



Research on the evaluation and optimization of the effect of rural education poverty alleviation: Based on the field survey in Youyang County, Chongqing, China

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ABSTRACT

Purpose: This study explores the effect of education poverty alleviation policy under the precise poverty alleviation model, aiming to provide decision-making suggestions for relative poverty governance and risk prevention of returning to poverty.

Design/Methodology/Approach: Using the methods of investigation, statistical analysis and institutional analysis, this paper explores the effect and optimization path of educational poverty alleviation in Youyang County, Chongqing.

Findings: Rural poor households primarily benefit from government policies on education, as well as subsidies and allowances for students, in their efforts to alleviate educational poverty. However, these households may lack awareness of their own potential for skills training and employment conversion. Additionally, satisfaction with educational poverty alleviation efforts varies among rural households with differing income sources, education levels, and types of poverty. The most desired improvements in educational poverty alleviation among rural poor households include enhancing teaching quality, increasing educational awareness, reducing educational costs, and promoting compulsory education.

Conclusion: From the perspective of poor households' perception, this paper systematically reveals the performance characteristics and needs identification of educational poverty alleviation, and then puts forward policy suggestions for optimizing the performance of educational poverty alleviation.

Research Limitations/Implications: Due to time and funding constraints, the number of research samples for this paper needs to be increased to improve the universality of the research conclusions.

Practical Implications: The research findings can provide theoretical and practical references for exploring education to block the inter-generational transmission of poverty and scientifically designing educational poverty alleviation policies.

Contribution to Literature: It enriches and expands the evaluation perspective, index system, and optimization path of the effect of education poverty alleviation policy.

Keywords: Demand identification, Educational poverty alleviation, Effect evaluation, Optimization path, Perception perspective, Targeted poverty alleviation.

1. INTRODUCTION

As a worldwide problem, poverty is the result of unbalanced development and the accumulation of many factors, such as economy, politics, culture, history, ecology, and so on. Governments around the world are carrying out different anti-poverty practices to reduce poverty. The poverty governance path of the Chinese government has gone through a transformation from the "blood transfusion" type of poverty alleviation (PA) through the reform of the economic system and the expansion of project investment to the three-dimensional "hematopoietic" type of PA through education, culture, industry, finance, and ecology. It has gone through a transformation from participatory development for poverty relief to accurate identification of poverty alleviation targets, accurate assistance, and a precise poverty alleviation model based on precise management (Yuan & Jiang, 2020). And the key to poverty alleviation lies in supporting intelligence. Compared with the dynamic and changing external causes

of poverty, the accumulation of human capital and the endogenous motivation to overcome poverty can be continuously improved and developed through education. Poverty alleviation through education (PATE) is the most sustainable way to eradicate poverty and prevent its return in many poverty alleviation practices. China's [Ministry of Education \(2016\)](#) issued the "13th Five-Year Plan" for PATE, clearly integrating the "precision concept" into PATE, forming the idea of "targeted PATE", and further summarizing and deepening the strategic idea of PATE. With the implementation of PATE, the impact of PATE on rural areas and the effect of PA on rural poor households have been highly discussed by the Chinese government, academia, and society. A systematic study of the effect and improvement path of rural education PA against the background of targeted PA is of practical significance for testing the performance of education poverty relief policies and gaining insight into the existing problems in education poverty alleviation.

Youyang County of Chongqing, once one of the 11 national poverty-stricken counties in China, is located in the southeast of Chongqing and in the hinterland of the Wuling Mountain area. In recent years, the Youyang County Government has actively responded to the national call for targeted poverty alleviation and achieved remarkable results. However, due to geographical and historical factors, the county has a wide area of poverty, a deep degree of poverty, and a high rate of poverty return. The sustainable development of targeted PA has become the biggest weakness in building a well-off society in an all-round way. Based on the basic situation of poor households in Youyang County, Chongqing, and the survey of their satisfaction with PATE, this paper learns the characteristics and facts of PATE in Youyang County and obtains the real needs of different types of poor households so as to promote the continuous exaltation of PA performance in Youyang County and the effective carrying out of targeted PA and Rural Revitalization strategies.

2. LITERATURE REVIEW

2.1. Relationship between Education and Poverty

Education is equivalent to a kind of human capital or resource. When the level of individual education is improved, the accumulation and quality of human capital will also be improved, and the ability of individuals to resist the risk of relative poverty will also be enhanced. As the permanent cure for blocking the inter-generational transmission of poverty (ITP), education alleviates the occurrence of poverty and helps poor groups out of poverty ([Yuan & Li, 2021](#)), and higher education provides opportunities for social mobility and high living standards ([Qazi, Raza, Jawaid, & Karim, 2018](#)). [Behrman \(1990\)](#) believes that education can improve labor productivity, thereby increasing income and alleviating poverty. [Liu \(2016\)](#) pointed out that "helping the poor first and supporting the intelligent" determines the basic status of PATE. Some scholars' empirical studies have found that improving the level of individual education can largely reduce the incidence of relative poverty ([Liu, Zhang, & He, 2007](#)) and play a role in reducing poverty by increasing educational manpower and social capital and promoting relatively poor groups to engage in non-agricultural work ([Zuo & Lu, 2020](#)). From this point of view, education alleviates the occurrence of poverty and promotes the overall development of individuals. Another view is that poverty restricts the development of education. Compared with the developed regions, the relatively backward regions still lack material, educational, and other resources, which has a certain restriction on talent cultivation, so it has caused the cycle of poverty to a certain extent. [Kuznets \(1955\)](#), a western scholar, put forward the "inverted U" theory. He believed that there were different changes in education and income distribution at different stages. [Yuan \(2021\)](#) believed that it is the relatively low level and quality of education in the relatively impoverished population and regions that definitely affect the country's overall education modernization. [Liu \(2020\)](#) found that poor areas still face some problems, such as insufficient education funds and teachers. Therefore, in the process of PATE, in order to enhance the quality of the whole population in poverty-stricken areas, it is necessary to attach importance to the integrity and sustainability of poverty alleviation through education ([Du, 2017](#)).

2.2. Effect Evaluation of PATE

The effect of PATE is the result of multiple factors. Scholars' evaluation of the effect of PATE mainly focuses on the following: First, formulating targeted and feasible educational poverty relief policies can help education in relatively distressed areas. The top-level design and the implementation of policies have a direct impact on the results of PATE. For example, the United States has set up a special appropriation bill for rural education, the Rural Education Achievement Project ([Rural Education Achievement Program, 2002](#)). In terms of China's "National Training Program", more than 5.4 million rural teachers and campuses have been trained, which has promoted the

development of rural teachers (Ministry of Education, 2018). Judging from the specific implementation effects of the education poverty relief policy, multidimensional educational poverty relief policies such as diversified investment in material capital, cultivation of human capital, and assistance to social mobility have blocked the intergenerational transmission of poverty (Dai & Wang, 2022). Zhang and Shi (2017) pointed out that China initially formed a broad and comprehensive policy framework for PATE. However, the evaluation of PATE pays more attention to macro-policy research and lacks micro-empirical research (Xie, 2012). In addition, Zhong (2019) found that the policies, concepts, and promotion methods of education targeted at poverty alleviation were not accurate enough. From this point of view, in order to promote the orderly development of PATE, the policy of PATE should continue to give consideration to fairness and benefit to the poor.

