The Impact of Education on the Intergenerational Transmission of Poverty in Relatively Impoverished Areas

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Abstract:

This article utilizes the 2018 CLDS (China Labor-force Dynamics Survey) data, integrating the highest educational attainment and occupational level differences between parents and their children, along with variables such as region, gender, and age into a unified analytical framework. It employs the Logit model to investigate the effects of intergenerational educational mobility and occupational mobility on the intergenerational transmission of occupational class. The empirical results demonstrate that in relatively impoverished areas, there is a strong inheritance of occupational class. Educational advancement significantly promotes class mobility among the relatively impoverished population. Furthermore, the greater the educational leap, the more significant is the occupational class mobility. An increase in one tier of educational inheritance corresponds to a more pronounced inheritance of class status.

Keywords: Educational Disruption, Relative Poverty, Class Intergenerational Transmission, Poverty Intergenerational Transmission, Educational Poverty Alleviation

1 Introduction

In the report of the 19th National Congress of the Communist Party of China, General Secretary Xi Jinping included targeted poverty alleviation as one of the three major battles. Under the leadership of the Communist Party of China, regional overall poverty in the country has been addressed, accomplishing the arduous task of eliminating absolute poverty. However, the economic development level of some areas that have shed their poverty status is still not high, and relative poverty continues to exist dynamically. In recent years, due to objective factors such as the pandemic, the overall employment environment has deteriorated, and the concept of "education being useless" has reappeared. This is especially true in impoverished areas, where the primary issues are employment and survival. Many researchers have found that due to high birth rates and low human capital accumulation rates, rural areas in China are still in a Malthusian stable state. The return on education and education level still exhibit the Matthew effect, increasing with the increase of income level. The accumulation of human capital is crucial for improving the sustained poverty of low-income rural households in China.

Therefore, exploring the impact of educational factors on intergenerational poverty transmission in relatively impoverished areas is undoubtedly of great significance in providing suggestions for poverty alleviation work.

2 Conceptual Definitions

2.1 Poverty and Relative Poverty

Relative poverty is manifested not only economically but also socially. In contrast to absolute poverty, which refers to a situation where income is insufficient to maintain the minimum standard of living, relative poverty pertains to the living conditions maintained when an individual or family's income falls below a certain degree compared to the average societal income. There is no fixed standard for relative poverty; it is defined based on the income gap between low-income individuals and other members of society.

In this study, two samples were selected to define relative poverty: individuals whose per capita disposable income in 2018 was below 40% of the national median and those whose income was below 60% of the national average. This threshold aligns with the eligibility criteria for most regional public rental housing, thereby expanding the scope of the relatively impoverished population and adapting to new circumstances.

2.2 Intergenerational Transmission of Pover-

ty

American economists studying the process of poverty among the long-term impoverished discovered the phenomenon of intergenerational poverty transmission, thus introducing the concept of "intergenerational transmission of poverty" in the early 1960s. Intergenerational transmission of poverty refers to the transmission of poverty and its related factors within a family, from parents to their children, causing the offspring to replicate their parents' circumstances in adulthood. It also denotes the continuation of poverty and its causative conditions and factors across generations within a certain community or class, leading the descendants to experience the same impoverished conditions [1] as their predecessors.

3 Literature Review

In recent years, as the battle against poverty progresses, consolidating the foundation for poverty alleviation and preventing large-scale relapse into poverty have become the next goals. The impact of education on the intergenerational transmission of poverty has increasingly attracted the attention of numerous scholars. Based on existing research, Chinese scholars have made significant discoveries.

First, regarding the theoretical research on intergenerational transmission of poverty, it is seen as a vicious hereditary chain where parents pass on poverty and adverse factors to their children. In essence, intergenerational transmission of poverty is the inheritance and replication of poverty status across generations.

Second, concerning the quantitative measurement of intergenerational poverty transmission, most literature typically uses income elasticity coefficients and intergenerational income transition matrices to measure the transmission of poverty. The income elasticity coefficient is calculated using a logarithmic income model for parents and children, indicating intergenerational income mobility. A higher intergenerational income elasticity coefficient suggests poorer income mobility and a stronger correlation between the incomes of parents and their children. Using CHNS data, China's overall intergenerational income elasticity coefficient was found to be 0.6, significantly higher than in the more welfare-secure Nordic countries. Intergenerational income transition matrices assess the intergenerational changes in income classes by observing the relative positions of parents' and children's incomes. Studies using transition matrices have shown a decreasing trend over time in China's probability of intergenerational poverty transmission.

