Article

Influencing Mechanism of Rural Households' Livelihood Capital on Entrepreneurial Behavior: Evidence from the CFPS

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Abstract: The livelihood capital of rural households is an essential basis for their selection of livelihood strategy. This paper uses rural household data from the 2018 CFPS to construct a "hexagonal" framework for the analysis of livelihood capital. Natural capital, material capital, financial capital, social capital, human capital, psychological capital, and total livelihood capital are measured using entropy weight method. The paper uses logit and tobit models to analyze how livelihood capital affects rural households' entrepreneurship. Finally, the heterogeneous impact of livelihood capital on rural households' entrepreneurial behavior is discussed from the view of household head gender, household education level, and regional differences. The results show that rural households' livelihood capital distribution in each dimension is uneven and the difference is great. Rural households' capital of livelihood and finance have positive effects on their entrepreneurial behavior. Heterogeneity analysis shows that the increase in livelihood capital impacts entrepreneurship in female-headed households more positively and significantly. Livelihood capital can significantly promote the entrepreneurial behavior of rural households with lower education levels. The impact of livelihood capital on rural household entrepreneurship presents a decreasing distribution pattern from east to the middle to west. The results of the robustness test show that the conclusion of the positive impact of livelihood capital on rural household entrepreneurship is reliable. The main conclusions provide guidance and a foundation for further optimizing rural household entrepreneurship policies and promoting rural household entrepreneurship.

Keywords: livelihood capital; cultivated land; rural households; entrepreneurial behavior; logit-tobit model; heterogeneity

1. Introduction

Since 2015, when the Chinese state began to drive "mass entrepreneurship and innovation", entrepreneurship has gained momentum, promoting the adjustment of economic structure and the transformation and upgrading of industries, and injecting new impetus into economic growth. Limited by financial constraints, information asymmetry, lack of entrepreneurial knowledge, and other factors, entrepreneurship enthusiasm in rural areas needs to be improved given that entrepreneurship mostly occurs in urban areas with a relatively developed economy and high levels of scientific and technological advancement [1]. The effect of rural households' entrepreneurship on their income is obvious. Rural households' entrepreneurship not only provides more employment but also broadens the sources of income for rural households. Rural households' entrepreneurship can also produce an identification effect. With the increasing connections within society, rural households can establish a sense of belonging and identity with the social network and improve their social status perception [2].

Rural households' livelihood capital is the basis of production and their daily life, which reflects their development level [3,4]. In recent years, the feasibility and the success rate of rural households' entrepreneurship have increased significantly—not only because

the material foundation of rural households' entrepreneurship has been consolidated with the development of the internet, the utilization of electronic equipment, and digital and information-based agriculture—but also because of the educational training and the continuous improvement of rural households' capital quality in different dimensions such as human capital, social capital, financial capital and so on [1]. Household capital for livelihood includes natural capital, material capital, financial capital, human capital, social capital, and psychological capital [5,6]. Rural households' risk preferences, human capital, financial market participation, social environment, and individual characteristics have a significant impact on rural households' entrepreneurial willingness and behavior [5,7,8].

At present, there are few studies and discussions on the impact of livelihood capital on rural households' entrepreneurship. Most of the studies on the impact of livelihood capital on rural households' livelihood strategy choice, income consumption level, behavior pattern, etc. In terms of rural households' entrepreneurship, its impact on rural households' entrepreneurship is mostly explored from the perspective of sub-dimensional capital, such as social capital and human capital, and the entrepreneurial effect of the overall livelihood capital of rural households lacks specific verification. It restricts the improvement of rural households' livelihood capital level and the occurrence of rural households' entrepreneurial behavior and hinders the process of rural modernization transformation. This paper constructs a livelihood capital evaluation system according to the hexagonal livelihood capital framework and calculates six dimensions of livelihood capital indicators stock and total livelihood capital. From the livelihood capital angle, the factors affecting rural households' entrepreneurship are discussed, and heterogeneity is analyzed by comparing household head gender, family education level, and regional differences. These analyses provide empirical evidence and a decision-making reference for the improvement of policies related to rural households' entrepreneurship, implementing rural revitalization strategies effectively, and realizing society-wide prosperity.

The study makes the following marginal contributions: First, we calculate the stock level of livelihood capital's six dimensions and total livelihood capital of rural households by constructing a hexagonal livelihood capital framework. The livelihood capital stock in each dimension and the impact of the livelihood capital sub-index and total index on rural households' entrepreneurial behavior are analyzed. Second, the analysis of heterogeneity shows that improved livelihood capital impacts female-headed households' entrepreneurial behavior significantly. The main factor influencing lower education level households' entrepreneurial behavior is livelihood capital, and the marginal effects on entrepreneurship and entrepreneurial intensity are 0.241 and 0.673, respectively. Third, the livelihood capital significantly and positively impacts rural households' entrepreneurship in regions with high economic development levels.

2. Literature Review

Literature on the level of household livelihood capital and entrepreneurial behavior in rural areas mainly focuses on their conceptions, characteristics, influencing factors, and the relationship between the two.

2.1. Rural Household Livelihood Capital

Livelihood capital is the foundation for rural households' survival and activities: when rural households are affected by external shocks, they can integrate material and human capital to make a living and accumulate more capital from different areas; this has an enormous impact on the productivity and daily lives of households in rural areas [9]. As a key component of sustainable livelihood theory [10], livelihood capital plays a fundamental role in maintaining sustainable survival, changing livelihood strategy, carrying out livelihood output, and realizing the livelihood goals under the background of vulnerability. This is the reason why livelihood capital impacts the improvement of living standards and welfare significantly [5,11,12]. The early livelihood capital framework, which integrated poverty vulnerability and social adaptability, was proposed by the Department for International

Development (DFID) [4]. In this framework, livelihood capital consists of human capital, natural capital, material capital, financial capital, and social capital [7,13]. Increasing attention has been paid to the psychological expectations and social trust of rural households by scholars for the past few years, who believe that psychological capital plays an important role in the survival and development of households in rural areas [3,5]. Therefore, psychological capital has been incorporated into the theoretical framework of livelihood capital, which has been expanded from a pentagon- to a hexagon-based framework [5,6].

Livelihood capital has an important impact on the choice of household livelihood strategy, household income level, and household behavior pattern [14,15]. The improvement of livelihood capital stock [16,17] and structure [18] can encourage households in rural areas to choose diversified livelihood strategies, improve their ability to resist risks effectively and enhance the sustainability of their livelihoods. Because of the synergistic and substitution effect among different dimensions of livelihood capital [19], adjusting and optimizing the structure and improving stock level of livelihood capital [19]—especially financial capital stock [10]—can effectively reduce livelihood poverty vulnerability and enhance the livelihood sustainability of households in rural areas and income growth [19], to effectively keep rural households out of the "poverty trap" [20], enhance economic capacity [21], and improve rural households' resilience to cope with losses in the context of vulnerability [22]. In addition, the increase of livelihood capital stock impacts the choice of agricultural production mode of rural households significantly [14] and influences their pro-environment behavior [15] and travel demands [23,24]. The increase in financial capital plays an important role in improving the financial market participation of rural households [25].