Second, the education poverty alleviation model implements different poverty relief models based on the reality of education poverty in various regions. Zhang (2007) believes that participatory poverty alleviation and development are optimal models. Yuan and Jiang (2020) explored and formed the "Ningxia model", "Gansu model", "Qinghai model", "Xinjiang model," and "Southern Shaanxi model" in the practice of PATE in northwest minority areas, helping to promote the distinctive PATE system. Qu (2020) reviewed the four-stage evolution of China's "poverty relief model of vocational education". In the practice of PATE in the new era, Xu and Qiang (2018) proposed the idea of "group-type" educational talents to aid Tibet in response to the new model of counterpart aid to Tibet through education. In view of the practical demand for economic and educational poverty alleviation, Hainan Province has explored the "Trinity" educational poverty alleviation model (Fan & Chen, 2017). Chen and Chen (2017) explored a new model of targeted PA in poverty-stricken areas led by education information. At present, there is still a convergence phenomenon in the education poverty alleviation model. Scholars still need to continue to go deep into the education poverty alleviation areas, explore the education poverty relief model adapted to local conditions, and slow down the intergenerational transmission of regional education poverty.

Third, summarize the experience of PATE. China's PATE has provided China's experience and China's programs for the cause of poverty reduction in the world. Based on the needs of national conditions, we should always adhere to the people-centered and national anti-poverty strategy-oriented concept of PATE (Yu & Zhao, 2020). The remarkable effect of PATE is to improve the education level in distressed zones through the cooperation of the government, the market, and society (Xiang, 2022). In addition, we have built a long-term mechanism for PATE. China first established the basic idea of "giving priority to intellectual poverty alleviation", and then adopted the way of precise assistance according to the demand of different regions and groups and formed a diversified education poverty alleviation model (Tang, Hu, & Tan, 2019). What's more, we have established a funding system for targeted PATE. China, in order to realize the government commitment of "not letting a child drop out of school due to poverty", has built an omnibearing financial aid system for distressed areas and people (Liang & Liang, 2020). The path of poverty relief through precision education has been implemented. Combine formal education with vocational education, adopt different education methods according to different situations, and carry out targeted education and poverty alleviation activities in a planned way (Liu & Zhu, 2021). Through combining targeted poverty alleviation, aspiration, and intelligence support, we can stimulate the endogenous motivation and sustainable development of the relatively poor.

2.3. Optimization Path of PATE

The optimization of PATE is a systematic project. First, enhance the strategic position of education in targeted PAs. Education for PA is a strategic focus of PA work, and it is a fundamental measure to block the ITP. We will implement a differentiated funding distribution system and establish an entry and exit mechanism for poor schools to guarantee the accuracy of poverty relief funds and targets (Zhang & Fu, 2016). Second, continuously stimulate the endogenous motivation of relatively poor groups (Dai, 2021). Research on PATE needs to take the cultural orientation of "people" into consideration and improve the ability of poverty-returning groups to extricate themselves from poverty independently so that they can have a sense of gain, happiness, and security (Zhou, Sui, & Wang, 2020). Third, improve the existing evaluation system for educational PA policies. Zhang and Shi (2018) constructed the performance index system of PATE through five dimensions. Fourth, continuously improving the dynamic monitoring system of PATE is an important way to effectively implement PATE (Wang & Li, 2021; Yu & Zhao, 2020). Through big data, "Internet+," and other technologies to accurately help poor groups (Wei, 2019), relatively poor areas can achieve high-quality economic and social development. Fifth, we should continue to improve the multi-dimensional long-term education poverty alleviation mechanism. Gather the forces of PATE,

build a large pattern of PATE with multi-party participation and collaborative promotion, and form a multidimensional and three-dimensional poverty alleviation mechanism through education (Liu, 2016). In general, scholars are still exploring innovative ways of PATE, consolidating the achievements of PA, and preventing the occurrence of systematic poverty return.

In the framework of China's poverty governance system, PATE is the core content, and the most fundamental driving force for poverty alleviation through education is the people's yearning for a better life. China's educational PA focuses more on precision education PA, which is precisely the Chinese wisdom and Chinese plan under the path of socialism with Chinese characteristics in the new era and has contributed Chinese experience and Chinese ideas to the global effort at reducing poverty. Especially for rural areas, education is the key factor in lifting them out of poverty. Education can alleviate the vicious circle of intergenerational poverty in rural areas and is of great importance for the sustainable poverty alleviation of farmers. The existing evaluation of the poverty alleviation effect of rural education is mainly based on the macro perspective, while research from the perspective of poor households' perception is relatively limited. Moreover, the study on the poverty relief effect of rural education is mostly qualitative research, and the quantitative research based on the actual survey data is less.

This paper will be set in the context of education-targeted PA. It will use Youyang County, Chongqing, as the research space and the rural poor households as the research objects. Based on the perception of different types of poor households, that is, the perspective of satisfaction, it will empirically evaluate the PA effect of rural education, identify the needs of poor households for PATE, and propose an innovative path system for PA through rural education.

3. SURVEY AREA, QUESTIONNAIRE STRUCTURE, AND TEST

3.1. Survey Area

Youyang Tujia and Miao Autonomous County is located in the southeast of Chongqing and has many ethnic minorities, a wide distribution of poor people, and a deep degree of poverty. The Youyang County Government actively responded to the call for targeted poverty alleviation. In 2016, 65 poverty-stricken villages in Youyang County were promoted, and the targeted poverty alleviation population reached 65700, an increase of 68.7% over the previous year. The poverty alleviation population increased significantly, leaving only 25000 poor people, a decrease of 68.7% compared with the previous year. The poverty alleviation effect was significant (Zhou, Huang, & Ren, 2018). However, due to geographical and historical factors, the county has a wide area of poverty, a deep degree of poverty, and a high rate of poverty return. The PA work in Youyang County is extremely complex, and the sustainable development of precise PA has become the biggest weakness in building a well-off society in an all-round way in the local area. Based on the basic situation of poor households in Youyang County, Chongqing, and the satisfaction survey of poor households on PATE, this paper learns the characteristic facts of PATE in Youyang County and gets accurate and effective needs from poor households so as to promote the performance improvement and sustainable development of PATE in Youyang County and effectively promote the implementation of the Targeted PA and Rural Revitalization Strategy.

