic capital and psychological capital all have a significant positive impact on entrepreneurial performance, and entrepreneurial learning plays an important role in entrepreneurs' resource integration and opportunity identification. Duan Haixia and Yi Zhaohui et al. (2021) used a case study method based on rootedness theory to analyse three family farms that had been established for more than three years, and found that farmer entrepreneurs can carry out value proposition innovation in business models through both network patchwork and skill patchwork, which in turn improves entrepreneurial performance, and that farmer entrepreneurs can also realise value co-creativity through manpower patchwork and customer patchwork. Wang Yumeng and Kong Xiangzhi et al. (2022) used a multi-case study method to study three farmer entrepreneurs, and the results show that resource patchwork can help entrepreneurs better adapt to market competition, and it is an important way for farmer entrepreneurs to improve their entrepreneurial performance, and the strength of the entrepreneurial resource patchwork ability directly affects the entrepreneurial performance of farmers.

The effect of entrepreneurial opportunities on farmers' entrepreneurial performance

Liu Ying and Wei Feng (2014) divided the entrepreneurial environment into two dimensions: environmental dynamics and environmental complexity, and through a questionnaire survey of 223 entrepreneurial farmers in Shaanxi Province, they separately examined the influence mechanism of the 2 dimensions of the entrepreneurial environment on entrepreneurial performance. It was found that environmental complexity significantly and positively affects survival performance and growth performance, and environmental dynamics significantly and positively affects only survival performance. Zhu Honggen, Kang Lanyuan et al. (2015) divided the entrepreneurial environment into seven dimensions: policy support environment, economic development environment, entrepreneurial atmosphere environment, scientific and technological culture environment, financial service environment, infrastructure environment, and resource endowment environment, and assessed the impact of each dimension of the entrepreneurial environment on the entrepreneurial performance of farmers respectively.

Theory of Entrepreneurial Willingness

Entrepreneurial event theory

Based on the entrepreneurial event model, Li Dandan and Li Jianfu (2017) found empirically that while entrepreneurial environment with entrepreneurial motivation and self-efficacy affects entrepreneurial heathiness and entrepreneurial feasibility respectively, which ultimately affects entrepreneurial willingness. Based on the entrepreneurial event model, Duan Jinyun (2012) adopted a Likert scale to study the influence mechanism of entrepreneurial willingness of rural migrant workers, and found that individual characteristics affect the entrepreneurial willingness of rural migrant workers, the external environment, social role models, and intrinsic motivation to achieve jointly affect the individual's perceived desirability, and the factors that affect the individual's perceived feasibility of entrepreneurship are only the external environment and social role models.

In addition, other scholars have divided entrepreneurial opportunity identification into quantity dimension and success rate dimension (Corbett, 2007)

Theory of Entrepreneurial Performance

After entering the Internet era, entrepreneurial network and learning ability have become the most critical factors to enhance farmers' entrepreneurial performance (Rui Zhengyun & Shi Qinghua, 2018), and network collocation and skill collocation can significantly enhance farmers' entrepreneurial performance (Duan Haixia et al., 2021).

Conceptual Framework

This research is a research study focuses on how developing countries give play to the enthusiasm of farmers to start businesses and promote the development of agriculture and rural areas. This study consists of 4 variables. The details are as follows.