Third, regarding the main factors and pathways influencing intergenerational poverty transmission, the Chronic Poverty Research Centre (CPRC) summarizes these as educational factors, demographic and health factors, social network relationships, and environmental factors. Studies by Wang Zhizhang and others in contiguous areas of extreme poverty found that family income, parental investment in children's education, and family structure have the most significant impact on the transmission of poverty across generations. Empirical research by Lu Shengfeng and others found that the probability of poverty transmission exhibits a "poorer get poorer" evolution, with overall high risks of intergenerational transmission, where the transmission risk between fathers and children is higher than between mothers and children. In terms of blocking pathways, literature suggests that education investment, fiscal expenditure, and urbanization are major blockage routes. Research by Duan Yide indicates that children's education significantly reduces the income influence of parents on their offspring, with each additional year of formal education reducing the probability of relative intergenerational poverty transmission by about 15%, highlighting education as a crucial factor in breaking the cycle of poverty.

Most literature on intergenerational poverty transmission quantitatively measures poverty primarily through income; research on the impact of educational mobility on occupational class mobility often considers the influence of a single year and studies the relative poverty sample based on approximately 50% of the per capita GDP median. Based on the literature review, this study will consider the impact of the span of educational mobility on occupational class mobility, use occupational class mobility as a criterion for determining intergenerational transmission phenomena, and define relative poverty based on 60% of the national per capita disposable income, further expanding the scope of the relatively impoverished population and adapting to new circumstances.

4 Research Design

4.1 Data Source

This study utilizes the 2018 China Labor-force Dynamics Survey (CLDS) data, collected and established by the Social Science Survey Center of Sun Yat-sen University through the China Social Science Survey Platform. The 2018 sample encompasses 29 provinces and cities in China, with a scale of 401 villages and communities, 14,214 households, and 23,594 individuals, providing national representation. This study filtered the database samples to obtain 2,314 samples with good representativeness.

4.2 Model Setting

In line with the research objectives and the characteristics

of the variables, this study plans to use the logit model for regression analysis:

In the model, represents the probability of achieving class mobility. If the occupational level of the offspring is higher than that of the parents, then is set to 1; otherwise, it is 0. indicates whether educational mobility has been achieved; if the educational level of the children surpasses that of the parents, then is 1; otherwise, it is 0. represents a group of control variables, which includes factors such as gender, age, and the number of siblings.

4.3 Definition of Variables and Indicators

Class Mobility	Set to 1 if offspring's occupational level is higher than their parents', 0 otherwise.
Class Inheritance	Set to 1 if offspring's occupational level is the same as their parents', 0 otherwise.
Offspring Education	Set to 1 if offspring's education level is high school or above, 0 otherwise.
Parental Education	Set to 1 if parents' education level is junior high school or above, 0 otherwise.
Gender	1 for male offspring, 0 for female.
Age	Offspring's age.
Number of Siblings	Number of siblings the offspring has.
Health Status	1 for sub-healthy/healthy offspring, 0 otherwise.
Employment Stability	Set to 1 if the offspring's most recent job lasted more than 2 years, 0 otherwise.
Social Capital	Set to 1 if offspring are very/fairly familiar with neighbors, locals, and other residents, 0 otherwise.
Offspring Vocational Education	Set to 1 if offspring received vocational education, 0 otherwise.
Medical Insurance	Set to 1 if offspring have purchased medical insurance, 0 otherwise.
Pension Insurance	Set to 1 if offspring have purchased pension insurance, 0 otherwise.
Unemployment Insurance	Set to 1 if offspring have purchased unemployment insurance, 0 otherwise.
Region	1 for eastern region, 2 for central region, 3 for western region.

5 Empirical Results and Analysis

5.1 Educational mobility significantly promotes class mobility among the relatively impoverished group.

Due to the lack of a clear definition and delineation for "relatively impoverished areas," this study employs two methods to filter and analyze the data.

Method one: The 2018 national median per capita disposable income was 24,336 yuan. Samples with income less than 24,336 * 40% were selected, resulting in 1,524 baseline samples.