3.2. Questionnaire Structure

The purpose of this survey is to understand the perceptions of poor households in PATE in Youyang County, Chongqing, with the aim of providing the basis for formulating scientific and reasonable improvement paths and schemes in the future. Therefore, it is necessary to deeply understand the actual feelings of poor households towards poverty alleviation through education and various services provided by the government and to understand the public's satisfaction with various services provided by the government.

As can be seen from Table 1, the framework specifically includes one primary indicator, namely, satisfaction with PATE, four secondary indicators, namely, satisfaction with poverty relief funds through education; satisfaction with poverty relief projects through education; satisfaction with poverty relief methods through education, satisfaction with poverty relief benefits through education; and 10 tertiary indicators. The three-level indicators of five types of individual education poverty relief satisfaction are: (1) Satisfaction with education poverty alleviation funds, including satisfaction with the investment of funds for PA in education, satisfaction with the supervision of education PA funds; (2) The satisfaction with educational poverty alleviation projects includes the satisfaction with the number of educational poverty relief projects and the satisfaction with the management of educational poverty relief projects; (3) The satisfaction of education PA methods, including the satisfaction of employment

training and employment PA for the transfer of surplus labor force, the satisfaction of modern distance teaching, the satisfaction of skill training organized by the government, and the satisfaction of the award, loan, attendance, subsidy and capital reduction system provided by the school; (4) Satisfaction with the benefits of PATE includes satisfaction with the coverage of PATE and satisfaction with the accuracy of PATE.

Table 1. Composition of satisfaction index system for rural PATE.

Primary indicator	Secondary index	Tertiary indicators	
Satisfaction with PATE	Satisfaction with education and poverty alleviation funds	Satisfaction with the investment of funds for poverty alleviation in education	
		Satisfaction with the supervision of education poverty alleviation funds	
	Satisfaction with education and poverty alleviation projects	Satisfaction with the number of educational poverty alleviation projects	
		Satisfaction with the management of the education poverty alleviation project	
	Satisfaction with the way education is used to alleviate poverty	Surplus labor transfer, employment training, and employment poverty alleviation satisfaction	
		Modern distance learning satisfaction	
		Satisfaction with government-organized skill training	
	Satisfaction with the benefits of PATE		Satisfaction with the award, loan, diligence, subsidy, and reduction funding system provided by the school
			Satisfaction with poverty alleviation coverage in education
			Satisfaction with the accuracy of education for poverty alleviation

The satisfaction degree of PATE is a subjective judgment of local residents on the matching degree between the education and poverty-alleviation related services provided by local governments and their own needs. This judgment has no clear dividing point in essence. Therefore, we used a Likert scale to divide the satisfaction of poverty alleviation through education into "very satisfied", "satisfied", "average", "dissatisfied" and "very dissatisfied". Based on the opinions of relevant experts, staff of the government poverty Alleviation Office, and poor households, we preliminarily designed a questionnaire for the survey. The questionnaire comprises four primary sections. The initial section entails an inquiry into the fundamental circumstances of impoverished household heads in Youyang County, Chongqing, encompassing family livelihood strategies, educational attainment of the labor force, family income structure, and political outlook, among others. The subsequent section comprises a study that evaluates the contentment levels of impoverished rural households with respect to poverty alleviation through education. This primarily encompasses their comprehension of policies pertaining to Poverty Alleviation through Education (PATE), their participation in PATE, their disposition towards PATE, the extent of assistance rendered by extant poverty alleviation policies through education, and their level of contentment with PATE. The third segment pertains to a survey of the requirements of rural poor households, which primarily encompasses the factors that contribute to poverty. The data is acquired through the utilization of inquiries posed to farmers, such as "What are your expectations regarding poverty reduction through education?" and "What is your current foremost priority?" The fourth segment comprises an evaluation of the involvement of impoverished rural households in poverty alleviation initiatives through education.

3.3. Research Process

This survey uses the methods of field survey and questionnaire survey to investigate the perceived performance of poor households on poverty alleviation through education and analyse, synthesise, compare, and summarise the data collected in the survey so as to provide regular knowledge for poverty alleviation through education. At the same time, we went deep into the rural poor families, talked with them face-to-face, and actively used the

knowledge of psychology, communication, and other disciplines to analyze their needs for PATE and put forward a new path for PATE based on practice. The survey site was Guanba village, Lixi Town, Youyang County, Chongqing, and 72 poor households were surveyed. The effective sample size was 60, and the effective rate was 83%.

3.4. Questionnaire Inspection

In the 72 questionnaires, there are 60 valid samples, and the effective rate is 83%. This paper further analyzes the reliability and validity of the questionnaire so as to guarantee the accuracy of the analysis.

The Cronbach α reliability coefficient is the most commonly used reliability coefficient at present, and its formula is: $\alpha = (k/(k-1)) * (1 - (\sum Si^2)/st^2)$. Where k is the total number of items in the scale, Si^2 is the intra-item variance of the score of item i , and st^2 is the variance of the total score of all items. As can be seen from the formula, α the coefficient evaluates the consistency between the scores of each item on the scale, which belongs to the internal consistency coefficient. This method is suitable for the reliability analysis of attitude and opinion questionnaires (scales). In this paper, this method is employed for reliability analysis, and the analysis results are as follows:

It can be seen from Table 2 that the coefficient of each item reaches 0.938 cronbach's α the greater the coefficient, the stronger the internal consistency. According to previous studies, cronbach's α If the coefficient is greater than 0.7, it can be considered that the consistency between items is good, so this survey has high internal consistency.

This paper employs the factor analysis method to analyze the validity of evaluation variables. Generally speaking, when the variance contribution rate of the extracted first principal component is greater than 0.5, the common factor can well explain the evaluation index.

Table 2. Cronbach's alpha coefficient of education poverty alleviation satisfaction scale.

Educational PA forms	Scale means if item deleted	Scale variance If item deleted	Corrected item total correlation	Cronbach's alpha if item deleted	Cronbach's alpha coefficient
Investment in poverty alleviation through education	28.73	33.148	0.823	0.928	0.938
Supervision of PATE funds	28.80	33.654	0.684	0.934	
Number of educational poverty alleviation projects	28.82	33.576	0.867	0.927	
Education and poverty alleviation project management	28.83	32.853	0.873	0.926	
Employment training, surplus labor force transfer, and employment poverty alleviation	28.98	32.491	0.841	0.927	
Modern distance education	29.03	33.084	0.656	0.937	
Government-sponsored skills training	28.98	33.542	0.672	0.935	
Coverage of poverty alleviation through education	28.77	34.012	0.782	0.930	

Educational PA forms	Scale means if item deleted	Scale variance If item deleted	Corrected item total correlation	Cronbach's alpha if item deleted	Cronbach's alpha coefficient
The system of award, loan, attendance, subsidy, and capital reduction provided by the school	28.65	33.926	0.641	0.937	
Accuracy of poverty alleviation through education	28.85	32.435	0.738	0.932	

Table 3. Calculation results of validity analysis.