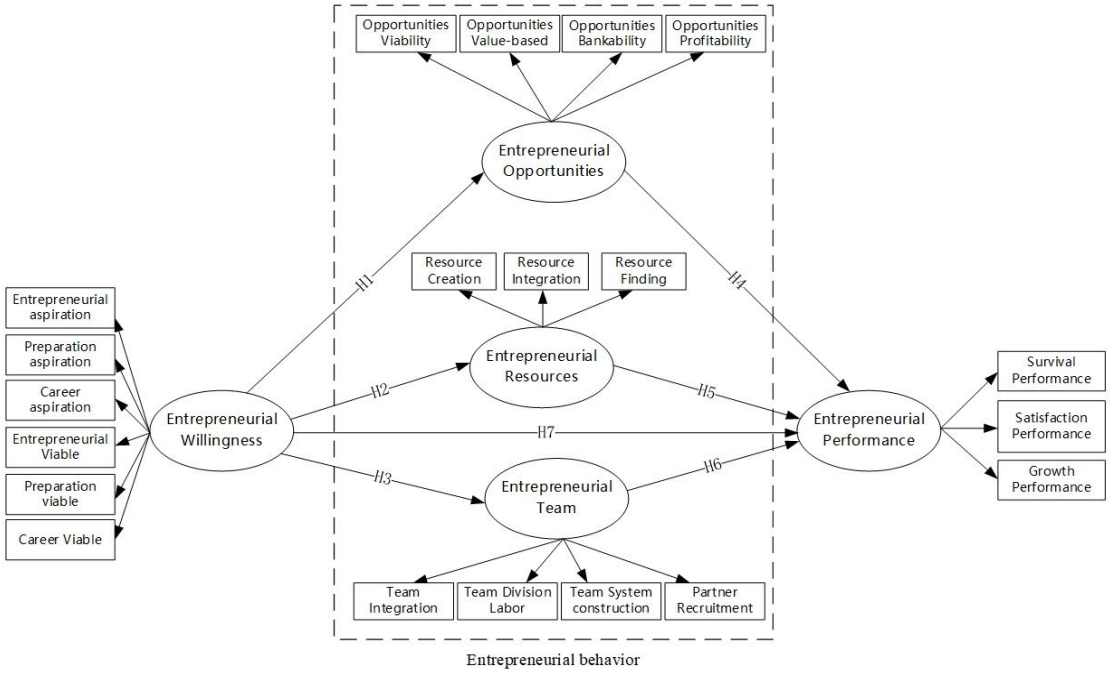

Fig. 1 Theoretical Framework of Farmers' Entrepreneurial Willingness, Behavior and Performance

Research Methodology

This research is combined methods research. The research area is Hunan Province in the central region. In the quantitative research, the total number of research subjects is about 279,200 (Source: Hunan Province 7th Census Statistics, 2021). In order to use Structural Equation Modelling (SEM) for interpretation estimation, according to Hair's formula (Hair, 2010), through the sample size calculation formula that P=0.5, the total effective sample size collected in this study is 400. Regarding the qualitative analysis, the sample consisted of 10 people, including 5 farmer entrepreneurs and 5 Ph.D.s in management who have been working in farmer entrepreneurship for many years. The instrument for collecting data has 2 types: questionnaires that chooses the method of empirical analysis to verify the relationship between the variables, and uses the tool of questionnaire to collect the basic information and empirical research data of farmer entrepreneurs in Hunan Province. and in-depth interviews that are unstructured, direct personal interviews designed to reveal the motivation of farmer entrepreneurs' behavior on an issue. Data were collected by the researcher from August 20, 2022 to December 31, 2022. Quantitative data was analyzed using percentage, mean, and standard deviation statistics. As for qualitative data, use document research, analysis, synthesis The data is then used to write a descriptive narrative.

Research Results

Objective 1. The results showed that the influencing factors of farmers' entrepreneurial performance in Hunan Province is Entrepreneurial behavior includes entrepreneurial team, entrepreneurial resources and entrepreneurial opportunities.

