

# The Impact of Rural Labor Migration on Relative Household Poverty: An Empirical Analysis Based on China Household Longitudinal Survey Data (CFPS)

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**Abstract:** Based on the data of China Household Tracking Survey (CFPS) in 2016 and 2018, this paper forms a balance panel by using ordinary least squares (OLS). The model and the Probit model are empirical and study the impact of rural labor mobility on relative household poverty. The findings suggest that rural labour mobility contributes to reducing relative household poverty and remains reliable after robustness tests by changing the measures of the interpreted variables. Therefore, it is necessary to reasonably guide the mobility of rural labor, improve the quality of labor quality, and reduce the relative poverty of families.

**Keywords:** Rural labor mobility, Relative poverty, Influencing factors, Empirical analysis.

## 1. Introduction

After China built a moderately prosperous society in 2020, China got rid of the dilemma of absolute poverty, has entered the "post-moderately prosperous era" with relative poverty and spiritual poverty as the main manifestations. The Fourth Plenum of the 19th Central Committee of the Communist Party of China proposed to "establish a long-term mechanism to solve relative poverty". Relative poverty can be changed and adjusted in the concept and measurement of poverty lines, different groups of people and dimensions, and different countries have different measurement standards. In any case, helping the people to lift themselves out of relative poverty is a problem that our country is currently facing. In general, the specific practice of China's relative poverty management will become a long-term undertaking with rich content and ambitious goals.

With the continuous advancement of rural revitalization proposed in the "Thirteenth Five-Year Plan" report, more and more people have achieved poverty alleviation, in the context of the continuous development of urbanization, rural labor force into the city to work has become the main method of labor poverty alleviation, rural labor flow will further expand the scale of the city, improve the industrial structure, accelerate the urbanization process, reduce the incidence of poverty, thereby promoting the development process of the city. Further thinking, while the flow of rural labor promotes urban development and solves absolute poverty, what effect does it have on the current relative poverty of households in Chinese society? It is particularly important to study the impact of labor mobility on the relative poverty of working households, and answering such questions has important theoretical and practical significance for promoting social development.

## 2. Research Review

A large number of scholars' research mainly focuses on the impact of rural labor mobility on economic development. Tan Chang [1] et al. based on the analysis of China Household Longitudinal Survey data (CFPS) in 2018 showed that the

mobility of rural labor significantly promoted the common prosperity of rural households, and it was achieved by using the ordered response model Ologit and propensity value matching (PSM) method, the conclusions are still robust and reliable. Liu Chenhui [2] et al. investigated the impact of different types of labor mobility on regional economic disparities by constructing peripheral models, and found that skill matching is a key factor in whether the regional economic gap formed by labor mobility is stable, and labor mobility can promote the convergence of regional economic gaps, but when the agglomeration effect of high-skilled workers and technology spillover Labor mobility does not necessarily promote the convergence of regional economic disparities. Zhu Yaling [3] et al. used the China Labor Force Dynamic Survey Data (CLDS) for empirical testing, and the results showed that rural labor mobility induced income and cost effects, which had a positive impact on family development enjoyment consumption and a negative effect on survival consumption, and could significantly improve household consumption structure overall. Li Baojun, Luo Jianchao [4] Based and the propensity score matching method (PSM), two scholars found that rural labor mobility has a significant multi-dimensional poverty reduction effect on rural households. Although there is a large number of studies on the impact of labor mobility on economic development and absolute poverty, the research on labor mobility on relative poverty is not complete.