Kmo and Bartlett's test	Value
Kaiser Meyer Olkin measure of sampling adequacy	0.845
Bartlett's sphericity test approximate chi square	1024.634
DF	136
Sig	0.000

It can be seen from [Table 3](#) that kmo value is 0.845 > 0.5, and kmo is above 0.9, which is very suitable for factor analysis; Between 0.8-0.9, very suitable; Between 0.7-0.8, suitable; Between 0.6-0.7, acceptable; Between 0.5-0.6, it means very poor; Below 0.5 should be abandoned. $P < 0.001$, so it can pass the test.

3.5. Personal Information Description and Sample Composition

[Table 4](#) shows the basic characteristics of the survey sample. According to the questionnaire data, the majority of the poverty-stricken households of the respondents' families are those with registered cards (76.19%), and the majority of farmers are pure farmers (39.68%), followed by agricultural and part-time businesses (31.75%) that are dominated by agricultural production activities and supplemented by non-agricultural activities such as working, and then non-agricultural and part-time businesses (23.81%) that are dominated by non-agricultural activities such as working and supplemented by agricultural production activities. Nonagricultural households accounted for only 4.76%.

From the perspective of family income sources, wage income (income from working, enterprises and institutions, and national civil servants) is as high as 47.62%, followed by land income (income from planting and land transfer) of 39.68%, operating income (income from aquaculture, small businesses, and self-employed households) of 6.35%, and transfer income (income from government subsidies, relief, subsistence allowances, gifts from relatives and friends, and child support, etc.) of 4.76%. Finally, the property income (interest income from deposits, bonds, and rental housing income) was 1.59%.

However, according to the family size survey results, the number of most families is 4, with more than 5 as high as 22.22%, and the result of the highest number of labor force members is only 1-2. However, the total family income is mostly in the range of 10000-30000 yuan, and the minimum is only 1000 yuan, which obviously puts great pressure on supporting family expenditure.

Moreover, the heads of households in poor households are mostly 43-49 years old (53.97%), and their children are around the age of university, so the education expenditure is large. Moreover, the vast majority of heads of households are educated at junior high school or below, earn living expenses through farming or working, and their political outlook is mostly that of the masses. In short, the household expenses of poor households often exceed their income.

The head of household is not well educated and suffers from life pressure, so it is difficult for his children to get strong support in education.

Table 4. Basic characteristics of survey samples.

Statistical indicators		Ratio (%)	Statistical indicators		Ratio (%)
Types of poor households	Filed and registered poor households	76.19%	Source of income	Land income	39.68%
	Low-income families	14.29%		Operating income	6.35%
	Households enjoying the five guarantees	4.76%		Wage income	47.62%
	Filed low-income and double-guarantee households	3.17%		Transfer income	4.76%
	other	1.59%		Property income	1.59%
Types of farmers	Pure peasant household	39.68%	Family size	Below 3	6.35%
	Agricultural household	31.75%		3	7.94%
	Nonagricultural household	23.81%		4	33.33%
	Nonagricultural household	4.76%		5	30.16%
	Under 30	6.35%		More than 5	22.22%
Age of head of household	30-36 years old	4.76%	Labor force population	1	36.51%
	37-42 years old	12.70%		2	60.32%
	43-49 years old	53.97%		3	1.59%
	50-60 years old	17.46%		4	0%
	Over 60 years old	4.76%		More than 5	1.59%
Educational level	No educational experience	9.52%	Household head identity	Farming	2.18
	Primary school	33.33%		Migrant workers	1.54
	Junior high school	47.62%		Self employed	45.54
	High school	1.59%		Village cadres	42.53
	High school and above	7.94%		other	6.35%

4. EFFECT EVALUATION AND ANALYSIS OF RURAL EDUCATIONAL PA

4.1. Overall Evaluation of Rural Educational PA Satisfaction

Rural education poverty alleviation satisfaction is a kind of psychological state of the people in rural areas in the process of receiving education-related services. With the aim of comprehensively and precisely reporting the satisfaction of local residents with education and poverty alleviation and making an aggregate comparative analysis of the satisfaction of various related services, we need to convert this subjective qualitative evaluation into an objective quantitative evaluation. Therefore, we use the "Adequacy-Importance model" (Cohen, Fishbein, & Ahtola, 1972) for reference to describe the satisfaction of poor households in Guanba village, Lixi Town, Youyang

County, and Chongqing with poverty alleviation through education. The specific model is $A = \sum_{i=1}^n w_i v_i$, in which A represents the residents' attitude towards rural education poverty alleviation, i.e., satisfaction, n is the evaluation level of rural PATE satisfaction, w is the satisfaction rate or frequency of rural education poverty alleviation, and v is the quantitative evaluation of poor households on rural education poverty relief. As mentioned above, we divide the satisfaction of people's livelihood with public services into five levels according to the principle of the Likert scale: "very satisfied", "satisfied", "average", "dissatisfied" and "very dissatisfied". Referring to the valuation methods commonly used in the market research industry, we use the equidistant valuation principle of "very satisfied=100", "satisfied=80", "general=60", "dissatisfied=40" and "very dissatisfied=20" to measure the satisfaction of a single indicator (Level 3 indicator) of rural education poverty alleviation by calculating the weighted average of five levels of satisfaction. On this basis, the simple arithmetic mean method is used to measure the satisfaction of education PA funds, education PA projects, education PA methods, and education PA benefits (secondary indicators). In addition, in order to investigate the distribution of poor households' satisfaction with PATE and reflect the changes in the internal structure of satisfaction, we also supplemented the satisfaction rate of the four secondary indicators of PATE.

Table 5 reports the overall satisfaction of the surveyed poor households with poverty alleviation through education. According to the survey's findings, the average satisfaction index of the poor households surveyed with the local government's current education programme is 64.5. From the perspective of satisfaction distribution structure, 24.4% of the surveyed poor households expressed "satisfaction" with poverty alleviation through education, and 5.4% expressed "very satisfaction", accounting for 29.8% of the total. Only 9.9% of the surveyed residents expressed "very dissatisfied" or "dissatisfied" (3.5% said "very dissatisfied", and 6.4% said "dissatisfied"). In addition, 60.5% of the surveyed poor households hold a neutral attitude towards education poverty alleviation, indicating that increasing the matching of education poverty alleviation supply will significantly improve the satisfaction of this part of the group with education poverty alleviation. In general, most of the surveyed residents gave positive (satisfied or very satisfied) or neutral (average) evaluations of PATE. The satisfaction rate of these three items (satisfied, very satisfied, or average) reached 80.3%, which is closely related to the continuous improvement of the poverty relief system through education and the increase in financial investment in PATE by the national and local governments in recent years. However, we should also see that the proportion of respondents with "satisfied" and "very satisfied" attitudes is not high, indicating that there is still a certain gap between the quality and level of the current supply of PATE and the growing diversified and heterogeneous public demand of residents, which means that there is still much room for improvement in the supply effect of PATE.

