Research on Consumption Level of Rural Residents Using the Sustainable Livelihoods Framework

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Abstract:

From poverty alleviation to rural revitalization, the living conditions of rural residents in poverty-stricken areas have undergone earth-shaking changes. Consolidating such achievements is an important content of our country's future poverty alleviation work. Under the framework of sustainable livelihoods, this paper uses the generalized least squares (GLS) method to analyze the consumption level of rural residents in poverty-stricken areas from the aspects of natural capital, physical capital, and social capital. The research shows that the natural capital, physical capital, human capital, financial capital and psychological capital in the livelihood capital of rural residents have a significant positive impact on their consumption level, but the social capital has no significant impact on the consumption level.

Keywords: *Sustainable livelihoods framework, Consumption level, Livelihood capital*

I. INTRODUCTION

In 2020, China completes the building of a moderately prosperous society in all respects, and has made remarkable achievements in poverty reduction. Nonetheless, it is worth noting that to promote common prosperity, continue solving the relative poverty in rural areas and consolidating the achievements of poverty alleviation are still necessary. At present, the academic field has gained abundant research achievements on poverty reduction. Scholars have focused research on aspects such as the poverty evaluation standards, effectiveness evaluation of poverty alleviation policies, poverty alleviation fund allocation and utilization efficiency, etc. These research perspectives are mostly from the macro level such as government and poverty alleviation counties. There are few literatures on the consumption level of poor peasant households that are done through the micro perspective of peasant households. The Sustainable Livelihoods Framework is a method for analyzing a series of factors related to poverty in order to eliminate poverty for the general poor population. Scholars mainly use the sustainable livelihoods framework to analyze the main influencing factors and causes of poverty in a country or region or the impact of policies on the sustainable livelihoods of peasant households, so as to explore poverty reduction strategies and improve the poor peasant households' self-development ability and risk-resistance [1-2], and to accelerate poverty governance. The sustainable livelihoods framework can analyze the consumption

level of peasant households at the micro level, and incorporate the inherent requirements of peasants' sustainable livelihoods under the goal of high-quality poverty alleviation. Under this framework, this article studies the impact of livelihood capital on the consumption level of peasant household, providing certain practical significance for ameliorating poor peasant households' living conditions.

II. THEORETICAL BASIS

Sustainable livelihoods are the capabilities, incomes and funds that people have in order to improve their long-term living conditions. Livelihood capital can be divided into natural capital, physical capital, financial capital, human capital and social capital. In addition, in order to better analyze the consumption level of rural residents in poverty-stricken areas, this article also adds psychological capital as one of the influencing factors.

Natural capital refers to the area and quality of a household's existing farmland and forest land. When the land is larger and has better quality, it indicates that the household's financial situation is better, which in turn affects their consumption level. Physical capital refers to the family's living area, road conditions, and the quantity of household appliances. The living area of a family and the number of appliances can reflect the material conditions of a family, while the road conditions in the village can reflect the overall material conditions of the respondent's residence. The better the material conditions, the higher the consumption level. Financial capital refers to the annual household income, difficulty to get loan, and quantity of social security types. Income determines consumption. The easier it is to get loans; the more optimistic people are about consumption. And, the more types of social security, which means that family life is more secure, the more positively it affects consumption. Human capital includes education level, family size, and health status. The higher the level of education, the greater the possibility of obtaining high income. The size and health of the family have an important impact on the family's income and expenditure, which furtherly affects consumption. Social capital refers to the respondents' relationship with relatives, friends, village cadres, and the frequency of community-organized events. According to the principle of reciprocity, the better people develop in social relations, the more resources they gain, so they get to promote personal financial situation and consumption. Psychological capital refers to whether respondents can participate in elections fairly and whether they think their living conditions have improved. When residents can participate in elections fairly and believe that their living conditions will improve, they will have a positive psychological condition and have higher expectations for the future, which will promote consumption.