Fuchs Victor [5] (1967) first proposed the concept of relative poverty, after which the understanding of poverty in economics gradually shifted from absolute poverty to relative poverty. Townsend [6] (1979) rejects absolute poverty without the necessities of life, arguing that poverty will only be formed due to the lack of resources, and that poverty will not be formed if the population cannot reach the average living standard of the general public, and the relativity of poverty is absolute, that is, it will exist in any society and at any time. With the introduction of relative poverty, more scholars began to study how to define relative poverty and how to change the situation of relative poverty. Wang Sangui [7] others proposed to formulate a multi-dimensional relative poverty standard to measure relative poverty from multiple dimensions such as

income, education, health and living standards. Finally, it is concluded that in the initial stage of relative poverty, it is necessary to implement the "urban and rural two lines", that is, the relative income poverty line of urban and rural residents should be determined according to 40% of the median per capita disposable income of urban and rural residents. Zhou Li [8] draws on international experience and proposes a trial calculation of China's relative poverty line through C FPS data, and the calculated (adult equivalent) per capita household disposable income is less than 50% of the median disposable income of national residents through household size weighting, which can be regarded as relative poverty. Significant progress has been made in measuring relative poverty and related research, but little research has been done from the perspective of the impact of rural labour mobility on relative household poverty.

In summary, there is still room for expansion in the existing literature on the impact of rural labor mobility on relative household poverty. First, from the perspective of research content, the current effect on rural labor mobility is based on absolute poverty discussions, which is sometimes led into the dilemma of linear thinking. It ignores that after the completion of absolute poverty in our country, the relative poverty of families is also waiting to be solved; Second, scholars rarely use data models to analyze the relationship between labor mobility and relative poverty. The main marginal contributions of this project are as follows: first, the impact of labor mobility on relative household poverty is studied from the perspective; Secondly, the relative poverty of households is analyzed in detail, and the measures of relative poverty are selected; Finally, the empirical analysis of China Household Tracking Survey Data (CFPS) was used to summarize the relationship between the two influences and make relevant suggestions. Therefore, based on the CFPS data of 2016 and 2018, this project intends to construct a relative poverty line and analyze rural labor mobility, and use models to prove and analyze the effect of rural labor migration on relative household poverty.

### 3. Theoretical Analysis

According to the Todaro model (Todaro, 1969), agricultural laborers moved to cities mainly because of the difference in expected income between urban and rural areas, and when the difference was greater, the more people flowed into the city. A large number of laborers choose to work in cities in anticipation of higher wages and living standards, which has led them to shift from inefficient agriculture to more efficient industries and services, thereby increasing economic incomes [9]. In this process, the theoretical mechanism of rural labor mobility affecting relative poverty is mainly reflected in the following two aspects: First, rural labor can not only obtain higher wage income, but also obtain better public facilities and education, and improve the quality of life. The "2021 Migrant Worker Monitoring and Survey Report" shows that in 2021, the average monthly income of migrant workers abroad in China was 5,013 yuan. While the monthly income of migrant workers has increased, the education of their children has also been greatly improved, and the school attendance rate of children who migrate with them in the compulsory education age is 99.6 percent, an increase of 0.2 percentage points over the previous year, and the poverty situation of families has been greatly improved. Second, the continuous influx of rural labor into the county is conducive to their capital accumulation, so that the next generation is no

longer migrant workers, obtain better living conditions, and improve the endogenous motivation of migrant workers. From this a research hypothesis:

Research hypothesis: Rural labor mobility promotes improvements in relative household poverty.

## 4. Model Construction, Variable Selection and Data Sources

### 4.1. Model construction

To examine the impact of rural labour mobility on relative household poverty, the following econometric model is developed:

$$\text{Poverty}_{it} = \alpha_0 + \gamma \text{Migration}_{it} + \beta X_{it} + \varepsilon_{it} \quad (1)$$

where the explanatory variable  $\text{poverty}_{it}$  represents the relative poverty status of the family  $i$  in year  $t$ ; The core explanatory variable  $\text{Migration}_{it}$  represents the rural labour mobility of households in year  $t$ ;  $X_{it}$  represents the control variables at the head of household level and at the household level that have an impact on the relative poverty of households; The coefficient  $\gamma$  reflects the impact of rural labor mobility on the relative poverty of households, which is the coefficient that this study focuses on.  $\varepsilon_{it}$  is a random perturbation item.