Table 1 Descriptive Statistics for Each Variable

Variables	Items	Means	Standard deviations	Variances	Skewness	Kurtosis
Entrepreneurial Willingness	EW1	3.85	0.968	0.936	-0.552	-0.154
	EW2	3.87	0.916	0.84	-0.655	0.345
	EW3	3.81	0.952	0.906	-0.648	0.208
	EW4	3.7	0.979	0.959	-0.549	0.007
	EW5	3.59	0.972	0.944	-0.457	-0.152
	EW6	3.54	1.026	1.052	-0.41	-0.148
Entrepreneurial Opportunities	EO1	3.74	0.875	0.765	-0.626	0.44
	EO2	3.74	0.917	0.842	-0.582	0.281
	EO3	3.35	0.954	0.91	-0.159	-0.339
	EO4	3.65	0.875	0.766	-0.428	0.271
Entrepreneurial Team	ET1	3.72	0.856	0.733	-0.549	0.41
	ET2	3.68	0.905	0.82	-0.531	0.301
	ET3	3.63	0.928	0.862	-0.469	-0.027
	ET4	3.85	0.966	0.934	-0.78	0.352
Entrepreneurial Resources	RC	3.62	0.848	0.719	-0.286	0.124
	RI	3.63	0.86	0.739	-0.381	0.223
	RF	3.68	0.915	0.837	-0.427	-0.01
Survival Performance	SuP1	3.5	0.83	0.689	-0.245	0.37
	SuP2	3.47	0.841	0.708	-0.319	0.413
	SuP3	3.37	0.885	0.783	-0.247	0.116
Satisfaction Performance	SaP1	3.28	0.994	0.988	-0.091	-0.601
	SaP2	3.19	0.975	0.95	0.042	-0.545

Variables	Items	Means	Standard deviations	Variances	Skewness	Kurtosis
	SaP3	3.32	1.03	1.062	-0.043	-0.667
Growth Performance	GP1	3.09	0.973	0.947	0.076	-0.573
	GP2	3.09	1	0.999	0.099	-0.618
	GP3	3.07	1.008	1.017	0.081	-0.614

In this study, the descriptive statistical analysis of the three dimensions of entrepreneurial willingness, entrepreneurial opportunity identification, entrepreneurial resource acquisition, entrepreneurial team formation and entrepreneurial performance was carried out, and the distribution of each item in terms of mean, standard deviation, skewness and kurtosis was examined, and the descriptive statistical analysis results of each variable were shown in Table 1, from which it can be seen that the deviation of the data characteristics of each variable involved in this study is within a controllable range, and the data can be analyzed in depth.

Table 2 Pearson Correlation and AVE Square Root Values

	Entrepreneurial Willingness	Entrepreneurial Opportunity	Entrepreneurial Resources	Entrepreneurial Team	Entrepreneurial Performance
Entrepreneurial Willingness	**0.846**				
Entrepreneurial Opportunity	0.664	**0.806**			
Entrepreneurial Resources	0.633	0.724	**0.846**		
Entrepreneurial Team	0.678	0.769	0.735	**0.804**	
Entrepreneurial Performance	0.603	0.684	0.67	0.661	**0.882**

The correlation coefficients between the variables were compared with the AVE square root, and if the AVE square root was always larger than the correlation coefficient between the variables, the scale was shown to have good discriminant validity. Table 2 shows the comparison between the correlation coefficients between variables and the square root of AVE, and the data on the diagonal line are the square root of AVE for that variable. From Table2, it can be seen that the square root of AVE is always larger than the correlation coefficient between variables, which indicates that the scale has good discriminant validity.

Objective 2. The results showed that entrepreneurial willingness has a direct positive effect on farmers' entrepreneurial behavior in terms of entrepreneurial opportunities, entrepreneurial resources and entrepreneurial teams. But it will indirectly have a positive effect on farmers' entrepreneurial performance through entrepreneurial behavior.

Table 3 Standardized Direct Effects

	EW	ET	ER	EO	EP
EO	**.863**	.000	.000	.000	.000
ET	**.849**	.000	.000	.000	.000
ER	**.757**	.000	.000	.000	.000
EP	**.047**	.335	.360	.134	.000

In the process of direct effect of entrepreneurial willingness on entrepreneurial behaviour, entrepreneurial willingness has the greatest effect on entrepreneurial opportunities, with a direct effect value of 0.863, entrepreneurial willingness has a direct effect on entrepreneurial resources of 0.849, and entrepreneurial willingness has a direct effect on entrepreneurial team of 0.757; the direct effect of entrepreneurial willingness on entrepreneurial performance is very small, with a direct effect value of only 0.047, as seen in Table 3.