Table 5. Overall satisfaction of the surveyed poor households with PATE.

Poverty alleviation through education	Satisfaction rate (%)					Satisfaction index
	Very dissatisfied	Dissatisfied	Commonly	Satisfied	Extremely satisfied	
Education and poverty alleviation funds	2.5	5.8	60	25.8	6.7	66.2
Education and poverty alleviation project	1.7	6.7	63.3	24.2	4.2	64.6
Education and poverty alleviation methods	5.4	8.8	57.9	22.5	5	62.3
Benefit from education to alleviation poverty	4.2	4.2	60.8	25	5.8	64.8
Average	3.5	6.4	60.5	24.4	5.4	64.5

4.2. Single Evaluation of Satisfaction with PA through Rural Education

The satisfaction of the surveyed poor households in Guanba village, Lixi Town, Youyang County, and Chongqing with different educational and poverty alleviation projects has obvious differences. Table 6 shows the individual satisfaction of impoverished households with education poverty alleviation. The top three in the educational poverty alleviation satisfaction index are the award, loan, attendance, subsidy, and capital reduction systems provided by the school, the investment of educational PA funds, and the coverage of educational PA. Among the ten areas of satisfaction with PATE surveyed in the survey, the highest satisfaction index among the surveyed poor households is the award, loan, attendance, subsidy, and capital reduction system provided by the school, with a satisfaction index of 66.9. In the survey, nearly 41.0% of the residents expressed "satisfaction" or "very satisfaction", 50.8% of the residents expressed "average", and only 6.6% of the residents expressed "dissatisfaction" or "very dissatisfaction". The award, loan, attendance, subsidy, and capital reduction system provided by the school is the most extensive policy for poor households to enjoy poverty alleviation through education. Strengthening the funding system can reduce the economic burden on education for more poor households.

Everyone has a basic right to education, and it is crucial for the realization of personal freedom. According to the survey, the active promotion of physical activity (PA) has resulted in a generally high level of satisfaction among poor households interviewed regarding the investment of education PA funds, with a satisfaction index of 65.24%. Of the surveyed poor households, 32.8% evaluated the investment in poverty alleviation funds positively, while 59.0% were in a neutral state. Only a small proportion, 6.5%, had a negative evaluation. The sustained and balanced development of PATE is inseparable from a large investment of funds. Therefore, in the process of

promoting the development of education in the future, the local government should increase the investment of education PA funds, optimize school education resources, and provide a better learning environment for the educated.

The coverage of PATE is an important indicator of its breadth and depth. The questionnaire survey results show that the satisfaction index of the surveyed poor households on the coverage of PATE is 64.56. 29.5% of the surveyed poor households had a positive evaluation of the coverage of PATE, 63.9% of the surveyed poor households were in the middle, and only 6.6% had a negative evaluation. To a certain extent, the coverage of PATE is also a reflection of fairness. To achieve this fairness, the government must control the development direction of PATE from the overall situation, broaden the coverage of PATE, and make every poor household receive the policy of PATE.

Cultivating a skill is an important way to escape poverty and become rich. In this survey, the satisfaction evaluation of the surveyed poor households with the employment training of surplus labor transfer and employment poverty alleviation, modern distance education, and skill training organized by the government is relatively low. The survey shows that, first of all, the satisfaction index of the surveyed poor households with modern distance education is 57.8, ranking last in the ten categories of education poverty alleviation satisfaction index. Among the surveyed poor households, 23% said they were "satisfied" or "very satisfied", while 21.4% said they were "dissatisfied" or "very dissatisfied". Secondly, the satisfaction index of the surveyed poor households with the skill training organized by the government was 60.32. It ranks second from the bottom in the ten categories of the education poverty alleviation satisfaction index. Among the surveyed poor households, 21.3% said they were "satisfied" or "very satisfied", while 13.2% said they were "dissatisfied" or "very dissatisfied". Finally, the satisfaction index of the surveyed poor households on employment training and employment poverty alleviation for the transfer of surplus labor force was 60.38. It ranks third from the bottom in the ten categories of the education poverty alleviation satisfaction index. Among the surveyed poor households, 23.0% said they were "satisfied" or "very satisfied", while 14.7% said they were "dissatisfied" or "very dissatisfied".

Table 6. Individual satisfaction of poor households with PATE.

Poverty alleviation through education	Satisfaction rate (%)					Satisfaction index
	Very dissatisfied	Dissatisfied	Commonly	Satisfied	Extremely satisfied	
Educational PA fund investment	1.6	4.9	59.0	26.2	6.6	65.24
Educational PA fund supervision	3.3	6.6	57.4	24.6	6.6	64.02
Educational PA coverage	3.3	3.3	63.9	24.6	4.9	64.56
Accuracy of educational PA	6.6	4.9	55.7	24.6	6.6	62.98
Number of educational PA projects	1.6	4.9	63.9	24.6	3.3	63.6
Educational PA project management	1.6	8.2	60.7	23.0	4.9	63.32
Employment training, surplus labor force transfer, and employment poverty alleviation	4.9	9.8	60.7	19.7	3.3	60.38
Modern distance education	6.6	14.8	52.5	19.7	3.3	57.8
Government-sponsored skills training	6.6	6.6	63.9	16.4	4.9	60.32
The system of award, loan, attendance, subsidy, and capital reduction provided by the school	3.3	3.3	50.8	32.8	8.2	66.9

The possible reasons for the low satisfaction of the surveyed poor households with skills education are as follows: (1) They think that skills training is a waste of time and may not have a better income; (2) The government's

propaganda is not in place or the skilled workers allocated by the government are not professionals, so the poor households cannot feel the benefits of skills. Therefore, local governments should take skill training as the focus of poverty alleviation through education, strengthen publicity, increase pilot sites, enhance the trust of poor households in skill training, and improve the knowledge literacy and earning of poor households.

In comparison, poor households' satisfaction evaluations of the supervision of education PA funds, the accuracy of education PA, the management of education PA projects, and the number of education PA projects are relatively neutral. The energy spent by the government on these types of projects can be relatively stable, and the ups and downs should be relatively balanced. This can not only keep poor households' perception of these types of PA in a relatively stable state but also reduce the government's pressure on PA to a certain extent.

4.3. Cluster Evaluation of Rural Education Poverty Alleviation Satisfaction

Rural education poverty alleviation satisfaction is a subjective judgment of poor households on whether the education poverty alleviation related services provided by the government meet their own needs. For the same policy of PATE, the poor households with different characteristics (such as the type of poor households, the number of family labor, the source of income, etc.) have different preferences for poverty alleviation through education, so they will give different subjective evaluations. In order to further investigate the satisfaction of different groups with poverty alleviation through education, we selected four dimensions for cluster analysis: the type of farmer, the number of family members, the source of income, and the education level of the head of household (see [Table 7](#)).