2.2. Rural Household Entrepreneurship

Rural household entrepreneurship is a process by which rural households create new products, services, and organizations by integrating and utilizing rural resources and interacting and coordinating with the external environment [26,27]. Rural household entrepreneurship can effectively narrow the urban-rural income gap, integrate and revitalize resources [28], alleviate the employment crisis, improve poverty vulnerability and livelihood difficulties in rural areas [29], and accelerate the process of rural revitalization [1]. Individual characteristics, family characteristics, and social networks have been discussed as factors that affect rural household entrepreneurship—individual characteristics, risk preference, cognitive ability, age, gender, education level, and work experience of rural households are the main factors involved [30,31]. Household characteristics mainly include household size, household livelihood capital stock, household wealth level, household credit availability, which are used to represent the human and material basis and credit constraints of rural households in the process of entrepreneurship [32,33]. Social network refers to an individual's social environment, which affects the individual's ability and way to obtain resources [34], and mainly includes geographical relationship [35], industry environment [1], social environment [36,37], and other factors. Individuals in regions with a strong "small society" of friends and relatives, low entrepreneurial threshold, and strong entrepreneurial support have higher entrepreneurial willingness [36,38].

As a livelihood strategy of rural households, entrepreneurship is deeply influenced by livelihood capital [33]. Rural households with high financial capital, human capital, and material capital stock have greater credit availability, entrepreneurial ability, and a higher willingness to start businesses [34]. As an external condition for entrepreneurship, the increase of social capital stock can effectively enhance the entrepreneurial intention of rural households [39]. The impact of different dimensions of livelihood capital on entrepreneurship has regional and gender heterogeneity [40]. Studying the correlation between rural households' livelihood capital and entrepreneurial behavior contributes to innovating cultivation systems and promoting sustainable livelihood development of rural households.

Extant studies on how livelihood capital impacts rural households' entrepreneurship are conducted according to the pentagonal framework of livelihood capital, and there is a lack of research measuring livelihood capital at the national level and its effect on rural households' entrepreneurship. Considering the influence of rural households' life satisfaction and degree of future confidence on their behavior is increasingly obvious—this paper includes it as psychological capital in the livelihood capital analytical framework. Through the construction of a hexagonal livelihood capital evaluation system, the sub-index and total index of livelihood capital are measured, and its influence on rural household entrepreneurship is discussed. In addition, the heterogeneous impact of livelihood capital on entrepreneurship is analyzed from the perspectives of the household head's gender, the level of family education, and regional differences. As such, this paper addresses an important gap in the literature on livelihood capital and its effect on rural households' entrepreneurship at the national level from a "hexagonal" framework and offers guidance for promoting rural household entrepreneurship.

3. Theoretical Analysis and Research Hypotheses

Currently, the internationally accepted livelihood capital analysis framework is the Sustainable Livelihoods Approach (SLA), established by the UK's Department for International Development (DFID). Under this framework, livelihood capital consists of five parts: natural capital, material capital, financial capital, human capital, and social capital. Social trust and life satisfaction of rural households are also included in the sustainable capital analysis framework as psychological capital [5,6]. Below, we present a theoretical analysis and hypotheses for each dimension of livelihood capital.

3.1. Natural Capital

The natural resources owned by rural households are the basis of their livelihood capital accumulation. Natural capital refers to the natural resources related to the daily production and life of rural households, and can be integrated and utilized to realize value appreciation, including tangible assets, intangible assets, and ecological services [4,41]. Because the acquisition of rural households' livelihood capital mainly depends on rural households resources and individual ability [25,42], the measurement of natural capital focuses on the natural endowment of rural households for agricultural production from the perspective of their income and assets [3], the natural capital studied in this paper mainly refers to tangible assets, such as cultivated land and forest land [5,43,44]. Rural households have more natural capital, i.e., the cultivated land and forest land stock, therefore, it is more feasible for rural households to increase the income of primary production by expanding the scale of management [6]. Furthermore, agricultural and forestry production becomes the main source of income, which enhances the survival guarantee function of land and strengthens rural households' dependence on tangible assets, and at the same time, rural households tend to maintain and develop the current agricultural livelihood strategy under the effect of rural households' risk aversion psychology, making rural households less willing to start businesses [40,45]. In addition, based on the "resource curse" proposition that natural resource dependence is negatively related to new institutional arrangements and economic growth, the agricultural income of households with higher natural resource endowments is characterized by higher levels and stability. Therefore, the possibility of changing agriculture-based livelihood strategies to carry out high-risk and high-input entrepreneurial behaviors is less likely. Therefore, Hypothesis 1 is proposed:

Hypothesis 1 (H1): *Natural capital: Rural households' stock of natural capital is negatively correlated with their entrepreneurship.*

3.2. Material Capital

The accumulation of rural households' livelihood capital needs a certain material basis. Material capital refers to the materials and equipment related to rural households' production and life, which is the basic condition to maintain the production and life of rural households, and also the material basis to improve the livelihood ability and living standard of rural households. Its stock level directly reflects the living standard and general economic situation of rural households [33]. The richer the material base of rural households, the stronger their willingness to change their livelihood status, and the more inclined they are to choose diversified livelihood strategies and to effectively enhance the success rate of entrepreneurship [14]. Some studies have also found that rural households with high material capital have relatively low subjective intention to start entrepreneurship with higher risk considering their living situation, the risk of changing their living situation, and their satisfaction with their current living situation [33]. Therefore, Hypothesis 2 is proposed:

Hypothesis 2 (H2): *Material capital: The effect of material capital on rural households' entrepreneurship is uncertain.*

3.3. Financial Capital

Financial capital is the capital basis for all living, production, and operation activities of rural households, which comes from their sustainable production activities and further helps them expand the production scale and improve their living standards [6]. It is an important financial guarantee for improving the livelihood ability of rural households and promoting the sustainable development of their livelihoods [46]. The increased financial capital stock of rural households gives these households stronger survival motivation and a higher willingness to seek more channels to increase their income. Entrepreneurship with high risk and high return has become one of the main ways for rural households to change their living status [34]. Financial capital is the foundation on which rural households' entrepreneurial ideas can be built, which can alleviate the financial constraints of rural households [33], enhance the possibility of success of rural households' entrepreneurship, and favor income structure optimization, livelihood, and sustainable development of rural households [27]. Therefore, Hypothesis 3 is proposed in this paper:

Hypothesis 3 (H3): *Financial capital: Rural households' stock of financial capital is positively correlated with their entrepreneurship.*

3.4. Human Capital

The accumulation and improvement of livelihood capital not only requires resource support and material accumulation, but also the active role of labor force can not be ignored. As the leader of agricultural production behavior, the quantity, education level, and physical quality of labor force are also important factors affecting the transformation of rural households' livelihood strategies and entrepreneurial behaviors [33], and human capital is integrated into the key dimension of rural households' livelihood capital. As the core driving force for the sustainable economic development of rural households [6], human capital reflects their productivity, especially in poor and backward areas, and should pay attention to the role of human capital in improving the livelihood ability of rural households [47]. Households with a higher stock of human capital will have a higher household labor productivity rate and productivity level and tend to change the current production mode [31]. Households with more labor force will have more ways to access resources and information related to entrepreneurship [40]. Health is also positively related to entrepreneurial behavior. The high-quality labor force in rural households has the potential to become entrepreneurs and transform the household production mode,

realize diversified production, and increase household income [6]. The characteristics of rural households are the basic and main factors for the formation of the entrepreneurial intention of rural households [30,48]. Therefore, rural households with high human capital stock are more likely to engage in entrepreneurship. This paper puts forward the following hypothesis:

