Research on Identifying the Risk of Returning to Poverty from Poverty-alleviation Households[1] and Industrial Development in Liangshan Prefecture, China

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Abstract. With the victory of China's fight against poverty in 2020, the focus of poverty alleviation will shift to prevent poverty reinstatement. With the help of the survey data of 676 poverty-alleviation households in Liangshan Prefecture, this paper identifies the poverty-return risk of poverty-alleviation households and further analyzes its related influence mechanism. The results found that most of the poverty-alleviation households have a low risk of returning to poverty. The impact mechanism shows that the village hardening road compliance status, endogenous development motivation, county per capita GDP, and the proportion of wage income are negatively correlated with the risk of poverty-returning households in Liangshan prefecture; however, this effect has group heterogeneity and is more conducive to reducing the poverty-return risk for those with higher risk of returning to poverty. The number of people with disabilities and the number of people receiving subsistence allowances in the family are positively correlated with the poverty-return risk. And put forward suggestions to prevent poverty return based on industrial development.

1 Introduction

Since 2011, breakthroughs have been made in poverty alleviation in rural China. Statistics from the National Bureau of Statistics of China show that in the nine years from 2012 to 2020, 98.99 million people living in poverty in China's rural areas have all been lifted out of poverty, and the incidence of poverty has dropped from 10.2% to zero. The "No. 1 Central Document" in 2019 clearly stated that the rural poor will be fully lifted out of poverty by 2020 under the current standards. According to this schedule, governments at all levels in China have formulated corresponding timetables and plans for poverty alleviation. Under the pressure of poverty alleviation, local governments will inevitably show signs of egoism, formalism, the pursuit of short-term benefits in poverty alleviation, and commit to "poverty alleviation by political performance", "poverty alleviation by tables", and "poverty alleviation by numbers". Consequently, Statistics are distorted and the quality of poverty alleviation is not high. At the same time, the poverty-alleviation households have the characteristics of insufficient subjective initiative to get rid of poverty, lack of ability to adapt to employment and entrepreneurship, and "welfare dependence" on the targeted poverty alleviation policies. These characteristics determine that they are very easy to return to poverty. The current governance strategy for the phenomenon of returning to poverty is to re-enter the poverty-returning households into the original poverty alleviation system for assistance, this governance strategy has a better poverty reduction effect for those returning to the poor who are less poor. but for those groups that have developed the ability to "immunize" the conventional poverty alleviation methods, it will get half the result with twice the effort.

The problem of returning to poverty has greatly weakened the performance of China's poverty alleviation policy and is a major problem that needs to be solved urgently after China has built a well-off society in an all-round way. In March 2020, president Xi Jinping pointed out that it is very difficult to consolidate the results of poverty alleviation. According to preliminary surveys from various regions, nearly 2 million of poverty-alleviation households are at risk of returning to poverty, and there are nearly 3 million among the population close to poverty are at risk of causing poverty, and it is clearly stated that "the establishment of a monitoring and assistance mechanism to prevent returning to poverty should be accelerated."

Compared with China's main nationality areas, ethnic minority regions have the highest incidence of poverty, the deepest degree of poverty and the most difficult poverty alleviation. The poverty-alleviation households within the region are obviously more vulnerable, and they are most likely to be the "severe disaster areas of returning to poverty" after poverty alleviation. Zhang et al.[1] found through field research that the vulnerability of poverty-alleviation households in the Yi nationality, Tibetan, Mongol nationality, and Hui nationality areas was 33%, 29%, 18%, and 18% respectively, which was significantly higher than the vulnerability of the overall poverty-alleviation

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[1]Refers to households that have been lifted out of poverty under current standards.

households in China (12.9%). Whether the ethnic minority regions can guarantee the quality of poverty alleviation is not only a solemn promise made by China to the people of all ethnic groups in the country and the people of all ethnic groups in the world, but it also concerns the well-being of the local people. It is of great significance to guard against the risk of returning to poverty of poverty-alleviation households and to ensure stable poverty alleviation in ethnic minority regions.

China has won the battle against absolute poverty, and now is a critical period for consolidating the results of poverty alleviation. Pre-warning and measuring the risk of returning to poverty is the indispensable meaning of consolidating the results of poverty alleviation and an inevitable requirement for preventing the risk of returning to poverty. To this end, this article mainly discusses the following issues: First, explore the generating mechanism of the risk of returning to poverty based on the comprehensive risk management theory, and further provide a basis for constructing an indicator system of the main factors affecting the risk of returning to poverty. Second, how to identify the risk of returning to poverty in ethnic minority regions? Which factors affect the risk of returning to poverty are the most worthy of attention? What are the heterogeneous effects of the factors that affect returning to poverty to farmers with different endowments? Third, explore the construction of a poverty-return risk management mechanism based on the comprehensive risk management process of the enterprise.