Objective 3. The results showed that based on the findings of the study, countermeasures to promote farmers' entrepreneurship in their hometowns are proposed: 1) Guide and support female entrepreneurship. 2) Emphasize entrepreneurship training and education. 3) Improve farmers' entrepreneurial willingness. 4) Enhance farmers' entrepreneurial behavior. And 5) Encourage multiple forms of entrepreneurship.

Synthesizing the findings of the study and the actual situation found in the research, this paper puts forward the following countermeasures and recommendations:

1. Guiding and supporting female entrepreneurship. The entrepreneurial performance of female farmer entrepreneurs is not lower than that of male farmer entrepreneurs, however, due to the traditional gender division of labor, there are significant differences between women's entrepreneurial willingness and entrepreneurial behavior performance and that of men. Guiding and supporting female entrepreneurship can expand the entrepreneurial group of farmers, improve the status of women and change the current entrepreneurial structure. On the one hand, we should promote the concept of gender-neutral entrepreneurship in the whole society, encourage female farmers to get rid of the traditional concept and increase female entrepreneurial willingness; on the other hand, we should introduce policies to protect female entrepreneurial process for the difficulties they may face in the process of entrepreneurship, such as difficulties in financing, exclusion and discrimination, so that they can adopt entrepreneurial behavior smoothly.

2. Pay attention to entrepreneurial training and education. Entrepreneurship training and education experience plays a key role in farmers' entrepreneurship, and farmers with a high level of education also have an advantage in entrepreneurship. On the one hand, a complete entrepreneurship curriculum is set up to help potential entrepreneurs who are still on campus understand entrepreneurship-related concepts and knowledge, form Entrepreneurial willingness and learn relevant entrepreneurial skills to lay a good foundation for future entrepreneurial behavior; on the other hand, the government allocates funds to support the development of local entrepreneurship-related training, provides venues and experienced

talents to help potential entrepreneurs who are not on campus better understand industry dynamics On the other hand, the government allocates funds to support the development of local entrepreneurship-related training, providing venues and experienced personnel to help potential entrepreneurs who are not on campus to better understand industry dynamics and further enhance their entrepreneurial capabilities.

3. Improve farmers' willingness to start a business. Entrepreneurial willingness is a predictor of entrepreneurial behavior and an important prerequisite for carrying out the entrepreneurial process. Therefore, in order to improve farmers' entrepreneurial performance and promote their entrepreneurial activities, it is important to focus on measures to improve farmers' entrepreneurial willingness. In addition to providing entrepreneurship training and education, attention to the support of the external environment is essential to increase farmers' Entrepreneurial willingness. A fair and orderly market environment and a governmental environment with convenient services are considered favorable for entrepreneurship. The government should actively create an external favorable environment for entrepreneurship and resolutely eliminate undesirable competition and redundancy regulations that jeopardize market fairness and governmental convenience to improve farmers' Entrepreneurial willingness.

4. Enhancing the entrepreneurial capacity of farmers. From the perspective of entrepreneurial process, farmers' entrepreneurial behavior includes opportunity identification, resource acquisition, and team integration behaviors. The three complement each other and are jointly influenced by Entrepreneurial willingness and act on entrepreneurial performance. In practice, it is often difficult for farmers to adopt entrepreneurial behavior spontaneously due to the limitation of resource endowment, so they need to rely on the government to break the limitation of information and resources to help enhance farmers' entrepreneurial behavior. The government can mobilize social forces to create associations to facilitate the flow of information and resources, increase publicity for supportive policies that are conducive to entrepreneurship, and provide tax breaks for enterprises with insufficient resources in the early stages of entrepreneurship to ease the pressure.