III. MODEL CONSTRUCTION, DATA STATEMENT, AND VARIABLE SELECTION

3.1 Model Construction

Based on the impact of natural capital, physical capital, human capital, financial capital, social capital, and psychological capital on the consumption level of rural residents, the consumption level regression equation is constructed as the following:

$$Y = c_1 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \varepsilon$$

Among them, the dependent variable is consumption level Y, and the independent variables are natural capital X_1, physical capital X_2, human capital X_3, financial capital X_4, social capital X_5, and psychological capital X_6. Control variables include respondent's gender: male=0, female=1; respondent's age (years old): 18~24=0, 25~34=1, 35~44=2, 45~54=3, 55~64=4, above 65=5; Occupation: Public Service Units=0, Enterprises=1, Agriculture=2, Others=3.

3.2 Data Statement and Statistical Description

The data in this article comes from questionnaires collected from Zhen'an County, Shangluo, Shaanxi in 2021. Zhen'an County is affiliated to Shangluo City, Shaanxi Province, and is located in the southeast of Shaanxi Province. It is rich in natural resources such as water, minerals, vegetation, and animal resources. Zhen'an has always been one of the pioneers in Shaanxi Province's poverty alleviation work. At the time of this research, a total of 660 questionnaires were distributed to residents of key ecological function areas in Zhen'an County, and 651 valid questionnaires were collected, with an effective rate of 98.64%.

As shown in Table I, among the survey respondents, there are 388 males, accounting for 59.60%, and 263 females, accounting for 40.40%, with slightly more males than females. In terms of age, the respondents mainly fall in the 25-54 years old range, with a total of 498 people, accounting for 76.5%, of which 184 were 35-44 years old, accounting for 28.26%. In terms of education level, most of the respondents have an educational background that is high school or below, which is 554 people. Among the majority, 228 respondents have junior-high level education, accounting for 35.02%. The undergraduates and above have a relatively small group: a total of 97 people, 89 of which are undergraduates, altogether accounting for 14.9%. In terms of occupation, most respondents are in agriculture and others, 229 and 235 respondents, accounting for 35.17% and 36.10%, respectively. In terms of family size, most respondents have five or fewer people in their homes, a total of 455 people, accounting for 78.18%, of which 203 people have four people, accounting for 31.18%.

Table I. Statistical description of sample data

Statistical indicator	Classification indicator	number of people	Percentage	Classification indicator	number of people	Percentage
Gender	Male	388	59.60%	Female	263	40.40%
Age	18-24	97	14.90%	45-54	145	22.27%
	25-34	169	25.96%	55-64	48	7.37%
	35-44	184	28.26%	65 and above	8	1.23%
Education Level	Primary School and below	172	26.42%	Undergraduate	89	13.67%

	Junior High	228	35.02%	Graduate and Above	8	1.23%
	Highschool	154	23.66%			
Occupation	Public Service Units	21	3.23%	Agriculture	229	35.17%
	Enterprises	166	25.50%	Others	235	36.10%
Family Size	1-3 people	147	22.58%	6 people	105	16.13
	4 people	203	31.18%	7 people and above	37	5.68%
	5 people	159	24.42%			

3.3 Variable Selection

This paper adopts the 5-point Likert scale to define the capability analysis of local residents in the national key ecological function areas. Among them, the values 1 to 5 of the first variable of natural capital (x_{11}) indicate 0 mu (mu, a unit of area (=0.0667 hectares)), less than 1 mu, 1-2 mu, 2-3 mu, 4 mu and above, respectively. 1 to 5 of the second variable of natural capital (x_{12}), the second variable of physical capital (x_{22}), and the first two variables of social capital (x_{51}, x_{52}) represent bad, not good, average, good, and very good. 1 to 5 of the first variable of physical capital (x_{21}) indicate 0.1, 0.1 to 0.4, 0.41to 0.8, 0.81 to 1, and above 1, respectively. 1 to 5 of physical capital variable (x_{23}), financial capital (x_{43}), and social capital (x_{53}) represent quantity 0, 1, 2, 3, and 4 or more. 1 to 5 of human capital (x_{31}) represent the primary school and below, junior high school, high school, undergraduate, and master and above. 1 to 5 of human capital (x_{32}) represent 1 to 3 people, 4 people, 5 people, 6 people, and 7 people and above. The variables of financial capital (x_{41}) are less than 5,000-yuan, 5,000-10,000-yuan, 10,000-20,000-yuan, 20,000-40,000 yuan, and more than 40,000 yuan. Another group of financial capital variables(x_{42}) includes very difficult, not easy, general, easy, and very easy. Psychological capital (x_{61}, x_{62})'s 1 to 5 means strongly disagree, disagree, general, agree, and strongly agree, respectively. 1 to 5 of consumption level (y) indicate more than 59%, 50-59%, 40-50%, 30-40%, and below 30%, respectively. The 17 core questions of the 651 questionnaires are statistically described and shown in Table II below.