From the perspective of the cluster sample of farmer types, the average indicators of satisfaction with poverty alleviation through education from high to low are farmers, non-agricultural households, and agricultural households. The average satisfaction of pure farmers was 67.8, the average satisfaction of non-agricultural households was 63.4, the average satisfaction of agricultural households was 62.5. From this point of view, pure farmers enjoy more education poverty Alleviation Policies at ordinary times, so their satisfaction with education poverty alleviation is relatively high. The average satisfaction of non-farmers is low because non-farmers mainly work, enjoy relatively fewer education poverty relief policies, and have a low understanding of education poverty alleviation, so the satisfaction evaluation is relatively low. The government should strengthen poverty alleviation and make the implementation of PATE fair.

Judging from the grouping sample of family population, the number of family population is 5, and the satisfaction with PATE is the highest, which is 68.7; the satisfaction evaluation of four family members was the lowest, which was 60.5. For the other three indicators: less than 3, 3 and more than 5, the satisfaction was 62.2, 64.3, and 65.8, respectively. The reason for this is related to the experiences and ideas of family members. Each family's experience and family members' ideas are different, which will lead to different views and attitudes towards poverty alleviation through education.

From the income source cluster sample, the average satisfaction index of operating income is the highest, which is 66.3; the average satisfaction index of wage income is the lowest, which was 63.1. Because the operating income is mainly from breeding income, small businesses, and self-employed households, which require higher knowledge and skills, and the attitude towards education is called positive, the satisfaction index is high. The wage income is mainly the income from working, enterprises and institutions, and national civil servants, and has a negative attitude towards poverty alleviation through education, so the satisfaction index is low.

According to the cluster sample of (head of household) education level, the poverty-stricken households with higher satisfaction with PATE are concentrated in the poverty-stricken households with primary and high school education levels. Among them, the group with a junior high school education level has the highest evaluation of PATE, with an average satisfaction index of 66.4, while the average satisfaction of poverty alleviation through education in primary school and above is relatively low, with 62.3 and 62.8, respectively. However, those who have not received formal education have lower contact with and understanding of poverty alleviation through education than the other four groups, and their evaluation of the four indicators is at a medium level, which is more pertinent. However, the data show that no matter what kind of educated group, the lowest value of their satisfaction evaluation of the four types of education poverty relief indicators given is concentrated in education poverty alleviation. This may be because indicators such as employment training and employment poverty alleviation for the transfer of surplus labor, modern distance education, skill training organized by the government,

and the system of awards, loans, attendance, subsidies, and capital reduction provided by schools are more concrete in the perception of poor households. However, in the surveyed areas, the implementation of such work directly related to poor households is not in place, resulting in a low satisfaction evaluation of this indicator among the respondents with different levels of education.

Table 7. Satisfaction of poor households with different characteristics with poverty alleviation through education.

Feature		Satisfaction index				Average satisfaction
		Education poverty alleviation fund	Education poverty alleviation project	Poverty alleviation through education	Benefit from poverty alleviation through education	
Types of farmers	Pure farmer	69.2	67.9	65.2	68.8	67.8
	Agricultural household	64.2	61.6	60.8	63.2	62.5
	Nonagricultural household	66.7	66.7	58.6	61.4	63.4
	Nonagricultural household	63.6	62.1	66.7	60.0	63.1
Family population	Less than 3	65.0	60.0	63.8	60.0	62.2
	3	66.0	64.0	61.0	66.0	64.3
	4	61.9	59.5	60.0	60.5	60.5
	5	69.4	70.6	64.7	70.0	68.7
	More than 5	66.7	65.8	65.0	65.8	65.8
Source of income	Land income	65.7	66.1	64.3	66.5	65.7
	Operating income	70.0	67.5	60.0	67.5	66.3
	Wage income	64.1	63.1	62.4	62.8	63.1
	Transfer income	73.3	63.3	63.3	63.3	65.8
	Property income	70.0	60.0	45.0	80.0	63.8
Education degree	No formal education	68.0	66.0	59.0	64.0	64.3
	Primary school	63.0	62.5	60.8	63.0	62.3
	Junior high school	67.6	66.2	65.5	66.2	66.4
	High school	60.0	70.0	60.0	70.0	65.0
	High school and above	68.0	60.0	59.0	64.0	62.8

5. ACCURATE IDENTIFICATION OF POVERTY ALLEVIATION NEEDS OF POOR HOUSEHOLDS THROUGH EDUCATION

5.1. Research and Judgment on the Overall Needs of PATE

From Table 8, it can be seen that people hope to obtain better teaching resources in educational PA (66.7%). At present, to meet the needs of more people, the number of educational institutions has increased, but the quality of teaching has been ignored.

Moreover, due to the insufficient attention paid to education in rural areas, many people believe that the government still needs to strengthen the significance of publicity and Education (58.3%), so that more people are aware of the importance of education. We should really attach importance to education rather than just accept it as a mere formality.

Reduce the cost of Education (53.3%). Although the educational environment and resources are getting better and better, there are still some people who can't afford the cost of education. Making education a public service and making everyone able to receive a better education is the direction of PATE. Therefore, improving the level of teaching quality, enhancing educational awareness, reducing the educational cost, and popularizing education more broadly are what the current survey respondents most hope to achieve in poverty alleviation through education.

Table 8. Overall expectation of PATE.

Which of the following contents are expected to appear in poverty alleviation through education		Response		Percentage of cases
		N	Percentage	
Demand	Provide better teaching resources	40	18.3%	66.7%
	Provide skills training for non-agricultural labor transfer employment	30	13.8%	50%
	The significance of strengthening publicity and education by the government	35	16.1%	58.3%
	Reduce education costs	32	14.7%	53.3%
	Strengthen the training and cultivation of poverty alleviation cadres and elites	30	13.8%	50%
	Improve school facilities and equipment	23	10.6%	38.3%
	Increase investment in farmers' skill training	28	12.8%	46.7%
Total		218	100%	363.3%

According to [Table 9](#), people believe that the biggest problem with PATE is that there are few poverty alleviation projects through education (63.3%), and the number of poverty relief projects through education cannot meet the current demand. If we need to truly implement PATE, we should support more poverty alleviation projects through education so that more people can feel the implementation of PATE. Moreover, most respondents believe that the participation process of the PATE policy is complex (58.3%). When it is difficult for people to obtain information about PATE and enter the PATE project, it is difficult for the general public to benefit from this project. Simplifying the participation process of PATE is an essential way to build an efficient poverty alleviation system through education. In addition, people also believe that the investment in PATE is lower (51.7%), which will indirectly lead to fewer poverty alleviation projects and lower quality. Only by solving the problem of funds can PATE really be implemented and meet local needs as much as possible.