5. Encourage multiple forms of entrepreneurship. Entrepreneurial willingness indirectly acts on farmers' entrepreneurial performance by influencing entrepreneurial behavior, and different dimensions of entrepreneurial performance require different Entrepreneurial willingness and behaviors. Enterprises generate relatively high entrepreneurial performance through multiple differentiated paths to achieve the development and improvement of survival or personal or growth performance. It can be seen that entrepreneurship is a free thing and should not be bound to a single path of entrepreneurial success. Farmer entrepreneurs or potential farmer entrepreneurs from the whole society can be encouraged to try more, and lack of unique entrepreneurial opportunities can seek scarce entrepreneurial resources or united entrepreneurial teams to promote entrepreneurship and improve entrepreneurial performance by multiple paths and forms.

Discussions

1. Through the descriptive statistical analysis of the 400 samples, the distribution characteristics of the farmer entrepreneur group can be derived. Combined with the ANOVA test, the distribution characteristics do not directly prove whether there is significance between different characteristics, but to a certain extent, they can reflect the current distribution of farmer entrepreneurs in China. First, the current farmer entrepreneurship is dominated by male, young adults, married, and low-education groups; second, the distribution of farmer entrepreneurs is balanced in terms of family members' entrepreneurial experience and entrepreneurial training and education experience. This conclusion has been validated by many

research results on farmer entrepreneurship in China (Hou, J., 2012; Zhu, H., 2013; Zhou, B., 2015; Guo, Y & He, A., 2017; Zhao, Q., et al, 2018).

2. From the results of the difference test, it can be seen that differences in family members' entrepreneurial experience, entrepreneurial training and education lead to differences in farmers' entrepreneurial willingness, entrepreneurial behaviors and entrepreneurial performance; while differences in gender, marital status and age only lead to differences in farmers' entrepreneurial willingness and entrepreneurial behaviors, and do not lead to significant differences in farmers' entrepreneurial performance.

(1) It was found that men's entrepreneurial willingness and entrepreneurial behaviors, such as opportunity identification, resource acquisition, and team formation, were significantly higher than women's, while there was no significant difference in entrepreneurial performance with gender. The main reason for this may be that traditional Chinese culture has higher expectations for male entrepreneurship and that men are more likely to have good social network relationships in rural China, which helps male entrepreneurs to obtain better support in terms of opportunity identification, entrepreneurial resources and entrepreneurial teams (Dong Jing & Zhao Ce, 2019).

(2) It was found that married farmers' entrepreneurial willingness and entrepreneurial behaviors such as opportunity identification, resource acquisition, and team formation were significantly higher than those of unmarried farmers, but there was no significant difference in their entrepreneurial performance. This finding is also supported by some researchers, such as Cheng Wei & Chen Youchun (2011), who argued that many farmer entrepreneurs started their business based on the purpose of providing a better living environment for their families, and Liu Xinzhi et al. (2015), whose findings showed that married entrepreneurs are more likely to obtain financial support. The research results of Wang Jie & Cai Zhijian (2022) showed that married entrepreneurs have a stronger risk aversion ability, which can significantly contribute to family entrepreneurial behavior.

(3) It was found that entrepreneurial behaviors and entrepreneurial performance such as entrepreneurial willingness, opportunity identification, resource acquisition, team formation, etc. of farmers whose family members have entrepreneurial experience are higher than those of farmer entrepreneurs whose family members do not have entrepreneurial experience. Yuli Zhang et al. (2008) showed that entrepreneurial experience helps entrepreneurs to identify more innovative entrepreneurial opportunities from high-density social networks. This is also evidenced by the research of Guo Hongdong & Zhou Huijun (2013), who concluded that entrepreneurial experience not only has a direct effect on farmers' entrepreneurial opportunity identification, but also indirectly through entrepreneurial alertness. Yang Xuelu & Zou Baoling (2018) argued that the entrepreneurial behavior of farmer entrepreneurs is more of an imitative entrepreneurship, and therefore is significantly influenced by the entrepreneurial role models around them. Zhang Yu & Mao Tingxin's study further showed that paternal entrepreneurship has a significant positive influence on offspring's entrepreneurial behavior.