Hypothesis 4 (H4): *Human capital: Human capital stock is positively correlated with rural households' entrepreneurship.*

3.5. Social Capital

The measurement of rural households' livelihood capital is inseparable from their social network and social resources. Social capital refers to relationships with society and resources involved in the production and lives of rural households [10], which represents the participation of social organizations and the ability to acquire information [18], improving cooperation among social individuals to improve social efficiency and social integration [49]. Social capital is the capital condition for rural households to expand their income sources and the basis to change their livelihood strategies [10,40]. Generally speaking, with a higher stock of social capital, rural households can obtain more economic and psychological support in more diversified ways [36], actively expand their channels of information technology, better grasp policy trends and market conditions, and enjoy higher entrepreneurial convenience [50]. Rural households with high social capital stock have stronger social relations and wider social contacts, which are conducive to expanding the external financing channels of rural households, reducing the financial constraints of entrepreneurship, and thus implementing entrepreneurship [30,40,49]. Therefore, the following hypothesis is proposed:

Hypothesis 5 (H5): *Social capital: Social capital stock is positively correlated with rural households' entrepreneurship.*

3.6. Psychological Capital

Based on the SLA model of DFID, psychological capital is incorporated into the analysis framework in this paper. Rural households' psychological capital, which is measured based on their life satisfaction, confidence in the future, and social trust, is a key factor for individual development [3,18] and affects their livelihood strategy choice, subjective well-being, and poverty reduction [51]. Generally speaking, when rural households have more psychological capital, the subjective psychology is more positive, their stress resistance and recovery ability is stronger [52], and their livelihood ability is stronger, they have the psychological qualities required to change their livelihood strategy and carry out high-risk entrepreneurship, and are more able to improve their income level and living standard and achieve a sustainable form of livelihood. In turn, this increases the willingness to achieve good livelihood outcomes through the choice of entrepreneurship. The enhancement of social trust will also improve rural households' entrepreneurial confidence and promote their entrepreneurial intention [39]. Therefore, the psychological capital of the entrepreneurial subject will play a positive role in promoting entrepreneurship. This paper puts forward the following hypothesis:

Hypothesis 6 (H6): *Psychological capital: The stock of psychological capital is positively correlated with the entrepreneurship of rural households.*

3.7. Heterogeneity Analysis

3.7.1. Household Head's Gender, Livelihood Capital, and Rural Household Entrepreneurship

Compared with females, males have advantages in entrepreneurship and career development as they are more extroverted and adventurous [53]. In addition, influenced by the traditional view of "men outside the home, women inside", men are often the main breadwinners for their families. Driven by self-efficacy (According to Shapero's entrepreneurial event (SEE) model, entrepreneurial intention is determined by desire perception and feasibility perception, i.e., self-efficacy and action tendency. Self-efficacy refers to people's confidence in starting a business after considering their self-ability and external conditions), men are more likely to start entrepreneurship [33,54], which will diversify their survival strategies. Due to the limitations of tradition, risk preferences, financial literacy, and other factors, female groups often assume the role of caring for husbands and raising children, with limited sources of livelihood and low livelihood capital stock [55]. The increase in female livelihood capital stock will play a more significant positive role in promoting rural household entrepreneurship because the willingness of women to realize self-worth and expand family livelihood sources will increase as their livelihood capital stock increases [31,56,57]. Accordingly, this paper puts forward the following hypothesis:

Hypothesis 7 (H7): *Livelihood capital has different effects on entrepreneurship according to the gender of the household head.*

3.7.2. Household Education Level, Livelihood Capital, and Rural Household Entrepreneurship

Household livelihood vulnerability and poverty are relatively high for less-educated rural households. These rural households' adventurous spirit and initiative are weak, and their willingness to change their current livelihood strategy is low. They are inclined to maintain their current living situation and livelihood strategy [13]. When the livelihood capital stock increases, the tendency of rural households to start their businesses increases to enhance the sustainability of their livelihoods. However, rural households with relatively higher education levels have high financial literacy, rich financial reserves, and stable livelihood strategies [33,57]. The choice of entrepreneurial behavior is usually based on personal ability, opportunity, and other factors, and the dependence on livelihood capital is reduced. The impact of livelihood capital on the entrepreneurship of households with higher education levels is not significant [58]. Accordingly, this paper puts forward the following hypothesis:

Hypothesis 8 (H8): *Livelihood capital has different effects on entrepreneurship in households with educational backgrounds.*

3.7.3. Regional Differences, Livelihood Capital, and Rural Household Entrepreneurship

China's economic development level is much higher in the east than in the west of the country. The economic development level, rural households' self-quality, and the entrepreneurial environment of different regions have vital impacts on rural households' entrepreneurship [34,36]. Entrepreneurial support will be stronger in regions with higher economic development levels, and a relaxed entrepreneurial environment will enhance rural households' entrepreneurial willingness [59]. Rural households in the East have more ways to obtain abundant information resources and their entrepreneurial activity is relatively high because the economic conditions, technological development, and entrepreneurial atmosphere are better in the Eastern region [1]. Because central and western regions are less developed, the weak survival foundation for rural households and poor entrepreneurial environment inhibits the formation of the entrepreneurial willingness of rural

households [39]. Therefore, the promoting effect of livelihood capital on entrepreneurship is weak. Accordingly, this paper puts forward the following hypothesis:

Hypothesis 9 (H9): *Livelihood capital has different effects on entrepreneurship in regions with different levels of economic development.*

4. Dataset and Results

4.1. Data Sources and Dataset

We use the 2018 China Family Panel Studies (CFPS) data to analyze how rural households' livelihood capital affects entrepreneurship. The data sources, livelihood capital framework, and selection of relevant variables are described as follows.

4.1.1. Data Sources

This article uses microdata derived from the CFPS database, which was established by the Institute of Social Science Survey (ISSS) through field surveys and questionnaire interviews. The survey scope of the CFPS database covers 25 provinces (municipalities and districts) in China, representing the basic production and living conditions of 95% of the Chinese people, and is very comprehensive. Since the CFPS database is updated every two years, the publication time is delayed, and the availability of some indicator data used in this paper is limited, so this paper uses CFPS data in 2018 to carry out research. The CFPS database contains data for 14,241 households in 2018, of which 6744 are rural. At the individual level, there are 32,669 sample data, of which 15,954 are from rural areas.

The databases for rural households, adults, and children in 2018 are matched by family identity document (fid) and merged into one database comprising family units. In addition, part of the index data needed in this paper are also matched by fid from the databases in 2012 and 2014, and urban family data and missing data of key indicators are eliminated. The result is a sample dataset of 3346 rural households.

4.1.2. Variables

Whether entrepreneurship and *intensity of entrepreneurship* are selected as dependent variables to measure the entrepreneurial behavior of rural households. A livelihood capital index system is constructed as an independent variable to study its impact on rural households' entrepreneurship. Individual characteristics of rural households, family characteristics, and community characteristics—also important factors affecting entrepreneurship—are taken as control variables.