2 Literature review

The existing research on the identification of the risk of returning to poverty is mostly based on the concept of poverty vulnerability. In 2000, the World Bank introduced the concept of poverty vulnerability in the "World Development Report", which broadened the path of poverty measurement. Most scholars believe that poverty vulnerability is a prediction of the possibility of a family falling into poverty in the future, which is forward-looking[2]. It can meet the needs for measuring the risk of returning to poverty. Based on different definitions of poverty vulnerability, there are three main methods used by the academic community to measure the risk of returning to poverty of poverty-alleviation households. The first method is vulnerability as low expected utility (VEU), Using the difference between the utility of the poverty line and the expected utility of household consumption in the future to measure the risk of returning to poverty. However, because the household utility function is unknown, if the existing data dimensions cannot describe household preferences and consumption variability well, the application of the VEU method will be greatly restricted. The second method is vulnerability as uninsured exposure to risk (VER). This method uses the variability of individual consumption or income due to risk shocks to measure the poverty-return risk of poverty-alleviation households. Although this method considers the relationship between vulnerability and risk shocks, it is biased towards post-event calculations and is not predictive, so Relatively few applications. The third method is vulnerability as expected poverty (VEP). This method measures the risk of returning to poverty by using the probability that the individual's future consumption or income will fall below the poverty line after the individual suffers a risk shock. This method has two advantages. On the one hand, the VEP method can be used to obtain forward-looking estimation results; on the other hand, the method can use cross-sectional data for measurement and has a wider applicability. Therefore, this article chooses the VEP method to measure the risk of returning to poverty of poverty-alleviation households.

The inducing factors of returning to poverty are complex and diverse. Existing research analyzes and summarizes the influencing factors of returning to poverty from different perspectives. Based on the research of scholars, this article found that the main factors leading to return to poverty are: policy[3], The quality of the population returning to poverty[4], Natural and social environment[5]. Some of these factors come from the main body and donor in the process of poverty alleviation, and some come from the carrier of farmers' survival. Based on the former research, Yuan[6] analyzed the poverty alleviation work mechanism and found that the poor quality of poverty alleviation, the unreal situation of poverty alleviation, and the lack of a long-term mechanism for poverty alleviation are also important factors that lead to poverty return. Scholars also focused on women's poverty and found that depriving women of their basic rights will increase their risk of returning to poverty[7].

In order to block the risk of returning to poverty, existing studies have proposed strategies for returning to poverty in terms of mechanism construction and supplementing weak links. Starting from the participants in the poverty alleviation process, Ding and Chen[8] proposed to build a "subject-donor-carrier" three-body balanced and three-in-one sustainable poverty alleviation model. Jiao et al. [9] introduced a holistic governance framework, relying on the theoretical support of project integration, resource pooling, and restructuring of powers and responsibilities, and proposed to build a long-term mechanism for preventing poverty. More literature on returning to poverty is based on its own research and puts forward targeted strategies to prevent the risk of returning to poverty, such as: incorporating asset indicators into the poverty dynamic adjustment system, improving the public welfare system, building a poverty-returning warning system based on household big data[10], strengthening the management of financial educational poverty alleviation funds, improving the financial poverty alleviation system, optimizing industrial poverty alleviation projects, and clarifying employment poverty alleviation targets aims[11].

To sum up, although the existing literature has done a lot of research on the risk identification, influencing factors and governance strategies of returning to poverty, there are few studies on the risk of returning to poverty in ethnic minority regions, and there are few documents explore the impact mechanism of poverty-returning risk of poverty-alleviation households in ethnic minority

regions. To this end, based on the existing researches, this article explores the generating mechanism of the risk of returning to poverty based on comprehensive risk management. Relying on the data from the field survey in Liangshan prefecture, this paper uses VEP method to identify the risk of returning to poverty for the poverty-alleviation households in ethnic minority regions. And on this basis, this article deeply discussed the impact mechanism of the poverty-return risk of poverty-alleviation households. It is hoped that the analysis of this article will provide a valuable reference for the prevention of poverty in China's ethnic minority regions.