(4) The study found that farmer entrepreneurs with entrepreneurship training and education experience have higher entrepreneurial behaviour in terms of entrepreneurial willingness, opportunity recognition, resource acquisition, and team formation than farmer entrepreneurs without entrepreneurship training and education experience. According to Solesvik (2013), individuals with entrepreneurship education have higher entrepreneurial willingness and Ali (2013) entrepreneurship education improves an individual's entrepreneurial opportunity perception and enhance individuals' access to entrepreneurial resources, thus promoting entrepreneurial behaviour. Zhou Yufei's (2017) study shows that entrepreneurship

education can help farmers better identify entrepreneurial opportunities, easier access to entrepreneurial resources, and also help improve the quality of entrepreneurial teams.

(5) The study found that compared to other age groups, farmer entrepreneurs under 25 years of age have the lowest entrepreneurial willingness and less entrepreneurial behaviours such as opportunity identification, resource acquisition and team formation. There is no significant difference in entrepreneurial performance among other entrepreneurs of different age groups. The possible reason for this is that the new generation of farmer entrepreneurs under the age of 25, although they have higher individual entrepreneurial qualities, are more constrained by resource endowment, which reduces their individual entrepreneurial willingness (Luo Jun et al., 2014), and the study by Liu Zhaomin & Gao Shijie (2020) also showed that college student entrepreneurs lack the necessary financial resources, which affects their entrepreneurial performance.

(6) It was found that entrepreneurial willingness and entrepreneurial behaviours such as opportunity identification, resource acquisition, and team formation were significantly higher among farmers with more than high school and less than bachelor's degree, while entrepreneurial performance among farmers with bachelor's degree and above was significantly higher than that of farmers with lower education level. This is a very interesting finding, the entrepreneurial behaviour of farmers and the education level is not a linear relationship, but shows an inverted "U" shaped trend, which on the one hand, indicates that China's rural entrepreneurial market is special, and it is easier for farmer entrepreneurs with the education level of senior high school or above and below bachelor's degree to adapt to the rural entrepreneurial market. On the other hand, it also indicates that entrepreneurs with high education level are more likely to find entrepreneurial opportunities in the urban entrepreneurial market and obtain better entrepreneurial resources and entrepreneurial teams (Zhou Yufei, 2023).

3. Structural equation modelling reveals the intrinsic relationship between entrepreneurial willingness, behaviours and farmers' entrepreneurial performance and yields path test results:

(1) The relationship between entrepreneurial willingness and farmers' entrepreneurial behaviour was verified. The results show that the stronger the entrepreneurial willingness of farmers, the more likely they are to engage in entrepreneurial behaviours such as opportunity identification, resource acquisition and team formation. Bogatyreva's (2019) study shows that entrepreneurial willingness is more likely to promote entrepreneurial behaviours in the context of a highly individualistic culture. Song Guoxue (2022) analyses the mechanism of entrepreneurial willingness to transform entrepreneurial behaviours through the hierarchical regression method, and it is found that entrepreneurial willingness has a significant positive effect on entrepreneurial behaviour. Ajzen's Theory of Planned Behaviour (TPB) and Shapero and Sokol's Model of Entrepreneurial Events (MEE) echo the findings of this study well.

(2) The relationship between entrepreneurial behaviour and farmers' entrepreneurial performance was verified. The results of the study show that farmers' entrepreneurial behaviours, such as entrepreneurial opportunity identification, entrepreneurial resource acquisition and entrepreneurial team formation, will significantly improve entrepreneurial performance. Among them, entrepreneurial team plays a very important role in improving farmers' entrepreneurial performance, and entrepreneurial resources play a central role in the entrepreneurial process. Rui Zhengyun & Shi Qinghua (2018) demonstrated the mechanism of entrepreneurial resources on improving farmers' entrepreneurial performance by researching 251 farmers' entrepreneurs. Cai Junya & Dang Xinghua (2015) verified that

entrepreneurial performance is significantly and positively affected in the stable market environment of entrepreneurial teams by means of a questionnaire survey. These conclusions support the research results well.