Dependent variables. According to the CFPS questionnaire content and dataset in 2018 and regarding the selection of variables for rural households' entrepreneurial decision-making [1,40], the response to the question "During the past 12 months, has any member of your family been self-employed or in a private business?" is selected as the dependent variable to determine entrepreneurship of rural households, and we select the question "How many self-employed activities or private enterprises have the family members engaged in in the past 12 months? (item/home)" as the dependent variable to judge rural households entrepreneurial intensity.

Independent variables. We set the livelihood capital and the hexagonal livelihood capital analysis framework composed of natural capital, material capital, financial capital, human capital, social capital, and psychological capital as the independent variables in this paper. The construction and measurement of the livelihood capital evaluation system refer to the SLA framework of DFID [4] and the research of Zhao, Wang, and Shi [5] and Walelign et al. [3].

Control variables. Factors such as age, gender, and local economic development level of rural households may have effects on rural households' entrepreneurial behavior. Drawing on Zhao, Wang, and Shi [5], Dong, Sun, and Wu [1], Williams, Zhao, Sonenshein,

Ucbasaran, and George [31], and Zhao, Zhao, and Hong [18], this paper selects control variables from the individual, family, and community levels of rural households. Variables are described in Table 1.

Table 1. Variable selection and description.

Variables		Indicators	Indicator Meaning and Assignment Method
Rural households' entrepreneurship		Whether entrepreneurship	During the past 12 months, has any member of your family been self-employed or in a private business? The value of this variable is 1 for yes and 0 otherwise
		Intensity of entrepreneurship	How many self-employed activities or private enterprises have family members engaged in in the past 12 months? (item/home)
Livelihood capital (L)	Natural capital (N)	Scale of land under cultivation	Farmland area allocated in 2012—(rental income from leased land/average price per mu of local leased land) (mu)
		Cultivated land quality	Grade 1–5: The higher the quality of cultivated land, the higher the grade
		Drinking water source	Well water, river lake = 0; Tap water, purified water, filtered water = 1
	Material capital (M)	House values	Current estimated value of household housing (ten thousand yuan)
		Value of household fixed assets	Total value of production tools, transportation tools, household appliances, jewelry, and other durable goods (ten thousand yuan)
		Livestock and aquatic products	Does the household own livestock or aquatic products? The variable value is 1 for yes and 0 otherwise
	Financial capital (F)	Net assets	Total amount of household cash and deposits (ten thousand yuan)
		Financial products	Does the household hold any financial products? The value of this variable is 1 for yes and 0 otherwise
		Household credit	Does the household have an outstanding bank loan? The value of this variable is 1 for yes and 0 otherwise
		Commercial insurance expenditure	Commercial insurance expenditure (ten thousand yuan)
	Human capital (H)	Labor force	Number of members of the household labor force (people)
		Average adult education level per household	Total years of education of household adults/Total number of adults (years/person)
		Average health status of adults per household	Bad health = 1; Neither healthy nor unhealthy = 2; Acceptable health = 3; Good health = 4; Very good health = 5
		Family education and training expenses	Total cost of family education and training in the past 12 months (ten thousand yuan)
	Social capital (S)	Expenditure for favors	Expenditure on favors (ten thousand yuan)
		Social status	Values range from 1 (low social status) to 5 (high social status)
		Status of participation in social organizations	Whether the household participate in social organizations such as cooperatives? The value of this variable is 1 for yes and 0 otherwise
		Family transportation and communication expenses	Total monthly transportation and communication expenses (ten thousand yuan)
		External economic support	Financial support from relatives and others (ten thousand yuan)
	Psychological capital (P)	Degree of neighbor trust	On a scale of 1–10, the higher the trust level, the higher the rating
		Life satisfaction	On a scale of 1–5, the higher the level of life satisfaction, the higher the rating
		Degree of future expectation	On a scale of 1–5, the higher the expectation of the future, the higher the rating

Table 1. *Cont.*

Variables		Indicators	Indicator Meaning and Assignment Method
Control variables	Individual level	Household head age	Age (years)
		Education level of household head	Length of household head education (years)
		Migrant work experience	Whether the household head has migrant work experience? The value of this variable is 1 for yes and 0 otherwise
	Household level	Household size	Total household size (people)
		family burden	The ratio of household spending on education, health care, old-age care, etc., to total income
		Non-farm activities	In the past 12 months, have you been mainly involved in non-farm activities? The value is equal to 1 if the household is primarily engaged in non-farm activities, and 0 otherwise
	Community Level	Distance to business center	Distance between the family's village and the nearest market town (li)
		Local economic development level	Average annual income per household in the village where the family is located (ten thousand yuan)

4.1.3. Comprehensive Analysis of Livelihood Capital Level

Based on livelihood capital measurement methods by Cui and Yang [60] and Zhao, Wang, and Shi [5], the entropy weight method is used to determine index weight and conduct a comprehensive evaluation of livelihood capital. The entropy weight method is a mature calculation method, the specific calculation process will not be described here. The results of livelihood capital evaluation are shown in Table 2.

Table 2. Livelihood capital weight and evaluation values.

First-Level Indicators	Secondary Indicators	Weight	Evaluation Value
Natural capital (N) (0.098)	Scale of land under cultivation	0.035	
	Cultivated land quality	0.040	0.022
	Drinking water source	0.023	
Material capital (M) (0.102)	House values	0.030	
	Value of household fixed assets	0.042	0.017
	Livestock and aquatic products	0.030	
Financial capital (F) (0.413)	Net assets	0.051	
	Financial products	0.183	
	Household credit	0.098	0.014
	Commercial insurance expenditure	0.081	
Human capital (H) (0.109)	Labor force	0.005	
	Average adult education level per household	0.027	
	Average health status of adults per household	0.007	0.012
	Family education and training expenses	0.070	
Social capital (S) (0.214)	Expenditure for favors	0.025	
	Social status	0.004	
	Status of participation in social organizations	0.074	0.020
	Family transportation and communication expenses	0.022	
	External economic support	0.089	
Psychological capital (P) (0.063)	Degree of neighbor trust	0.060	
	Life satisfaction	0.002	0.014
	Degree of future expectation	0.001	

The weight distribution of the first-level indicators shows that the weight of these indicators of livelihood capital varies considerably (Table 2), the weight order is as follows: Financial capital (0.413) > Social capital (0.214) > Human capital (0.109) > Material capital (0.102) > Natural capital (0.098) > Psychological capital (0.063), indicating that the financial

capital data has the largest difference, followed by social capital, human capital, material capital, natural capital, and psychological capital data. Compared with secondary indicators, the weight of financial products is the most important indicator, not only among financial capital indicators but for the indicators overall. Financial products are affected by rural households' economic level and risk resistance capability, so rural households' financial capital stock is quite different from other households. The value of external economic support and the status of participation in social organizations are the two most important social capital indicators, indicating that giving rural households external economic support and encouraging them to participate in cooperative organizations can effectively improve their livelihood capital. The weight of life satisfaction and degree of future expectation in psychological capital are low, showing that rural households' life satisfaction and future expectations are not significantly different from other individuals.