### 4.2. Variable selection

#### 4.2.1. Explanatory variables

The core explanatory variable in this paper is rural labor mobility, i.e. the presence or absence of migrant labor in households. First, by removing the urban sample in the CFPS database, and then screening out the data of "migrant work" every year, it is a proxy variable for rural labor mobility. Among them, since "going out to work and doing farm work" was a combined problem in 2016, in order to accurately obtain the data of "farmers going out to work", referring to Yin Zhichao's [10] practice, according to the jump relationship of the questionnaire, the families who answered the question of "the amount of part-time work sent home" were identified as labor-migrant families, and in Consistency in the definition of this variable was maintained in the 2018 data.

#### 4.2.2. Control variables

Considering that this paper mainly studies the relative poverty of households, and refers to the selection of control variables by Gao Mengtao [11] et al., this study selects control variables from the household head and household level. Among them, the control variables at the head of household level include age, gender, years of education, whether he is married, whether he is employed, health status; Control variables at the household level included household size, net income per capita, proportion of elderly people in households, and proportion of children in households.

#### 4.2.3. Variables to be explained

This paper mainly studies the impact of labor mobility on household relative poverty, and the interpreted variable is household relative poverty. Most scholars choose to use the average of disposable income or 40%~60% of the median to measure the relative poverty line, but considering that the average is susceptible to extreme values, this paper chooses to refer to the relative poverty line set by Wang Sangui [7] and Gao Mengtao [11] and other scholars, that is, to calculate the

per capita net income of rural households nationwide, and take 40% of the median Confirm whether the sample households are in static relative poverty for the poverty line. If the income of the sample household exceeds 40% of the median net income of rural households, the household is considered not to be in relative poverty; Conversely, the family is considered to be in relative poverty.

The main variables of this study and their descriptions are shown in Table 1, and their statistical descriptions are shown in Table 2.

### 4.3. Data sources

The data in this paper are mainly derived from the China Household Longitudinal Survey (CFPS) funded by Peking

University and the National Natural Science Foundation of China and conducted by the China Social Sciences Survey Center of Peking University, which reflects the changes in China's society, economy, population, education and health through tracking and collecting data at the three levels of individuals, families and communities. Among them, there are detailed data on household migrant data and income and expenditure in the family-level questionnaire, which can better provide data support for this study. The data has been tracked since 2010 and accessed every two years, and data are currently available up to 2018. Therefore, this study mainly uses data from 2016 and 2018 to form a balanced panel. After processing and combining the missing values, outliers and extreme values in the data, 3012 valid samples were obtained.

**Table 1.** Main variables and descriptions of this study

The variable name		Variable definitions
Rural labour mobility		Whether there is labor mobility (yes=1, no=0).
Head of household level	Age/years	Age of the head of household
	gender	Gender of the head of household (male=1, female=0)
	Years of education/years	Years of education for the head of household
	Whether you are married	Whether the head of the household is married (married = 1, unmarried = 0)
	Whether or not to be employed	Whether the head of the household is employed (employed = 1, unemployed = 0).
	Health status	Health status of the head of the household (value 1~5, the larger the value, the better the health status)
Family level	Family size/person	Number of household sizes
	Net income per household	LN (Gross Household Income/Household Size)
	The proportion of elderly people in the household	Number of people over 60 years of age in the household/size of the household
	Proportion of children in the household	Number of persons under 14 years of age in the household/size of the household
Families are relatively poor		Whether the per capita household income exceeds 40% of the national median per capita household income of rural households, and does not exceed, the value is 1; Exceeded, the value is 0

**Table 2.** Descriptive statistics of the main variables of this study

variable	Sample size	mean	standard deviation	minimum	maximum
Rural labour mobility	3,012	0.500	0.500	0	1
Age/years	3,012	50.22	11.56	18	87
gender	3,012	0.527	0.499	0	1
Years of education/years	2869	6.353	3.978	0	19
Whether you are married	3,008	2.210	0.807	1	5
Whether or not to be employed	3,003	1.222	0.735	-8	3
Health status	3,012	3.169	1.346	-8	5
Family size/person	3,012	4.101	1.890	1	14
Net income per household	3,011	15055	18256	0	400000
The proportion of elderly people in the household	2,942	0.166	0.330	0	3
Proportion of children in the household	2,942	0.303	0.382	0	3
Families are relatively poor	3012	0.114	0.317	0	1

## 5. Empirical Analysis

### 5.1. Regression analysis

Based on the 2016 and 2018 CFPS databases, this study mainly uses the ordinary least squares (OLS) model for empirical analysis, and based on the relative poverty line divided under the 40% standard. The impact of rural labour mobility on relative household poverty was studied and data from Table 3 were obtained.