Table 1: Basic Regression Results (1)

	(1)	(2)	(3)	(4)
	test1	test2	test3	test4
VARIABLES	workcross	workcross	workinheritance	workinheritance
educross	0.8198***	0.7880***		
	(4.49)	(3.98)		
eduinherit~e			0.5983***	0.5672***
			(4.03)	(3.60)
gender		0.0083		-0.0182
		(0.04)		(-0.11)
age		-0.0459***		0.0430***
		(-4.68)		(5.51)

brothers		0.0152		-0.0136
		(0.30)		(-0.36)
health		0.3151		-0.2256
		(1.64)		(-1.53)
stable		-1.5968***		1.1282***
		(-8.10)		(6.76)
SocialCapi~l		-0.0901		0.1615
		(-0.44)		(1.04)
medical		0.8738***		-0.6280***
		(3.49)		(-3.05)
endowment		-0.3159*		0.2169
		(-1.66)		(1.47)
Unemployment		0.1223		-0.8762*
		(0.21)		(-1.70)
Constant	-2.6827***	0.6809	1.3318***	-1.6931***
	(-17.98)	(1.40)	(16.67)	(-4.29)
Observations	1,524	1,524	1,524	1,524
z-statistics in parentheses				
Tips:1.The data in the table are Kendall rank correlation coefficientsτb。 *** p<0.01, ** p<0.05, * p<0.12.Robust error in parentheses。 3.(1)(3)is the result without control variables(2)(4)is the result of increasing the control variable。				

Table 1 (1) shows that without control variables, the coefficient for educational mobility is greater than 0, indicating that with each level of educational mobility, the probability of class improvement increases by 81.98%; (2) indicates that with control variables included, the coefficient for educational mobility remains positive, showing that each level of educational mobility raises the probability of class improvement by 78.8%; (3) points out that without control variables, the coefficient for educational inheritance is greater than 0, suggesting that for each level of educational inheritance, the probability of class inheritance increases by 59.83%; (4) demonstrates that with control variables added, the coefficient for educational inheritance is positive, indicating that each level of educational inheritance elevates the probability of class inheritance by 56.72%. The regression analysis demonstrates that educational mobility has a significant impact on achieving class mobility among the impoverished group.

Method two: The 2018 national median per capita disposable income was 28,228 yuan. Samples with income less than 28,228 * 60% were selected, yielding 2,314 baseline samples. The summary of the data for the related variables is as follows:

Table 2: Basic Regression Results (2)

	(1)	(2)	(3)	(4)
	test1	test2	test3	test4
VARIABLES	workcross	workcross	workinheritance	workinheritance
educross	0.8177***	0.8194***		
	(6.42)	(6.02)		
eduinherit~e			0.5777***	0.5262***
			(5.25)	(4.50)
gender		0.1004		-0.1635
		(0.72)		(-1.42)

age		-0.0382***		0.0422***
		(-5.46)		(6.97)
brothers		-0.0281		0.0178
		(-0.79)		(0.61)
health		0.3875***		-0.1543
		(2.95)		(-1.42)
stable		-1.2246***		0.9426***
		(-8.62)		(7.32)
SocialCapi~1		-0.1748		0.2238*
		(-1.26)		(1.94)
medical		0.9059***		-0.8991***
		(5.62)		(-6.38)
endowment		-0.1699		0.1285
		(-1.28)		(1.15)
Unemployment		0.0962		-0.6975**
		(0.26)		(-2.04)
Constant	-2.2735***	0.4932	1.0473***	-1.8088***
	(-21.76)	(1.42)	(17.57)	(-5.90)
Observations	2,314	2,314	2,314	2,314
VARIABLES				
Tips:1.The data in the table are Kendall rank correlation coefficientsτb。 *** p<0.01, ** p<0.05, * p<0.12.Robust error in parentheses。 3.(1)(3)is the result without control variables(2)(4)is the result of increasing the control variable。				

This approach uses 60% of the national median per capita disposable income, aligning with the access threshold for public rental housing in most regions, thereby expanding the category of the relatively impoverished group and increasing the sample size.

Table 2 (1) illustrates that without control variables, the coefficient for educational mobility is greater than 0, indicating that with each level of educational mobility, the probability of class improvement increases by 81.77%; (2) reveals that with control variables included, the coefficient for educational mobility remains positive, showing that each level of educational mobility raises the probability of class improvement by 81.94%; (3) highlights that without control variables, the coefficient for educational inheritance is greater than 0, suggesting that for each level of educational inheritance, the probability of class inheritance increases by 57.77%; (4) demonstrates that with control variables added, the coefficient for educational inheritance is positive, indicating that each level of educational inheritance elevates the probability of class inheritance by 52.62%. The regression analysis signifies that educational mobility has a significant impact on achieving class mobility among the impoverished group.