The rural households' livelihood capital valuation shows that natural capital value is 0.022, social capital, material capital, financial capital, psychological capital, and human capital values are 0.020, 0.017, 0.014, 0.014, and 0.012, respectively (Figure 1). The shape of the regular hexagon of livelihood capital indicates that the livelihood capital of each dimension is unevenly distributed, which means that rural households possess extensive natural resources, material capital, and social capital. The values of both external economic support and participation in social organizations in social capital are high. Rural households' financial capital and psychological capital are low, both having a value of 0.014. The evaluation value of human capital is only 0.012, the weights of family education, training expenses, and average adult education level per household index are high, indicating that increasing the education level of the family and dedicating expenses to training can effectively improve the stock of human capital of rural households. In addition, from the perspective of gender of household head, family education level, and regional differences, this paper conducts a comparative analysis of the level of rural households' livelihood capital. The results show that: Female-headed households have higher psychological capital. Highly educated households have higher human capital, as well as financial and social capital. The value of psychological capital decreases in the order of east, center, and west, while the financial capital shows an increasing distribution pattern of "east-center-west".
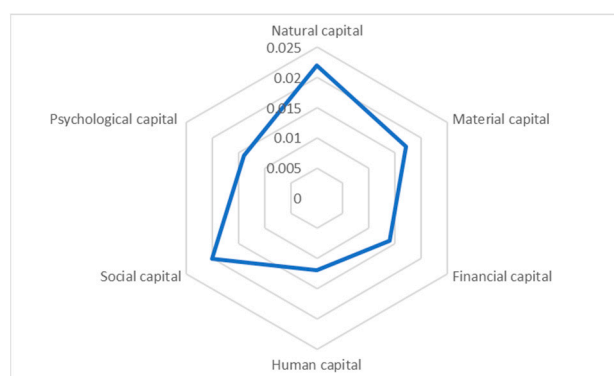

Figure 1. Rural households' livelihood capital valuation.

4.2. Methodology

Binary logistic regression analysis and the tobit model are used to explore how livelihood capital affects the entrepreneurship of rural households. *Whether entrepreneurship* and *intensity of entrepreneurship* are dependent variables, indicators of livelihood capital are independent variables, and individual factors of rural households, family factors, and community factors are control variables. To reduce the errors caused by different dimensions among indicators, standardized data are used for empirical analysis, and the evaluation models are designed as follows:

We select the binary logistic model to analyze how livelihood capital affects *whether entrepreneurship*, because the dependent variable *whether entrepreneurship* is a binary variable.

$$Logit(p) = \beta_0 + \beta_1 L_i + \sum_{n=1} \gamma_{1n}\alpha_{in} + \varepsilon_i \tag{1}$$

In the above equation, *p* refers to the probability of entrepreneurship, β_0 is the intercept term; L_i is the explanatory variable, β_i is the parameter to be estimated, representing the impact degree of livelihood capital indexes in each dimension on the entrepreneurial behavior of rural households, α_i represents the control variable, *i* refers to the number of control variables, and ε_i is the random error term.

In addition, we apply the tobit model to analyze how livelihood capital affects the entrepreneurial intensity of rural households. *Intensity of entrepreneurship*, as a dependent variable, is expressed by the number of enterprises launched in the recent year, which can be 0 or other positive numbers. When rural households do not start an enterprise, the entrepreneurial quantity is 0. The model is as follows.

$$Number_i^* = \beta_0 + \beta_2 L_i + \sum_{n=1} \gamma_{2n}\alpha_{in} + \varepsilon_i$$
$$Number_i = max\ (0, Number_i^*) \tag{2}$$

In the above equation, $Number_i$ is the explained variable, i.e., the entrepreneurial intensity of rural households, expressed by the number of entrepreneurial activities, and $Number_i^*$ is the latent variable. When $Number_i^*$ is 0, $Number_i$ is 0, otherwise, it takes the same value as $Number_i^*$ itself, and the remaining variables are consistent with the above.

4.3. Regression Analysis

The baseline regression results for how the sub-index and total index of livelihood capital affect rural households' entrepreneurial behavior are shown in Table 3.

From the logit regression results, we find that livelihood capital influences rural households' entrepreneurship significantly and positively at the 1% level. The regression coefficients of capital in different dimensions are all greater than 0, among which the coefficient on financial capital is statistically significant at the 1% level, indicating that with an increase in financial capital stock, rural households' entrepreneurship probability will significantly improve. The above regression results confirm the positive correlation of hypothesis 3, while natural capital, physical capital, human capital, social capital, and psychological capital have no significant impact on rural household entrepreneurship, and hypotheses 1, 2, 4, 5, and 6 cannot be verified. As the objective material conditions of rural households' livelihood, natural capital and material capital have no significant impact on rural households' entrepreneurship. A possible explanation for this discrepancy is that because rural households still adopt farming as their main livelihood strategy, the stability and sustainability of their livelihoods are achieved by the accumulation of natural and material capital. They have plenty of natural capital and material capital, while their financial capital stock is scarce for entrepreneurship, which requires a large amount of financial capital input in the early stage. Therefore, natural and material capital has no significant effect on entrepreneurship, whereas financial capital influences entrepreneurship significantly and positively. The human capital of rural household businesses has no significant effect, its coefficient is negative. A possible reason is: That human capital by family labor quantity and quality of comprehensive, based on the current countryside reality, more family labor force and the overall quality is not high, the effect of neck and neck, so no significant influence on entrepreneurial. As intangible assets of rural households, social capital, and psychological capital pay more attention to material basis and financial conditions in their entrepreneurial behavior, while social capital and psychological capital are rarely included in the consideration of entrepreneurial conditions. Therefore, social capital and psychological capital have no significant impact on entrepreneurship. The household head age and migrant work experience impact entrepreneurship choice

negatively and statistically significantly, whereas family size, non-farm activities, and the local economic development level influence entrepreneurship positively and statistically significantly.

Table 3. Baseline regression results.