Table 3 shows the regression results based on the OLS model. Specifically, after controlling for the relevant

variables at the head of household level and the household level, the coefficient of influence of the core explanatory variable rural labor mobility on the relative poverty of the households of the interpreted variable was negative, that is, as rural labor mobility intensified, the relative poverty of households weakened and was 1%. This indicates that labour mobility has a significant impact on relative poverty. This verifies the poverty alleviation effect of labor outflow, which is consistent with the hypothesis proposed in the previous research paper, indicating that as the number of rural laborers going out to work increases, the relative poverty of

households will gradually weaken and the quality of life will also improve.

**Table 3.** OLS model regression results

	<b>Families are relatively poor</b>
<b>Rural labour mobility</b>	-0.03060*** (0.01137)
<b>age</b>	-0.00001 (0.00059)
<b>gender</b>	0.02966** (0.01208)
<b>Years of education</b>	-0.00690*** (0.00163)
<b>Whether you are married</b>	-0.00363 (0.00806)
<b>Whether or not to be employed</b>	0.00559 (0.00731)
<b>Health status</b>	0.01428*** (0.00491)
<b>Family size</b>	0.00161 (0.00358)
<b>Net income per household</b>	-0.00000*** (0.00000)
<b>The proportion of elderly people in the household</b>	0.05713*** (0.02099)
<b>Proportion of children in the household</b>	0.02329 (0.01969)
<b>Constant terms</b>	0.14244*** (0.04124)
<b>Sample size</b>	2791
<b>R2</b>	0.07595

Note: \*, \*\*, \*\*\*\* indicate that they are significant at the level of 10%, 5% and 1%, respectively; Standard error in parentheses.

**Table 4.** Robustness test results

<b>variable</b>	<b>Probit model</b>
	<b>Families are relatively poor</b>
<b>Rural labour mobility</b>	-0.166** (-2.54)
<b>age</b>	-0.008*** (-3.37)
<b>gender</b>	0.053 (1.03)
<b>Years of education</b>	-0.004 (-0.62)
<b>Whether you are married</b>	0.008 (0.24)
<b>Whether or not to be employed</b>	-0.002 (-0.05)
<b>Health status</b>	0.006 (0.30)
<b>Family size</b>	0.027* (1.79)
<b>Net income per household</b>	-0.000*** (-6.41)
<b>The proportion of elderly people in the household</b>	-0.187** (-2.42)
<b>Proportion of children in the household</b>	-0.159** (-2.05)
<b>Constant terms</b>	0.590*** (3.49)
<b>Sample size</b>	2,791

Note: \*, \*\*, \*\*\*\* indicate significant at the level of 10%, 5%, 1%, respectively, with the t statistic in parentheses.

## 5.2. Robustness test

To further improve the reliability of the results, robustness

tests are carried out in this paper.

After drawing on the practices of Cheng Witt [12] and

others, this paper raises the measure of relative poverty from 40% to 60% of the per capita net income of rural households, that is, the per capita net income of households is less than 60% of the median. For relative poverty, vice versa, it is not counted. In addition, in the robustness test, the variables were reduced by 1% and 9.9%. The following regression is performed for each variable after changing the relative poverty line, and Table 4 shows the regression results based on the Probit model.

As can be seen from Table 4, after replacing the measure of the relative poverty line, the coefficient of rural labor mobility for the core explanatory variable is -0.166, which is still negative and significant at the level of 5%, that is, as the number of rural labor mobility increases, the relative poverty of households is decreasing, and rural labor mobility promotes the improvement of relative poverty of households. The regression results of this study were robust and reliable.