According to [Table 10](#), in the question "what do you think are the most needed poverty alleviation methods in the local area", the three options with the highest scores are poverty alleviation through education (36.7%), social security (17.8%), and rural infrastructure construction (14.4%), which shows that the local demand for these three poverty alleviation methods is the highest, and starting from these three factors is more conducive to the in-depth development of PA work among the population; In addition, according to the ranking, the vast majority of people put PATE in the first place (73.3%), and PATE is urgent in the local area, followed by social security (28.3%). Only when social security is met and people's lives are guaranteed can they have a stronger sense of education, and the third is industrial development (25%). Poor areas rely more on agricultural development, and the economic level is low. If we adjust the industrial structure and promote industrial development, we may be able to achieve more long-term results in poverty alleviation.

Table 9. Lack of implementation of PATE.

What problems exist in the implementation of PATE?		Response		Percentage of cases
		N	Percentage	
Problem	There are fewer poverty alleviation projects in education	38	18%	63.3%
	Relatively little money is invested in poverty alleviation through education	31	14.7%	51.7%
	The participation process in education and poverty alleviation policies is complex	35	16.6%	58.3%
	There is a situation where economic poverty alleviation is emphasized and education is neglected	21	10%	35%
	Government supervision is not in place, and there are cases where poverty alleviation funds are misappropriated	29	13.7%	48.3%
	Government propaganda is not in place, and the people do not understand	30	14.2%	50%
	The implementation of the government's education poverty alleviation policy is inadequate	27	12.8%	45%
Total		211	100%	351.7%

Table 10. Degree of demand for poverty alleviation methods.

What do you think is the most needed poverty alleviation methods in the local area	First rank	Second rank	Third rank	Total score
A. Poverty alleviation through education	132	16	4	152
B. Ecological compensation	3	18	8	29
C. Relocation	6	12	7	25
D. Social security	18	34	12	64
E. Industrial development	3	10	15	28
F. Financial poverty alleviation	6	2	2	10
G. Rural infrastructure construction	12	28	12	52

5.2. Different Needs of Different Types of Poor Households for PATE

Based on the perspective of poor households' perceptions, we investigated the expectations of different types of poor households on PATE. By asking the respondents "Which of the following do you want in poverty alleviation through education?", we obtained their expectations on poverty alleviation through education, such as "providing better teaching resources", "providing skills training for non-agricultural labor force transfer employment" and "increasing investment in farmers' skills training", We then judged the needs of this type of respondent for PATE. It is found in **Table 11** that among pure agricultural households, the number of people who choose to "provide higher quality teaching resources" has reached 17, and the number of people who "increase investment in farmers' skills training" is second only to this, with a total of 15.

Table 11. Cross analysis of types of farmers and expected contents of PATE.

Types of farmers expected content	Pure peasant household	Agricultural household	Nonagricultural household	Nonagricultural household	Total	Percentage
Provide better teaching resources	17	12	9	2	40	18.3%
Provide skills training for non-agricultural labor transfer employment	13	10	7	0	30	13.8%
The significance of strengthening publicity and education by the government	13	8	11	3	35	16.1%
Reduce education costs	12	13	6	1	32	14.7%
Strengthen the training and cultivation of poverty alleviation cadres and elites	13	7	9	1	30	13.8%
Improve school facilities and equipment	12	4	6	1	23	10.6%
Increase investment in farmers' skill training	15	8	5	0	28	12.8%
Percentage	95	62	53	8	218	100%

This may be because pure agricultural households tend to believe more in "knowledge changing destiny", hoping that the family's current situation of poverty can be changed by improving the quality of the family population. Meanwhile, increasing investment in skill training adhering to the idea that "giving people fish is better than giving people fish", it is not only a guarantee for land income, the main source of income for pure agricultural households, but also improves the quality of pure agricultural poor households. Agricultural households have the highest expectation of reducing the cost of education, which is 13, followed by providing high-quality teaching resources, which is 12. It can be seen that these groups are more in pursuit of the cost-effectiveness of education. Nonagricultural households and non-agricultural households follow with interest the publicity and popularization of educational significance in the aspect of PATE, advocate transformation from the ideological level, and let more people understand the importance of education so as to show solicitude for PATE and promote the improvement of education level.

There are both similarities and differences in the expectations of poor households from different sources of income for poverty alleviation through education. According to Table 12, on the whole, the percentage of "providing higher quality teaching resources" is the highest, accounting for 18.3%, and the proportion of "providing higher quality teaching resources" in the expectation of land-based income sources and wage-based income sources for poverty alleviation through education is very large, both of which are 17, indicating that there are defects in the supply of teaching resources in the local area and the government should increase the investment in teaching resources. The most basic teaching resources should be comprehensive, and more advanced teaching resources should be allocated. The second is "the significance of strengthening publicity and education by the government", which is 16.1%, reflecting that farmers' recognition of the significance of education is growing to a certain extent.

Table 12. Cross analysis of income source types and expected contents of poverty alleviation through education.

Type of income source expected content	Land income	Operating income	Wage income	Transfer income	Property income	Total	Percentage
Provide better teaching resources	17	4	17	2	0	40	18.3%
Provide skills training for non-agricultural labor transfer employment	12	2	15	1	0	30	13.8%
The significance of strengthening publicity and education by the government	13	4	16	1	1	35	16.1%
Reduce education costs	15	1	16	0	0	32	14.7%
Strengthen the training and cultivation of poverty alleviation cadres and elites	9	4	13	3	1	30	13.8%
Improve school facilities and equipment	11	2	9	1	0	23	10.6%
Increase investment in farmers' skill training	16	2	9	1	0	28	12.8%
Total	93	19	95	9	2	218	100%

The third is "reducing the cost of education", which is 14.7%. To a large extent, education expenditure is the largest expenditure of a poor family. With the growth of children, the proportion of education expenditure is also increasing, which is a major economic burden for poor families. Therefore, "reducing the cost of education" is what poor families expect, which can not only reduce the economic pressure on families but also make children healthy and happy to receive education. In the content of "increasing investment in farmers' skills training", 16% of the families with land-based income value it more, which shows that farmers are also eager to get the skills training provided by education and poverty alleviation to improve their knowledge so as to improve their income. While "providing skill training for non-agricultural labor transfer employment" is more popular with wage-earning families. For wage-earning farmers, skill training is the most important. Mastering the core skills will make the

work more stable, and the income will increase accordingly. However, when considering operating income, transfer income, and property income, it is observed that the expectations are not excessively high, and in some cases, they may even be zero. Individual perceptions and possibly small sample data can both influence this phenomenon.

Generally speaking, the level of education is in direct proportion to the individual's learning ability, understanding ability, and problem-based perspective. Table 13 presents the cross-analysis between the education level of impoverished households and the expected content of educational poverty alleviation. According to the survey data, the frequency of "providing higher-quality teaching resources" is very high among the poor households in primary school, junior high school, high school, and above. It can be seen that no matter which level of education they receive, they attach great importance to the improvement of educational resources. It is worth noting that among the samples collected in the search, the primary school and junior high school groups had the largest number of people. They have high expectations of the three options with the words "training" such as "providing skills training for the transfer of non-agricultural labor force", "strengthening the training and cultivation of poverty alleviation cadres and poverty alleviation elites" and "increasing investment in farmers' skills training". The number of people who have been educated in primary school is 13. For the group with junior high school education, the number of people who chose the three items was 14, 14 and 11, respectively; However, the expectations of people above high school for the content of PATE focus on such content as "providing higher quality teaching resources", "the significance of strengthening publicity and education by the government" and "reducing the cost of education", which to some extent is consistent with the social status quo of the differences in the educational level and cognitive perspective of the objects of knowledge education and technology education.