3 Data source and index selection

3.1 Data source

The data in this article comes from a field survey conducted by the research team of the National Social Science Fund "Liangshan Yi District Hidden Poverty Measurement and Targeted poverty alleviation policy" (project number: 18CMZ041) in 2020 in Liangshan Prefecture. This survey uses stratified sampling method to understand the living environment, enjoyment of policies, and economic conditions of poverty-alleviation households in Liangshan prefecture. Liangshan Prefecture is an autonomous prefecture inhabited by Yi nationality in Sichuan Province, China. The survey selected three state-level impoverished counties in Liangshan Prefecture, Xide County, Muli County and Yanyuan County. These three counties are located in the hinterland of Liangshan prefecture, Yi nationality has a large population, the economic and social development is backward, the poverty population is large, the situation of poverty alleviation is severe. This is a typical ethnic minority poverty region. The survey was mainly aimed at poverty-alleviation households. The survey involved 15 villages in Liangshan prefecture. A total of 700 questionnaires were issued and 676 valid questionnaires were returned. The questionnaire response rate was 96.57%.

3.2 Explained variable

The explained variable of this article is the risk of returning to poverty from poverty-alleviation households. This article takes the probability of returning to poverty as a substitute variable for the risk of returning to poverty. The specific calculation steps of returning to poverty are as follows:

Assuming that the household income per capita in the future follows a normal distribution, the first step is to estimate the household income equation and obtain the following expression:

$$\mathrm{Ln}Y_{h,t}=\alpha_{\mathrm{h}}X_{h,t}+e_{\mathrm{h}} \quad (1)$$

Among them, $Y_{\mathrm{h,t}}$ represents the per capita income of the family h during the period t, $X_{h,t}$ represent some observable family or individual characteristic variables that affect income, The main personal characteristic variables selected in this paper include: the gender of the head of household; the family characteristic variables include: family size, total amount of loan for building and microloans, and family annual net income. eh represents a function describing the error term of the impact factor. Using equation (1), the dependent variable $Y\hat{}=Y_{h,t}$ and the residual term $\sigma_{e,h}$ can be calculated.

The second step is to estimate the expected value $E\hat{}$ and variance $\sigma^2_{e,h}=X_h\beta$ of the logarithm of household income per capita, and further obtain the following expression:

$$E\hat{}=[\mathrm{Ln}Y_h|X_h]=X_h\alpha\hat{} \quad (2)$$

$$V\hat{}[\mathrm{Ln}Y_h|X_h]=\sigma^2_{e,h}=X_h\beta\hat{} \quad (3)$$

In the third step, assuming that the household income per capita follows a normal distribution, the vulnerability calculation can be simplified to the following formula:

$$VUL_{\mathrm{h}}=P\hat{r}(\mathrm{Ln}Yh\leq\mathrm{Ln}poor)$$

$$=\Phi\left(\frac{\mathrm{Ln}poor-Xh\hat{\alpha}}{\sqrt{Xh\beta}}\right) \quad (4)$$

When estimating the probability of falling into poverty in the future, it is also necessary to set a poverty line. This article adopts the international poverty line of 1.9 dollar/day.

Table 1 is the descriptive statistics of household and individual characteristic variables used in this paper to measure poverty vulnerability.

Table 1. Descriptive statistics of household and individual characteristic variables

Variable name	Variable interpretation	Mean	Standard deviation
Gender of head of household	Male=1, Female=0	0.9216	0.269
Family size	Family permanent population	4.429	1.5317
Partial family debt	Total amount of loan for building and microloans	26224.85	38696.16
Family annual net income	Family annual net income in 2017	35274	21453.86

Table 2 reports the probability of returning to poverty in the sample. The average probability of returning to poverty in the total sample is 16%. The probability of returning to poverty in most families is below 30%, but there are also some families with the probability of returning to poverty in the future as high as 60%. The overall risk of returning to poverty is not high. The sub-sample statistical results show that when the head of the household is Han nationality, the probability of returning to poverty is lower than other families; male-headed households have a slightly lower probability of returning to poverty than female-headed households; Families with

more educated household heads are less likely to return to poverty.