Variables	Logit				Tobit			
	Whether Entrepreneurship				Intensity of Entrepreneurship			
	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect
Livelihood capital	4.848 ***	0.262 ***			4.842 ***	0.678 ***		
	(1.223)	(0.067)			(1.255)	(0.175)		
Natural capital			6.441	0.347			7.414	1.037
			(4.960)	(0.268)			(4.763)	(0.665)
Material capital			4.005	0.216			5.861	0.820
			(5.186)	(0.280)			(4.970)	(0.695)
Financial capital			7.088 ***	0.382 ***			6.995 ***	0.978 ***
			(1.742)	(0.095)			(1.832)	(0.255)
Human capital			−8.323	−0.449			−7.127	−0.997
			(11.968)	(0.645)			(11.499)	(1.608)
Social capital			2.086	0.112			1.641	0.230
			(2.321)	(0.125)			(2.285)	(0.320)
Psychological capital			4.542	0.245			4.805	0.672
			(4.007)	(0.216)			(3.863)	(0.540)
Education level of household head	−0.019	−0.001	−0.013	−0.001	−0.014	−0.002	−0.008	−0.001
	(0.024)	(0.001)	(0.025)	(0.001)	(0.024)	(0.003)	(0.024)	(0.003)
Household head age	−0.029 ***	−0.002 ***	−0.028 **	−0.001 **	−0.025 **	−0.004 **	−0.024 **	−0.003 **
	(0.009)	(0.000)	(0.009)	(0.000)	(0.008)	(0.001)	(0.008)	(0.001)
Migrant work experience	−1.108 ***	−0.060 ***	−1.150 ***	−0.062 ***	−0.997 ***	−0.140 ***	−1.022 ***	−0.143 ***
	(0.246)	(0.014)	(0.248)	(0.014)	(0.229)	(0.032)	(0.229)	(0.032)
Family size	0.068 *	0.004 *	0.079 **	0.004 **	0.097 **	0.014 **	0.106 **	0.015 **
	(0.037)	(0.002)	(0.038)	(0.002)	(0.036)	(0.005)	(0.038)	(0.005)
Family burden	−0.216	−0.012	−0.227	−0.012	−0.192 *	−0.027 *	−0.198 *	−0.028 *
	(0.139)	(0.008)	(0.142)	(0.008)	(0.115)	(0.016)	(0.117)	(0.016)
Non-agricultural activities	1.327 ***	0.072 ***	1.426 ***	0.077 ***	1.202 ***	0.168 ***	1.293 ***	0.181 ***
	(0.169)	(0.010)	(0.185)	(0.010)	(0.168)	(0.023)	(0.184)	(0.025)
Distance to business center	−0.011	−0.001	−0.012	−0.001	−0.011	−0.002	−0.012	−0.002
	(0.009)	(0.001)	(0.010)	(0.001)	(0.009)	(0.001)	(0.009)	(0.001)
Local economic development level	0.086 **	0.005 **	0.080 **	0.004 **	0.090 **	0.013 **	0.084 **	0.012 **
	(0.031)	(0.002)	(0.031)	(0.002)	(0.032)	(0.005)	(0.033)	(0.005)
_cons	−2.848 ***		−2.803 ***		−3.430 ***		−3.422 ***	
	(0.565)		(0.597)		(0.587)		(0.612)	
Prob > chi^2	0.0000		0.0000		0.0000		0.0000	
pseudo R^2	0.1180		0.1208		0.0941		0.0966	

Note: (1) * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. (2) The reported marginal effect is the average marginal effect of variables.

The logit model's marginal effect result shows that the average marginal effect of livelihood capital is 0.262, indicating that when other conditions remain the same, the probability of rural households starting entrepreneurship increases by 26.2% with an increase of one unit of livelihood capital stock. The financial capital marginal effect is 0.382, indicating that the probability of rural households starting entrepreneurship increases by 38.2% with an increase of one unit of financial capital. The marginal effects of household head age and migrant work experience are −0.001 and −0.062, indicating that the increase in age and out-migration experience of the household head will decrease the entrepreneurship probability by 0.1% and 6.2%, respectively. The marginal effects of family size, non-farm activities, and local economic development level are 0.004, 0.077, and 0.004, indicating that the expansion of family size, engagement in non-farm activities, and improvement in local economic development will increase the entrepreneurship probability by 0.4%, 7.7%, and 0.4%, respectively.

From the tobit regression results, we find that livelihood capital influences *intensity of entrepreneurship* positively and its effect is significant at the 1% level. The regression coefficients of capital in different dimensions are all positive, among which financial capital significantly influences entrepreneurial intensity at the 1% level, indicating that with the financial capital stock increase, rural households' entrepreneurial intensity is enhanced. The household head age, migrant work experience, and family burden all have significant negative impacts on the entrepreneurial intensity of rural households,

while family size, non-farm activities, and local economic development all impact rural households' entrepreneurial intensity significantly and positively.

The tobit model marginal effect shows that the average marginal effect of livelihood capital is 0.678, indicating that when other conditions remain unchanged, the entrepreneurial intensity of rural households increases by 0.678 times for every unit increase in livelihood capital. The marginal effect of financial capital is 0.978, indicating that the entrepreneurial intensity of rural households increases 0.978 times with each unit increase in financial capital. The marginal effects of the household head age, migrant work experience, and family burden are −0.003, −0.143, and −0.028, respectively, indicating that the increase of age and the out-migration experience of household head and family burden will reduce the intensity of household entrepreneurship by 0.003 times, 0.143 times, and 0.028 times, respectively. The marginal effects of family size, non-farm activities, and local economic development level are 0.015, 0.181, and 0.012, respectively, indicating that the expansion of family size, non-farm activities, and the improvement of local economic development level will increase rural households' entrepreneurial intensity by 0.015, 0.181, and 0.012 times, respectively.

The above regression results all verified hypothesis 3 but failed to confirm hypotheses 1, 2, 4, 5, and 6. It can be concluded that financial capital is the main factor promoting rural households' entrepreneurship, indicating that rural households only change their livelihood strategies and choose entrepreneurship when their financial constraints are eased, financial literacy is improved, and the financial environment is enhanced. Older householders and householders with migrant work experience are not inclined to choose entrepreneurial behavior (*whether entrepreneurship* or *intensity of entrepreneurship*), and these factors have significant negative impacts on entrepreneurial intensity, indicating that householders with these two characteristics are more content with their current living conditions and less willing to change the family livelihood status and start entrepreneurship. In addition, the expansion of family size, non-farm activities, and the improvement of local economic development can also significantly promote the decision to engage in entrepreneurship and strengthen the entrepreneurial intensity of rural households, indicating that rural household's family and community characteristics play significant positive roles in their entrepreneurship behavior.

4.4. Heterogeneity Analysis

To determine how livelihood capital stock impacts the entrepreneurial behavior of households with different characteristics, we analyzed the heterogeneous impacts of livelihood capital on different households' entrepreneurial behavior based on the individual, family, and community levels of households, and the results are shown in Table 4.

In heterogeneity test 1, rural households are divided into two groups from the perspective of household head gender, and logit and tobit regressions are performed. From the results, we find that livelihood capital impacts *whether entrepreneurship* and *intensity of entrepreneurship* significantly and positively, and the average marginal effect of livelihood capital is greater for female-headed families than for male-headed families, showing that as livelihood capital stock increases, the entrepreneurial intention of female-headed households improves significantly. The analysis indicates that livelihood capital has heterogeneous impacts on entrepreneurship based on the gender of the household head, and Hypothesis 7 is verified.

In heterogeneity test 2, from the perspective of the family's level of education, sample rural households are split into two groups as follows: Low-education group (average adult education years per household ≤ 9) and High-education group (the average adult education years per household > 9), and logit and tobit regression are conducted. From heterogeneity test 2 results, we find that livelihood capital only significantly affects entrepreneurship of rural households with low educational background, but the effect is less pronounced for highly educated households, indicating that the improvement of livelihood capital stock plays a key role in promoting entrepreneurship among rural households with a

low education level. Therefore, the capital of livelihood affects entrepreneurship of rural households with different education levels heterogeneously. Hypothesis 8 is verified.

In heterogeneity test 3, from the perspective of family location, the sample rural households are split into eastern, central, and western groups. From the results of heterogeneity test 3, we find that livelihood capital has a significant positive impact on *whether entrepreneurship* and *intensity of entrepreneurship*, and from the east to the center and west, the distribution pattern of the degree of influence decreases sequentially. Therefore, the effects of livelihood capital on rural households' entrepreneurship are heterogeneous, which verifies Hypothesis 9.

Table 4. Heterogeneity test results.