## 6. Conclusions and Policy Recommendations

### 6.1. Conclusion

Based on the China Household Tracking Survey (CFPS) data of 2016 and 2018 rural households in 2018 form a balanced panel, by using the ordinary least squares (OLS) model and sum The Probit model is empirical and robustness tested to study the impact of rural labor mobility on relative household poverty. The results show that rural labour mobility contributes to the reduction of relative poverty among households, based on the relative poverty lines under the 40 per cent and 6 per cent criteria. In the robustness test, it was found that in terms of significance level, the 40% standard was more effective than the 60% standard.

### 6.2. Policy recommendations

On the one hand, it is necessary to speed up urbanization, realize "urban-rural integration" at an early date, improve urban infrastructure construction and public services, strive for more welfare policies for farmers, make them have better income, better treatment, and a greater sense of belonging to the city, so that the lives of migrant workers will be more stable. On the other hand, in the context of the implementation of land transfer, it is more necessary to increase investment in agriculture and scientific and technological construction, improve relevant policies, provide more non-agricultural jobs for farmers, and reasonably guide the flow of rural labor, so as to promote economic development and improve the relative poverty of families. In short, it is necessary to jointly promote the stability of rural labor mobility and employment through multifaceted changes, so as to improve the relative poverty of households.

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## References

- [1] TAN Chang, WU Haitao, PENG Yan. The impact of rural labor mobility on the common prosperity of rural households[J/OL]. *Agricultural Resources and Regional Planning in China*.
- [2] LIU Chenhui, CHEN Changshi Labor mobility, skill matching and regional economic gap[J] *Economic Research Journal*, 2022, 57(07): 45-63.
- [3] ZHU Yaling, ZHANG Bin, MA Yifei The impact of rural labor migration on household consumption structure[J]. *Consumer Economics*, 2022, 38(03): 52-63
- [4] Li Baojun, Luo Jianchao An empirical study on the impact of rural labor mobility on multidimensional poverty of rural households[J]. *Statistics and Decision*, 2022, 38(08): 22-26. DOI:10.13546/j.cnki.tjyj.2022.08.004
- [5] Fuchs V R. Redefining poverty and redistributing income[J]. *The Public Interest*, 1967, 14(08): 88.
- [6] Townsend P. Poverty in the United Kingdom: A survey of household resources and standards of living [M]. California: University of California Press, 1979.
- [7] Wang Sangui, Sun Junna China's Relative Poverty Standards, Measurement and Targeting after the Comprehensive Construction of a Moderately Prosperous Society: An Analysis Based on the Data of 2018 China Household Survey [J]. *China Rural Economy*, 2021(03): 2-23
- [8] Zhou Li International experience and enlightenment of relative poverty criterion delineation[J] *People's Forum · Academic Frontiers*, 2020(14): 70-79. DOI:10.16619/j.cnki.rmltxsqy.2020.30.019
- [9] YIN Zhichao, LIU Taixing, ZHANG Cheng The influence of rural labor migration on household savings rate[J] *China Industrial Economics*, 2020 (01): 24-42. DOI:10.19581/j.cnki.ciejournal.2020.01.003
- [10] YIN Zhichao, LIU Taixing, YAN Yu Whether Labor Mobility Can Alleviate the Mobility Constraints of Farmers: An Empirical Analysis Based on the Perspective of Social Network [J]. *China Rural Economy*, 2021, No.439(07): 65-83
- [11] Gao Meng Tao The alleviation effect of digital economy development on relative poverty of households[J]. *China Circulation Economy*, 2023, 37(01): 24-37. DOI:10.14089/j.cnki.cn11-3664/f.2023.01.003
- [12] CHENG Weit, WU Haitao, JIANG Fan Measurement and decomposition of multidimensional relative poverty of urban and rural households[J] *Statistics and Decision*, 2021, 37 (08): 68-72. DOI:10.13546/j.cnki.tjyj.2021.08.014