Table 2. Descriptive statistics of the probability of returning to poverty

Sample classification	Mean Probability of Returning to Poverty	Standard deviation of probability of returning to poverty	Proportion of households with a probability of returning to poverty below 30%	The proportion of households with a probability of returning to poverty of 30%-60%	Proportion of households with a probability of returning to poverty above 60%
Overall	0.16	0.30	0.81	0.06	0.13
Han nationality	0.09	0.23	0.89	0.07	0.04
Yi nationality	0.17	0.30	0.80	0.07	0.13
Other minorities	0.17	0.33	0.80	0.04	0.16
Male head of household	0.16	0.30	0.81	0.06	0.13
Female head of household	0.20	0.28	0.74	0.13	0.13
Low educational background (primary school and below)	0.17	0.31	0.80	0.06	0.14
Higher education (above primary school)	0.13	0.26	0.83	0.10	0.07

3.3 Explanatory variables

The indicators of subsistence allowances and industrial targeted poverty alleviation policies were selected from the assistance measures, and the indicators of transportation infrastructure and county per capita GDP were selected from the infrastructure conditions. indicators such as the endogenous development motivation of the poverty-alleviation households, the nationality and the educational background of the head of the household, the status of the disabled, the status of illness, the status of chronic diseases, and the salary income are mainly selected. Table 3 reports the specific indicators.

Table 3. Definition of explanatory variables and descriptive statistics

Variables	Index measurement method	Mean	Standard deviation
Subsistence allowance policy	"Number of people receiving subsistence allowance at home"	1.4231	2.1001
Industrial targeted poverty alleviation policies	"Whether enjoy the support policies of the industry", "Yes"=1; "No"=0	0.8003	0.4001
Transportation infrastructure construction	"Whether the hardened road meets the standard", "Yes"=1; "No"=0	0.9186	0.2736
Regional economic situation	County GDP per capita in 2019	19675.66	5300.368
Endogenous development motivation	"Whether to borrow from the industry support fund", "Whether to start a business independently", "Microloans for industry or self-employment", "Whether to participate in employment training", "Are there any employed persons (except working independently in other provinces)". The first four items of "Yes"=1; "No"=0, and finally One item of "Yes"=0.5, "No"=0, And the variable is obtained by adding the assignments.	1.8528	1.1354
The nationality of the head of the household	Han nationality=0,Yi nationality=1,other minorities=2	1.0902	0.4064
The status of persons with disabilities	"Number of disabled people at home"	0.1331	0.34

The status of illnesses	"Whether hospitalized last year", "Yes"=1 ; "No"=0	0.2249	0.4178
The status of chronic diseases	"Number of chronic patients at home"	0.0488	0.2354
Wage income	The ratio of wage income to the net income of the family	0.3941	0.3276
The educational background of the head of the household	Elementary school and below=1; junior high school=2; vocational school, technical secondary school=3; high school=4; junior college and above=5.	1.1154	0.4269

4 Analysis of influencing factors

4.1 Multiple regression analysis

This part uses multiple regression analysis to estimate the factors affecting the poverty-return risk of poverty-alleviation households, and uses the stepwise regression method to test the robustness of the results. It can be seen from the regression results in Table 4 that the compliance of the hardened roads of the village at the level of 1% significantly reduces the probability of returning to poverty of poverty-alleviation households in the village. It shows that village infrastructure can help reduce the risk of returning to poverty of poverty-alleviation households.

The endogenous motivation of farmers has a significant impact on the probability of returning to poverty at the 1% level. The higher the endogenous motivation, the lower the probability of returning to poverty. It shows that the prompting ambition can not only help farmers get rid of poverty, but also prevent them from falling into poverty again.

The per capita GDP of the county at the level of 5% significantly reduces the probability of returning to poverty of poverty-alleviation households. The higher the level of economic development in a region, the lower the incidence of poverty. The development of the county economy has brought the prosperity of the secondary and tertiary industries, and brought a lot of employment opportunities for the poor. At the same time, it has increased the county's fiscal revenue, allowing the government to have more funds to invest in the construction of poverty-stricken areas. A large number of agricultural populations gathered in cities and towns, alleviating the contradiction between population and land in the countryside.

The educational background of the head of household has no significant impact on the probability of returning to poverty, which may be because most of the survey samples have educational backgrounds of elementary school and below, and the education gap is small.