(3) The relationship between entrepreneurial willingness and farmers' entrepreneurial performance was verified. The research results show that the direct effect of entrepreneurial willingness on entrepreneurial performance is not significant, and it mainly affects farmers' entrepreneurial performance through the mediating role of entrepreneurial behaviours such as entrepreneurial team, entrepreneurial resources and entrepreneurial opportunities. The reason for the insignificant effect of entrepreneurial willingness on farmers' entrepreneurial performance is due to the unsoundness of the rural entrepreneurial market, which is reflected in the scarcity of entrepreneurial opportunities, the lack of entrepreneurial resources, and less entrepreneurial support policies (Zhou Yufei, 2023), and due to the fact that the quality of farmers' entrepreneurial individuals is generally low, and their entrepreneurial behaviours are easily affected by the entrepreneurial environment, which in turn affects their entrepreneurial performance (Zhu Honggen, 2013; Song Guoxue, 2015; He Liangxing & Zhang Yuli, 2022).

Knowledge from Research

The research findings provide a theoretical basis and methodology for improving the entrepreneurial performance of farmer entrepreneurs in Hunan Province and promoting the sustainable development of farmer entrepreneurship in Hunan Province.

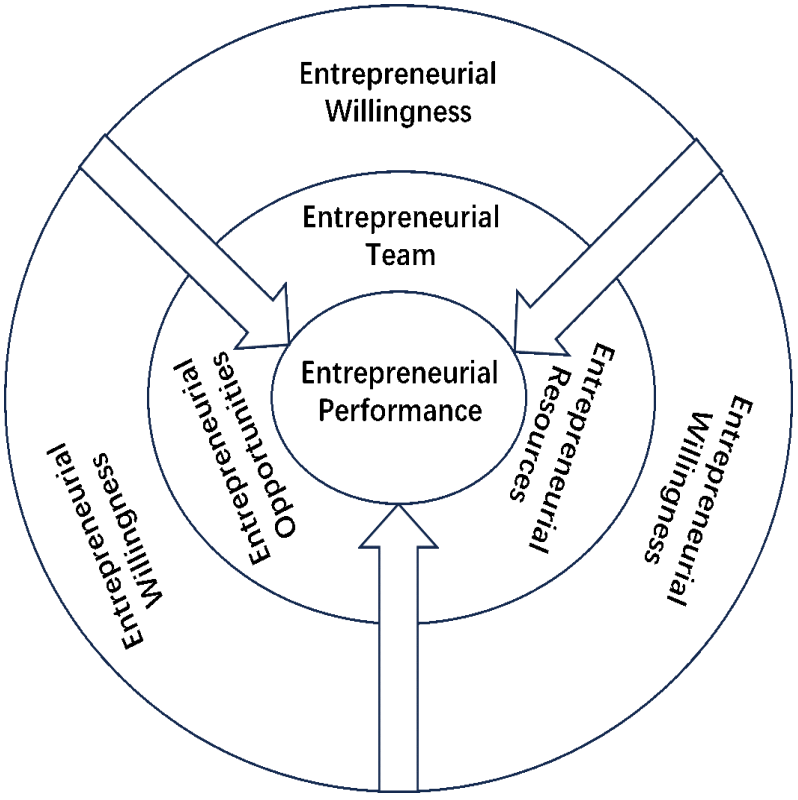

Fig. 2 New knowledge on entrepreneurial performance of farmers in Hunan

Conclusion

1. The influencing factors of farmers' entrepreneurial performance in Hunan Province is Entrepreneurial behavior includes entrepreneurial team, entrepreneurial resources and entrepreneurial opportunities.