Variables	Logit		Tobit	
	Whether Entrepreneurship		*Intensity of Entrepreneurship*	
Heterogeneity Test 1: Gender of Household Head				
	Male	**Female**	**Male**	**Female**
Livelihood capital	0.173 **	0.362 ***	0.468 **	0.936 **
	(0.087)	(0.106)	(0.220)	(0.285)
Control variables	Yes	Yes	Yes	Yes
N	1962	1383	1961	1382
Heterogeneity Test 2: Family Education Level				
	Low	**High**	**Low**	**High**
Livelihood capital	0.241 ***	0.368	0.673 ***	0.718
	(0.069)	(0.229)	(0.194)	(0.439)
Control variables	Yes	Yes	Yes	Yes
N	2867	476	2867	476
Heterogeneity Test 3: Regional Difference					
	East	**Centre**	**West**	**East**	**Centre**	**West**
Livelihood capital	0.386 **	0.291 **	0.173 *	0.940 **	0.694 **	0.498 *
	(0.125)	(0.134)	(0.097)	(0.320)	(0.327)	(0.271)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
N	1093	928	1322	1093	928	1322

Note: (1) * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. (2) The reported marginal effect is the average marginal effect of variables.

4.5. Robustness Tests

In this paper, the method of replacing independent variables and models is selected for the robustness test. Table 5 shows the robustness test results.

Robustness test 1 (Replace independent variables). The Pentagon livelihood capital framework proposed by DFID is selected—in which livelihood capital excludes psychological capital and only consists of five other types of capital—and the livelihood capital total evaluation value is calculated. The results of robustness test 1 show that livelihood capital affects *whether entrepreneurship* and *intensity of entrepreneurship* positively, and the effect is significant at the 1% level. The average marginal effects are 0.243 and 0.626. Financial capital affects *whether entrepreneurship* and *intensity of entrepreneurship* of rural households positively, and the effect is significant at the 1% level. These findings are in line with the argument in the previous section, showing that the hexagonal livelihood capital framework has a robust effect on rural households' entrepreneurship.

Table 5. Robustness test results.

	Robustness Test 1: Replace Independent Variables							
	Logit				Tobit			
Variables	Whether Entrepreneurship				Intensity of Entrepreneurship			
	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect
Livelihood capital	4.489 *** (1.169)	0.243 *** (0.064)			4.471 *** (1.203)	0.626 *** (0.168)		
Natural capital			5.862 (4.649)	0.316 (0.251)			6.755 (4.463)	0.945 (0.624)
Material capital			2.425 (4.703)	0.131 (0.254)			4.126 (4.517)	0.577 (0.632)
Financial capital			6.550 *** (1.628)	0.353 *** (0.088)			6.480 *** (1.715)	0.907 *** (0.239)
Human capital			−6.770 (11.175)	−0.365 (0.603)			−5.770 (10.758)	−0.807 (1.505)
Social capital			1.977 (2.172)	0.107 (0.117)			1.533 (2.142)	0.215 (0.300)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3346	3346	3346	3346	3346	3345	3345	3345
Prob > chi^2	0.0000		0.0000		0.0000		0.0000	
pseudo R^2	0.1173		0.1199		0.0935		0.0958	

	Robustness Check 2: Exclude Observations with Abnormal Age of Household Head							
	Logit				Tobit			
Variables	Whether Entrepreneurship				Intensity of Entrepreneurship			
	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect	Regression Coefficient	Marginal Effect
Livelihood capital	5.267 *** (1.336)	0.339 *** (0.087)			5.259 *** (1.356)	0.787 *** (0.202)		
Natural capital			4.423 (5.389)	0.284 (0.346)			5.660 (5.110)	0.847 (0.764)
Material capital			−0.927 (5.703)	−0.059 (0.366)			1.084 (5.371)	0.162 (0.804)
Financial capital			6.733 *** (1.883)	0.432 *** (0.121)			6.413 *** (1.932)	0.960 *** (0.288)
Human capital			−3.279 (12.806)	−0.211 (0.822)			0.261 (12.095)	0.039 (1.810)
Social capital			4.301 * (2.498)	0.276 * (0.161)			4.117 * (2.439)	0.616 * (0.364)
Psychological capital			5.910 (4.365)	0.379 (0.281)			5.910 (4.169)	0.884 (0.623)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2310	2310	2310	2310	2310	2310	2310	2310
Prob > chi^2	0.0000		0.0000		0.0000		0.0000	
pseudo R^2	0.1094		0.1114		0.0856		0.0866	

Note: (1) * $p < 0.1$, *** $p < 0.01$. (2) The reported marginal effect is the average marginal effect of variables.

Robustness test 2 (Exclude observations with abnormal age of household head). To exclude the influence of household heads who are too old or too young on the research results and the validity of the sample data for households headed by too old or too young is questionable, samples with a head of household under 25 years old or over 60 years old are deleted, and logit and tobit regression are conducted. The results show that livelihood capital has significant effects on *whether entrepreneurship* and *intensity of entrepreneurship* at the level of 1% and the average marginal effects are 0.339 and 0.787. Financial capital affects *whether entrepreneurship* and *intensity of entrepreneurship* significantly at the 1% level. These findings are consistent with the above conclusion, indicating that the evaluation method selected in this paper is robust.

5. Discussion

This paper mainly studies how livelihood capital influences rural household entrepreneurship and its mechanism of action, to expand theory and practice and guide exploration of this topic. From a theoretical perspective, studies on the influencing factors of entrepreneurship in China and other countries are mainly at the individual level of rural households, family level, and community level. Existing studies mainly focus on gender, risk appetite, and educational background. The study found that being male, having a strong risk appetite, and having a high level of education can effectively promote entrepreneurial behavior [33,40,58]. Research at the family level mainly includes studies of the quality of labor force and family wealth accumulation, and higher labor force level and sufficient wealth accumulation are important driving factors for rural household entrepreneurship [31,32]. The community level mainly includes human relations, social status, and geographical relations. When rural households have good social networks and social status, the tendency of entrepreneurship and the possibility of success are increased [34,38,59], and there is a lack of comprehensive analysis of the factors that affect these three aspects. Livelihood capital, as a foundation for the livelihood of the rural household, comprehensively reflects the current state of the rural household's life and future development potential, and the comprehensive development of the individual, family, and social factors of a rural household. Therefore, this paper studies how livelihood capital affects entrepreneurial behavior and its mechanism of action. It enriches the theoretical research on rural households' entrepreneurship. Second, current international research on livelihood capital generally adopts the Pentagon livelihood capital framework proposed by DFID [7,13]. This paper considers the important role of rural households' life satisfaction and degree of confidence in the future as psychological capital in the livelihood capital analysis framework, and a hexagonal analytical framework is constructed to comprehensively evaluate livelihood capital. It is a good complement to related studies and expands the boundaries of livelihood capital framework research. Finally, domestic and foreign scholars' research perspectives on livelihood capital mainly include the livelihood strategy choice of rural households [15,18], income level [12,22], and behavioral models [14,25]. There is a paucity of literature on how livelihood capital affects rural households' entrepreneurship. In addition, the heterogeneous effect is analyzed by comparing the household head's gender, family education level, and regional differences, thus deepening theoretical research on livelihood capital. It expands the research boundary of livelihood capital and rural household entrepreneurship, which has important theoretical significance.