In the health indicators, the number of disabled persons in the family has significantly increased their probability of returning to poverty at the level of 10%. Having a disabled person in the family will lead to a lack of corresponding labor at home. Although there is a subsidy policy for the disabled, it cannot completely fill the income reduced due to the lack of a labor. Therefore, families with disabilities are more likely to fall into poverty. Whether anyone in the family was hospitalized last year had no significant impact on the probability of returning to poverty. The new rural cooperative medical insurance in the sample area has full coverage. This shows that the "new rural cooperative medical insurance" full coverage policy formulated by the state has a significant effect on poverty alleviation, which is conducive to reducing the burden of medical care for farmers, reducing the risk of poverty-alleviation households returning to poverty due to illness, and consolidating the effect of poverty alleviation. The number of chronic patients at home has no significant effect on the probability of returning to poverty. It shows that the country's chronic disease subsidies and the contracted services of chronic disease family doctors are effective and play a positive role in consolidating the results of poverty alleviation.

The nationality of the head of household has no significant impact on the probability of returning to poverty. It may be that the living habits and ideologies of the ethnic groups living in this area have little difference.

The proportion of household wage income at the 1% level significantly reduces the probability of returning to poverty. Farmers working in enterprises can get a higher and more stable income than farming. Choosing non-agricultural employment can reduce the risk of returning to poverty of poverty-alleviation households.

The number of people enjoying the subsistence allowance policy significantly increased the probability of returning to poverty at the level of 10%, while the industrial targeted poverty alleviation policies had no significant effect on the probability of returning to poverty. The possible explanation is that due to the problem of selection bias, the condition of the rural households receiving the subsistence allowance is relatively poor, and the help of the subsistence allowance is not enough to get them out of the risk of returning to poverty. Instead, they may be negatively affected by welfare dependence, private transfer payment crowding out and subsidence of subjective social status, so enjoying the subsistence allowance policy increases the risk of returning to poverty of poverty-alleviation households. The effective implementation of industrial targeted poverty alleviation policies needs to rely on two important paths: rural household livelihood model and endogenous development motivation. The existing industrial targeted poverty alleviation policies may not meet these two points, resulting in unsatisfactory effects.

Table 4. Multiple regression analysis results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Transportation infrastructure	0.328*** (0.060)	0.289*** (0.056)	0.248*** (0.057)	0.279*** (0.059)	0.280*** (0.059)	0.315*** (0.059)	0.329*** (0.059)
Endogenous development motivation	0.036*** (0.011)		0.048*** (0.008)	0.038*** (0.009)	0.039*** (0.009)	0.042*** (0.009)	0.035*** (0.010)
Regional economic	-7E-06** (0.000)			-4E-06 (0.000)	-5E-06* (0.000)	-6E-06** (0.000)	-7E-06** (0.000)
Educational background	0.005 (0.030)						
Handicapped	0.062* (0.036)				0.074** (0.037)	0.063* (0.036)	0.063* (0.036)
Illnesses	0.025 (0.024)						
Chronic	0.006 (0.041)						
Nationality	0.011 (0.025)						
Wage income	0.123*** (0.035)					0.143*** (0.034)	0.124*** (0.034)
Subsistence allowance	0.012* (0.007)						0.012* (0.007)
Industrial policies	0.013 (0.029)						
Constant	0.660*** (0.106)	0.429*** (0.055)	0.480*** (0.056)	0.573*** (0.081)	0.574*** (0.080)	0.700*** (0.085)	0.683*** (0.085)
N	676	676	676	676	676	676	676

Note: The robust standard errors are in parentheses. *, **, and *** indicate that the significance level is 10%, 5%, and 1% respectively, the same below.

4.2 Stratified difference analysis

After estimating the overall effect, this article will conduct a stratified difference analysis in this section, which will help to further clarify the influence mechanism of each factor on the risk of returning to poverty. When conducting stratified difference research, this article will use quantile regression. In order to explore the heterogeneous effects of various influencing factors on farmers at different risks of returning to poverty, and to fully reflect the group differences of farmers at different risks of returning to poverty, this paper selects the significant independent variables in the above analysis and divides the dependent variables into four groups: low risk of returning to poverty group (QR_30), medium risk of returning to poverty group (QR_50), medium to high risk of returning to poverty group (QR_70), high risk of returning to poverty group (QR_90).

(1)~(4) in Table 5 are the stratified differences in the impact of various influencing factors on the risk of returning to poverty. From the results, it can be seen that the various influencing factors have significant heterogeneity in the risk of returning to poverty. Specifically, with the exception of two variables: the number of people with disabilities at home and the number of people with subsistence allowances at home, the other variables are all significant at a certain quantile.

The compliance status of hardening roads in the village is not significant for farmers in the low-risk group. The coefficients of the medium to high risk of

returning to poverty group and the high-risk group are greater than those of the middle-risk group. This means that the construction of hardened roads can reduce the risk of returning to poverty, but it has a more obvious effect on farmers with high risk of returning to poverty.