6. RESEARCH CONCLUSIONS AND POLICY IMPLICATIONS

6.1. Research Conclusion

Through the field survey, the research on PATE in Youyang County of Chongqing by questionnaire found that the main results of the satisfaction index of PATE are as follows: The first is that PATE satisfaction is typically low, and its average satisfaction index is only 62.3, leaving a gap between it and the public's reasonable expectations. The second is that Youyang's PATE satisfaction index ranked highly in the three categories of award, loan, attendance, subsidy, and capital reduction system provided by the school, investment in PATE, and coverage of PATE, whereas the satisfaction index of contemporary distance education and skill was lower.

Table 13. Cross analysis of education level and education poverty alleviation expectation.

Education level expected content	No formal education	Primary school	Junior high school	High school	High school and above	Total	Percentage
Provide better teaching resources	2	16	18	1	3	40	18.3%
Provide skills training for non-agricultural labor transfer employment	2	13	14	0	1	30	13.8%
The significance of strengthening publicity and education by the government	3	9	20	0	3	35	16.1%
Reduce education costs	4	11	13	0	4	32	14.7%
Strengthen the training and cultivation of poverty alleviation cadres and elites	2	13	14	0	1	30	13.8%
Improve school facilities and equipment	2	7	13	0	1	23	10.6%
Increase investment in farmers' skill training	3	13	11	0	1	28	12.8%
Total	18	82	103	1	14	218	100%

The survey results of the demand for PATE are as follows: First, the rural poor households have great demand for PATE, and most of them hope that the government can increase the projects and forms of PATE and provide more and better teaching resources. Second, education expenditure is a major economic burden for rural poor families. From the survey and data analysis of the demand for PATE, most farmers hope to reduce the cost of education and increase the investment of PA funds through education. Third, PATE is the most popular form of PA among poor households. Farmers have long recognised the concept that "helping the poor first supports wisdom, and governing the poor first cures ignorance". Most farmers believe that education can bring better lives for their families. The government should play a leading role in providing poverty-stricken households with what they really need for PATE. In the meantime, strengthening the propaganda of educational significance is the idea of education and talent. The poor households should be self-motivated, constantly learn new knowledge, and constantly improve themselves.

6.2. Policy Implications

6.2.1. Change the Old Values of PATE

First, we should change the education concepts of the poor. Due to the traditional thinking of people in poverty-stricken areas, there are still some people in rural areas who do not realize the importance of education. Therefore, the idea of PATE should be rooted in the hearts of local people. In particular, we should change the existing notion that PATE is only for students' education, help establish the concept of PA through vocational education, and carry out comprehensive PATE. The second is to change the concept of poverty alleviation policies at the top. Nowadays, poverty relief policies are limited to increasing the coverage of education as much as possible and lack attention to the level and quality of education. Therefore, we should attach importance to the quality of education, cultivate high-level teachers, improve teaching methods, introduce high-quality teaching resources, and make adaptive improvements to local education in combination with the characteristics of poverty relief areas.

6.2.2. Optimize the Allocation of Educational Poverty Alleviation Resources

Educational PA resources are a prerequisite for educational PA. Optimizing the allocation of educational poverty resources is an important method to promote the smooth progress of PATE. First, increase the supply of high-quality educational resources. High-quality educational resources include educational human resources, rich financial resources, excellent educational-quality software, and hardware resources for teaching and supporting facilities and equipment. In order to ensure the provision of high-quality educational resources, it is imperative for the government to augment its investment in education funds. The educational institution fosters a culture of producing exceptional educators. It is advisable for economically disadvantaged households to acquire and utilise educational resources as a means to enhance their cognitive abilities and cultural literacy. Second, we will actively develop modern vocational skills training and encourage poor households to receive vocational training. Mobilize vocational schools and science and technology workstations in Youyang County and even the whole of Chongqing, regularly contact and organize relevant experts and scholars, and combine with local actual conditions to provide regular fixed-point science and technology training and education for agricultural households and concurrent agricultural households, so as to not only improve the quality of poor households, but also promote the modernization of local industries. The third is to strengthen the construction of preschool education and vocational education. In the process of PATE, the Poverty Alleviation Policies of primary schools, junior high schools, and senior high schools are relatively perfect, but the essence of preschool education and vocational education has not been noticed. The construction of preschool education can not only share the pressure of parenting with the family labor force and make adults have more time to work, but also make up for the lack of family education for some left-behind children. The improvement of vocational education can help young people, unemployed people, and even middle-aged and elderly people have professional skills, easier access to employment opportunities, and more extensive sources of income, so as to reduce family pressure.

6.2.3. Build a Multi-Collaborative Education Poverty Alleviation System

The aim is to progressively transform the education poverty alleviation system led by the government and effectively engage various stakeholders, including the government, social organisations, communities, enterprises, and individuals experiencing poverty, in collaborative efforts to combat poverty. This can be achieved by

implementing strategies that facilitate the introduction and optimal utilisation of resources. First, introduce high-quality intellectual resources and improve the quality of teaching resources. The second is to establish, improve, and effectively use the mechanisms of college students' education and help and bring the role of college students' help into full play. Identify and file local poor students, monitor them in real time, and understand their reasons for poverty and their own demands so as to achieve targeted PA. Ameliorate the welfare benefits of teachers in poor areas of Youyang County and attract high-quality teachers to flow in and reside in Youyang County. For existing local teachers, teachers' professional ability training should be actively carried out to improve their educational skills. Third, build an intelligent assistance platform to achieve poverty alleviation through smart education. Innovative use of "Internet+" thinking to build a "smart education poverty alleviation" platform and actively raise education poverty relief love funds. With the help of big data, clarify the information of local poor households, subdivide the types of poor households and the needs related to PATE, and accurately target poverty alleviation; Actively attract various enterprises, social organizations and even individuals to settle on the platform; and increase the sources of funds for poverty alleviation. Meanwhile, with the help of the platform, it promotes modern distance education, breaks the limitations of time and space, promotes the sharing of high-quality education and teaching resources, and promotes education equity.

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INSTITUTIONAL REVIEW BOARD STATEMENT

The Ethical Committee of the Krirk University, Thailand has granted approval for this study on 7 March 2022 (Ref. No. 2022-0307).

DATA AVAILABILITY STATEMENT

The data supporting this study's findings are available from the corresponding author, Dan Zhang, upon reasonable request.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

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