Table II. Variable Definitions and Statistical Descriptions

Category	Variable	Variable Definition	Minimum	Max	Average	Standard Deviation
Natural Capital x_1	x_{11}	the Area of the household's existing farmland and forest land	1	5	3.427	1.148
	x_{12}	Quality of the household's existing farmland and forest land	1	5	2.896	0.812
Physical Capital x_2	x_{21}	Household's Living Area	1	5	2.719	0.904
	x_{22}	Road Condition in the Village	1	5	2.679	1.019
	x_{23}	Appliances Quantity	1	5	3.358	1.122
Human Capital	x_{31}	Education Level	1	5	2.283	1.038
	x_{32}	Family Size	1	5	4.469	1.241

x$_3$	x$_{33}$	Whole family's health conditions	1	5	3.247	1.151
Financial Capital x$_4$	x$_{41}$	Annual Household Income	1	5	3.276	1.141
	x$_{42}$	Difficulty to Get Loan	1	5	2.432	0.979
	x$_{43}$	quantity of social security types	1	5	2.392	0.940
Social Capital x$_5$	x$_{51}$	relationship with relatives and friends	1	5	3.487	0.926
	x$_{52}$	relationship with village cadres	1	5	3.266	0.854
	x$_{53}$	frequency of community-organized events(monthly)	1	5	2.227	1.175
Psychological Capital x$_6$	X$_{61}$	participate in elections fairly and equally	1	5	3.260	0.942
	X$_{62}$	living conditions have improved	1	5	3.217	0.846
Consumption Level	y	Food purchase in total expenditure	1	5	2.825	0.965

IV. Analysis of Consumption Level Regression Results

This paper uses Feasible Generalized Least Squares (FGLS) to perform regression analysis on the consumption level equation and adds control variables to analyze the influence of control variables on consumption levels. The results are shown in Table III.

As can be seen from Table III, except for social capital (X_5), the other influencing factors have passed the significance test, which means that they have a significant impact on the consumption level. Among them, the value of natural capital is the largest and the degree of influence is the biggest, followed by psychological capital. Natural capital (X_1) has a significant positive impact on the consumption level, which indicates that the larger the area and the better quality of the existing farmland and forest land of residents, the higher the consumption level. Physical capital (X_2) has a positive impact on the consumption level, that is, the larger the residential area, the better the road conditions, and the more household appliances, the higher the consumption level. The human capital (X_3) also has a positive impact on the level of household consumption, that is, a high level of education, a prosperous family population, and good health significantly improve the level of household consumption. The correlation between financial capital (X_4) and the level of residents' consumption is also positive. Higher annual household income, easier loans, and having more types of social security can improve residents' consumption levels. Psychological capital (X_6) has a significant positive impact, that is, positive psychological factors will increase residents' consumption levels.

From the regression results in Table III, it can be seen that the three control variables have passed the significance test. The gender variable coefficient is negative, that is, the consumption level of men is higher than that of women. So is the age variable coefficient, which means that the consumption levels decrease as the age grows. The occupation variable coefficient is positive, that is, the consumption levels vary in different jobs.