At the practical level, first of all, based on the "hexagon" livelihood capital framework, this article analyzes sub-capital and total capital stock of livelihood and compares household head's gender, family education level, and regional distribution of livelihood capital stock, which play significant roles in clarifying the current situation of rural households' livelihood capital, further improving the sustainability of livelihoods and implementing relevant measures. Second, studying how livelihood capital influences rural household entrepreneurship and its mechanism of action makes it clear that livelihood capital, especially financial capital, is an important factor in promoting rural household entrepreneurship, and rural households' entrepreneurship enthusiasm needs to be improved. It is of great significance for further formulating policies to increase rural households' financial capital and overall livelihood capital level, thus enhancing rural households' entrepreneurship enthusiasm and feasibility effectively. In addition, heterogeneity analyses show that livelihood capital affects *whether entrepreneurship* and *intensity of entrepreneurship* of female-headed rural households significantly. Livelihood capital can significantly promote the entrepreneurial behavior and entrepreneurial intensity of rural households with lower education levels. The impact of livelihood capital on rural household entrepreneurship presents a decreasing distribution pattern from east to the middle to west. These studies and the main conclusions provide a theoretical basis for improving the pertinence and differentiation of entrepreneurship policies, and a clear direction and implementation path for further improving policies related to entrepreneurship, promoting the realiza-

tion of the goal of national entrepreneurship and the transformation and upgrading of agricultural modernization.

This study has the following limitations. In the construction of a livelihood capital framework, a unified "hexagonal" index system has not been implemented. The index system constructed in this paper by referring to previous studies is inevitably biased, and the comprehensiveness and accuracy of the measurement of livelihood capital are limited. Constructing a unified framework for livelihood capital analysis would be a useful supplement and enrichment to the related literature. In addition, to investigate the link between livelihood capital and rural household entrepreneurship, this paper mainly uses baseline and heterogeneity analyses, without performing further in-depth analysis. Future studies can aim to conduct a threshold test and examine the influence mechanism and spatial spillover effect to better grasp the degree and path of the impact of livelihood capital on rural household entrepreneurship, which would extend and deepen the literature in this area. Future research of this kind could provide useful guidance and reference for further improving relevant policies and practices related to entrepreneurship. It also has important theoretical and practical significance for changing rural households' livelihoods and poverty vulnerability and accelerating the transformation of rural households' modernization and livelihood strategy.

6. Conclusions and Suggestions

6.1. Conclusions

This paper mainly calculates the level of rural households' livelihood capital and sub-capital based on CFPS data in 2018, and explores the heterogeneity of the impact and role of livelihood capital and sub-capital on rural households' entrepreneurship, to provide the empirical basis and decision-making reference for further improving the level of rural households' livelihood capital, promoting the sustainable development of rural households' livelihoods, and improving the support and guarantee policies for rural households' entrepreneurship. This paper mainly applied the entropy weight method, baseline regression, and heterogeneity analysis to study how livelihood capital influences rural households' entrepreneurial behavior. We draw the following conclusions: (1) The sub-capital weight order of livelihood is as follows: Financial capital (0.413) > Social capital (0.214) > Human capital (0.109) > Material capital (0.102) >Natural capital (0.098) > Psychological capital (0.063), indicating that financial capital data shows the greatest internal variation, followed by social capital, human capital, material capital, natural capital, and psychological capital data. The value distribution of rural households sub capital is uneven, and the order, from the largest to the smallest, is Natural capital (0.022), Social capital (0.020), Material capital (0.017), Financial capital (0.014), Psychological capital (0.014), and Human capital (0.012). The large weight of financial capital and the small value evaluation indicate that rural households' financial capital has a greater impact on the level of livelihood capital and its level is generally low. Improving the level of rural households' financial capital is an important direction to promote the sustainable development of rural households' livelihoods. Female-headed households have higher psychological capital. Highly educated households have higher human capital, as well as financial and social capital. The value of psychological capital decreases in the order of east, center, and west, while the financial capital shows an increasing distribution pattern of "east-center-west". Analyzing the distribution level of rural households' livelihood capital from different perspectives can not only improve the depth of research on livelihood capital but also provide an effective reference for the differentiated implementation of livelihood capital-related policies. (2) From the baseline regression results, we find that livelihood capital can significantly promote the occurrence and *intensity of entrepreneurship*, financial capital plays a basic role in promoting entrepreneurship among rural households. Based on clarifying the positive impact of livelihood capital on rural household entrepreneurship, further grasping the key role of financial capital is an important discovery to promote the occurrence of rural household entrepreneurship and the enhancement of entrepreneurial intensity.

(3) Heterogeneity analysis results show that livelihood capital affects *whether entrepreneurship* and *intensity of entrepreneurship* of female-headed families significantly. Livelihood capital can significantly promote the entrepreneurial behavior of rural households with lower education levels. The impact of livelihood capital on rural household entrepreneurship presents a decreasing distribution pattern from east to the middle to west. Livelihood capitalplays a stronger role in promoting rural households' entrepreneurship in regions with a higher economic development level. To explore the heterogeneity of the impact of livelihood capital on peasant household entrepreneurship from the perspectives of the gender of household head, family education level, and regional differences, based on enriching existing research results, can contribute to improving the pertinence and effectiveness of rural household entrepreneurship policies.

6.2. Policy Suggestions

To improve the sub-capital and total capital stock of livelihood, realize sustainable livelihoods for rural households, encourage rural households to engage in entrepreneurship, and implement rural revitalization strategies effectively, policy suggestions are put forward as follows:

(1) Strengthen guidance to increase the financial capital of rural households. Firstly, credit should be increased through special financial allocation and credit incentives, which can enhance the financial availability of rural households. Secondly, financial knowledge popularization lectures and typical case sharing should be held for rural households to improve their financial literacy and participation in the financial market. Finally, relying on financial technology to improve credit rating and simplify credit procedures, to ease the credit constraints of rural households, especially female-headed households.

(2) Improve the penetration degree and pertinacity of the policies related to rural household entrepreneurship. On the one hand, we should be good at cooperating with the village committees to publicize entrepreneurship policies and provide professional and diversified employment skills training for rural households to improve the penetration of the policies. On the other hand, we also should implement precise entrepreneurship policies for rural households according to different educational qualifications, different regions, and different genders of households to improve the pertinence of the policies.

(3) Take multiple measures to consolidate the livelihood foundation of rural households. First of all, continue to improve the rural medical treatment, road traffic, green sanitation, and other infrastructure construction, especially to continue to promote the construction of "broadband rural", then improve the material capital and life satisfaction of rural households. Secondly, the village committees are encouraged to provide intermediary services for land transfer, provide information for both sides of land transfer, and integrate and revitalize rural idle land resources. Lastly, vocational skills training should be provided for regional residents through subsidies and free training, and at least one public vocational college should be set up in each county to improve the human capital of rural households.

At the same time, it is far from enough to get relevant policies and suggestions only. How to better promote the implementation of policies is more critical, which is also an important direction for further research in the future.

Author Contributions: F.W.: designed the conceptual framework of the article, article writing guidance, and project administration. J.M.: analyzed the data and drafted. Y.L.: interpreted the results and drafted. Q.C.: reviewed, submitted, and revised the article. All authors have read and agreed to the published version of the manuscript.

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