2. The results showed that entrepreneurial willingness has a direct positive effect on farmers' entrepreneurial behavior in terms of entrepreneurial opportunities, entrepreneurial resources and entrepreneurial teams. But it will indirectly have a positive effect on farmers' entrepreneurial performance through entrepreneurial behavior.

3. Based on the findings of the study, countermeasures to promote farmers' entrepreneurship in their hometowns are proposed: 1) Guide and support female entrepreneurship. 2) Emphasize entrepreneurship training and education. 3) Improve farmers' entrepreneurial willingness. 4) Enhance farmers' entrepreneurial behavior. And 5) Encourage multiple forms of entrepreneurship.

Suggestions

Chinese farmers' entrepreneurship is a scientific issue that is very worthy of in-depth research, and although there is a good research foundation, further research can be carried out in the following aspects.

1. Optimising and improving the scale design. The research object of this paper is farmer entrepreneurs, to study the relationship between entrepreneurial willingness, behaviour and performance of farmer entrepreneurs. In the process of questionnaire design, we mainly referred to the mature scales of domestic and foreign studies, and adjusted and improved the scales through pre-surveys before the questionnaire was distributed, and the results showed that the scales had good reliability and validity. Among them, some entrepreneurial performance scales have been used by scholars to study farmers' entrepreneurship in the past. However, these scales are not designed for the special group of Chinese farmers, so there is still much room for optimisation. In the future, we can consider scientifically designing farmers' entrepreneurial willingness scale, entrepreneurial behaviour scale and entrepreneurial performance scale under the guidance of theories and applying them in the study of farmers' entrepreneurship. Meanwhile, subsequent researchers can further optimise the survey samples. China is a vast country with a large population. In the process of questionnaire distribution, it is difficult to cover all regions and populations where farmer entrepreneurs exist. This paper can only select representative entrepreneurial regions and invite as many farmers of different entrepreneurial types as possible to participate in the questionnaire survey. In order to control the homogeneity bias of the same person filling out the questionnaire, screening questions were set in the questionnaire design. However, concealment, omission and overfilling are inevitable in formal questionnaires. Although the screening questions are effective, this paper still cannot avoid the subjectivity of the questionnaire. If a continuous tracking sample can be used to conduct further research, it will contribute to the continuous deepening of theoretical research on Chinese farmers' entrepreneurship.

2. Expanding the research methodology on farmers' entrepreneurship in China. The structural equation model applied in this paper is based on the covariance matrix and examines the interactions between multiple variables such as farmers' entrepreneurial willingness, behaviour and performance, including direct and indirect effects between variables. The results of the observed path test found that the two-by-two combinations of the variables produced multiple paths of difference, i.e. there are different forms of combinations between entrepreneurial willingness and behavioural variables that affect the level of farmers' entrepreneurial performance. However, structural equation modelling assumes that the

variables are independent of each other, so it is difficult to analyse the combination effect between variables in depth. Future research can try to switch perspectives and use the fuzzy set qualitative comparative analysis (fsQCA) method to explore the groupings that affect farmers' entrepreneurial performance.

3. Conduct innovative research on the theoretical model of Chinese farmers' entrepreneurship. Based on Timmons' entrepreneurial process model, this paper explores the relationship between farmers' entrepreneurial willingness, behaviour and performance, and conducts empirical tests. Although the empirical test partially verifies the theoretical model proposed in this paper, entrepreneurship as a complex phenomenon, which not only includes willingness, behaviour and performance, but also is influenced by the external environment and even the regional culture, cannot be fully covered by one theoretical model. Personal cognition and self-efficacy affect entrepreneurial willingness, and entrepreneurial behaviour can be further subdivided into opportunity identification, evaluation and exploitation, resource acquisition and integration, team cognition and composition, and so on. Entrepreneurial performance is also moderated and influenced by the environment. In the future, we can further construct a complete theoretical system and framework model based on previous studies to analyse farmers' entrepreneurship in the Chinese context.

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