Similarly, as the quantile continues to increase, the coefficient of endogenous development momentum also continues to increase, which shows that prompting ambition is more effective for farmers who are at higher risk of returning to poverty.

The per capita GDP of the county can significantly reduce the risk of returning to poverty in the middle and middle to high risk of returning to poverty group, but it has no significant effect on the low-risk and the high - risk group. The possible explanation is that the higher quality of farmers in the low-risk group makes them not confined to their development in the county. Farmers in the high-risk group cannot seize the opportunities brought about by county development due to their poor endowments, and can only confine themselves to the village where they are located.

The proportion of wage income only has a significant negative impact on farmers in the high-risk group. This shows that the higher risk of returning to poverty of farmers in the high-risk group is mostly because the family does not have a stable source of income and the family income is not high. For other farmers whose risk of returning to poverty is relatively low, increasing their wage income alone cannot reduce the risk of returning to poverty. The risk of returning to poverty may come from other sources.

Table 5. Quantile regression analysis results

	(1) QR_30	(2) QR_50	(3) QR_70	(4) QR_90
Transportation infrastructure	-0.050 (0.057)	-0.329*** (0.099)	-0.810*** (0.170)	-0.488*** (0.119)
Endogenous development motivation	-1.4E-05 (0.000)	-0.002* (0.001)	-0.011* (0.006)	-0.177*** (0.038)
Regional economic	-1.5E-08 (0.000)	-1.6E-06* (0.000)	-1E-05*** (0.000)	-1E-05 (0.000)
Handicapped	-3.5E-06 (0.000)	-3.4E-04 (0.007)	0.044 (0.059)	0.136 (0.126)
Wage income	-4E-05 (0.000)	-0.005 (0.005)	-0.032 (0.028)	-0.278*** (0.099)
Subsistence allowance	8.9E-07 (0.000)	6.5E-05 (0.001)	0.017 (0.017)	0.025 (0.021)
Constant	0.050 (0.057)	0.374*** (0.100)	1.117*** (0.199)	1.692*** (0.245)
N	676	676	676	676

5 Conclusion

Poverty alleviation is not about helping the “temporary poverty”, but helping poor households to get rid of poverty stably. Helping the impoverished population in ethnic minority regions to get rid of poverty is a time-critical task. While the government is seizing the task of eradicating absolute poverty, it cannot ignore the risk of returning to poverty faced by poverty-alleviation households in ethnic minority regions. With the help of the survey data of 676 poverty-alleviation households in Liangshan Prefecture and the vulnerability as expected poverty (VEP), this paper identifies the risk of poverty-returning of poverty-alleviation households in ethnic minority regions and further analyzes its related influence mechanism. The results found that most of the poverty-alleviation households in Liangshan Prefecture have a low risk of returning to poverty, and only 13% of the poverty-alleviation households in the entire district have a probability of returning to poverty above 60%. The impact mechanism shows that the village hardening road compliance status, endogenous development motivation, county per capita GDP, and the proportion of wage income are negatively correlated with the risk of poverty-returning households in Liangshan prefecture, the number of people with disabilities in the family and the number of people enjoying the subsistence allowance policy are positively correlated with the risk of poverty-stricken households. However, this effect has group heterogeneity, which is specifically manifested as: The compliance status of the hardened road in the village is more conducive to reducing the risk of returning to poverty for the poverty-alleviation households with a higher poverty-return risk, and it is not significant for the group of poverty-alleviation households with the lowest poverty-return risk. Endogenous development motivation is not significant for the group with the lowest poverty-return risk, and has a more obvious effect on the group of poverty-alleviation households with higher risk of returning to poverty. County per capita GDP is not significant for groups with the lowest and highest risk of returning to poverty. The proportion of wage income is only significant for groups with the highest poverty-return risk.

Based on the above conclusions, this article mainly proposes policy recommendations from the aspect of industrial development. First, industrial roads can be built for villages with relatively concentrated industries to ensure that poverty-alleviation households get rich through industrial development and improve their resilience against poverty. Secondly, poverty alleviation industrial parks can be developed in poor counties to drive poverty-alleviation households to increase their wage income, reduce the family’s economic vulnerability, and achieve the goal of stabilizing poverty alleviation. Finally, actively applying big data, new media and other emerging technologies to industrial development in impoverished areas, and achieve the goal

of reducing the risk of returning to poverty and rural revitalization by focusing on industrial development.

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