Table III. Regression results of consumption level equation

Variable	Equation(1)	Equation(2)	Equation(3)	Equation(4)	Equation(5)	Equation(6)
X_1	10.371*** (3.221)	10.273*** (3.316)	10.349*** (3.215)	10.463*** (3.356)	10.199*** (3.241)	8.221* (2.118)
X_2		2.750*** (3.331)	1.054***(3.286)	1.584*** (3.366)	2.019*** (3.462)	3.156** (2.316)
X_3			3.168*** (3.281)	3.268*** (3.611)	3.224** (2.712)	4.311*** (3.703)
X_4				2.956*** (5.234)	2.054* (2.145)	1.432*** (3.105)
X_5					-2.947 (-0.709)	-1.215 (-0.289)
X_6						4.698*** (3.231)
Z_1	-13.256** (-2.774)	-14.351*** (-3.461)	-14.157*** (-3.247)	-13.816** (-2.812)	-13.952** (-2.823)	-14.264** (-2.721)
Z_2	-2.375* (-2.267)	-2.843* (-2.138)	-1.621* (-2.259)	-1.693** (-2.717)	-1.261* (-2.059)	-1.654* (-2.491)
Z_3	9.514*** (3.261)	9.558*** (3.291)	9.381*** (3.381)	9.168*** (3.547)	9.372*** (3.229)	9.623** (2.906)
R^2	0.697	0.630	0.717	0.768	0.855	0.762

Note: "***", "**", and "*" indicate significance at significant levels of 1%, 5%, and 10%, respectively.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

Taking Zhen'an County, a national key ecological function area in Shaanxi Province, as an example, this research investigates, studies, and summarizes the natural capital, physical capital, human capital, financial capital, social capital, and psychological capital of local residents. The influence of various resources of residents on the local consumption level is analyzed. This research shows:

(1) The natural capital, physical capital, human capital, financial capital, and psychological capital in the livelihood capital of rural residents have a significant positive impact on their consumption level. Social capital does not pass the significance test, and the impact on consumption level is not significant.

(2) The amelioration of the natural environment, the improvement of material life, the elevation of quality of the working population, a good financial environment, and a positive psychological state all have positive effects on the social consumption level of rural residents. The consumption level can be further elevated by improving these factors, so as to promote the high-quality development of society.

(3) Variables such as gender, age, and occupation also have significant impacts on the consumption level. In general, men have higher consumption levels than women. Relevant measures should be implemented to increase the consumption level of women in a targeted manner. The consumption level will decrease with the increase of age, the consumption subsidies for the elderly should be appropriately increased, and the living security should be improved. The consumption level also varies in occupations. The consumption level of "other" occupations is relatively low, and the employment of local residents should be promoted to increase the consumption level.

5.2 Policy Suggestions

In order to improve the consumption level of residents, we put forward the following suggestions:

(1) Effectively combine economic development with environmental preservation and choose the path of sustainable development. Establish the concept of "governing pollution, maintaining water and soil, adhering to both quantity and quality, and combining use and maintenance". Enhance residents' awareness of environmental preservation, strengthen the importance of natural capital, and improve the natural environment. Strengthen the protection of farmland and forest land, and improve their quality, so as to increase people's consumption level while improving the natural environment.

(2) Formulate relevant policies to enhance the physical capital of local residents, implement social security measures and subsidy policies in line with local conditions, and comprehensively build rural modernization. By increasing capital productivity, the level of consumption will be further improved, forming a virtuous circle of production and consumption. Through improving local infrastructure construction and the living conditions of residents, it will reasonably and effectively promote the high-quality development of consumption level.

(3) Increase investment in basic education and promote the improvement of human capital. On the one hand, it can reduce the education cost of local residents and improve the quality of the population. On the other hand, it can also provide production technology or practical skills training based on the needs of residents, so as to improve their capabilities in information acquisition, risk prediction, financial decision-making, and professional skills.

(4) Increase the financial capital of peasant households and promote their consumption level. Financial capital is also an important factor affecting the level of consumption. By increasing the per capita income level and employment rate of local residents and inspiring the working motivation of residents, it can effectively promote the level of residents' consumption. For the poor, the government can increase per capita income, improve people's living conditions and meet people's needs for a better life by implementing scientific and effective subsidy policies.

(5) Develop residents' psychological capital, proactively organize and carry out various social

activities, and guide residents to actively participate to explore their potentials, so that people can gain a sense of happiness and satisfaction in the progress, which can enhance consumer confidence, and thus promote consumption.

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