Table 3: Odds Ratios for Variables (1)

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Logistic regression                              Number of obs =  2,314
                                                 LR chi2(12)   = 273.28
                                                 Prob > chi2   = 0.0000
Log likelihood = -818.49065                      Pseudo R2     = 0.1431
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workcross	Odds ratio	Std. err.	z	P>|z|	[95% conf. interval]	
educross	2.942541	.7814206	4.06	0.000	1.748548	4.951849
eduinherita~e	1.399932	.3938471	1.20	0.232	.8065586	2.429842
gender	1.145804	.1600932	0.97	0.330	.8713237	1.506751
age	.9573995	.0069346	-6.01	0.000	.9439039	.9710881
brothers	.9676771	.0347692	-0.91	0.360	.9018749	1.03828
health	1.415436	.1873573	2.62	0.009	1.091991	1.834685
stable	.3077804	.0440992	-8.22	0.000	.2324233	.40757
SocialCapital	.8771651	.122552	-0.94	0.348	.6670475	1.153469
medical	2.287262	.373409	5.07	0.000	1.660934	3.149776
endowment	.9883923	.135385	-0.09	0.932	.7556767	1.292774
Unemployment	1.015395	.3705818	0.04	0.967	.4965672	2.07631
region	.6824057	.0545313	-4.78	0.000	.5834758	.7981094
_cons	2.987835	1.340085	2.44	0.015	1.240455	7.196679

Observing that the odds ratio for educational mobility is greater than 1 indicates a significant positive impact of educational mobility on class mobility among the relatively impoverished group. Hence, educational mobility substantially facilitates class mobility within this demographic.

5.2 The greater the span of educational mobility, the more pronounced its promotional effect on occupational class mobility.

For defining educational span, this study continues to use two methods of data analysis. The data includes samples where the 2018 national per capita disposable income is below 28,228 * 60%.

Method One: To convert education levels into ranks, and define illiteracy as 1, elementary school as 2, junior high school as 3, high school/technical school/junior college as 4, associate degree as 5, bachelor's degree as 6, and master's degree as 7.

Table 4: Basic Regression Results (3)

	(1)	(2)
	test1	test2
VARIABLES	workcross	workcross
educross	0.3584***	0.3822***
	(6.09)	(5.94)
gender		0.0856
		(0.61)
age		-0.0402***
		(-5.73)
brothers		-0.0287
		(-0.81)
health		0.3756***

		(2.86)
stable		-1.2256***
		(-8.64)
SocialCapital		-0.1680
		(-1.22)
medical		0.8979***
		(5.58)
endowment		-0.1735
		(-1.31)
Unemployment		0.0879
		(0.24)
Constant	-2.0525***	0.8083**
	(-25.85)	(2.38)
Observations	2,314	2,314
z-statistics in parentheses		
Tips:1.The data in the table are Kendall rank correlation coefficientsτbₒ *** p<0.01, ** p<0.05, * p<0.12.Robust error in parenthesesₒ 3.(1)is the result without control variables(2)is the result of increasing the control variableₒ		

Table 4 (1) shows that without control variables, the coefficient for educational mobility is greater than 0, indicating that with each level increase in educational mobility, the probability of achieving occupational mobility increases by 35.84%; (2) shows that with control variables included, the coefficient for educational mobility is greater than 0, with each level increase in educational mobility, the probability of achieving occupational mobility increases by 38.22%. The regression results demonstrate that the extent of educational mobility has a significant impact on occupational class mobility.

Method Two:To convert education levels into years of education and define illiteracy as 0 years, elementary school as 6 years, junior high school as 9 years, high school/technical school/junior college as 12 years, associate degree as 14 years, bachelor's degree as 16 years, and others as 19 years.

Table 5: Basic Regression Results (4)

	(1)	(2)
	test1	test2
VARIABLES	workcross	workcross
educross	0.0342***	0.0468***
	(3.86)	(4.73)
gender		0.1250
		(0.90)
age		-0.0411***
		(-5.87)
brothers		-0.0336
		(-0.95)
health		0.3665***
		(2.80)
stable		-1.2432***

		(-8.81)
SocialCapital		-0.1582
		(-1.15)
medical		0.9149***
		(5.71)
endowment		-0.1819
		(-1.38)
Unemployment		0.2203
		(0.61)
Constant	-1.9427***	0.9276***
	(-25.64)	(2.76)
Observations	2,314	2,314
z-statistics in parentheses		
Tips:1.The data in the table are Kendall rank correlation coefficientsτb。 *** p<0.01, ** p<0.05, * p<0.12.Robust error in parentheses。 3.(1)is the result without control variables(2)is the result of increasing the control variable。		

Table 5 (1) shows that without control variables, the coefficient for educational mobility is greater than 0, indicating that for each additional year of education, the probability of achieving occupational mobility increases by 3.42%; (2) shows that with control variables included, the coefficient for educational mobility remains greater than 0, with each additional year of education, the probability of achieving occupational mobility increases by 4.68%. The regression results indicate that the extent of educational mobility significantly affects occupational class mobility.

Table 6: Odds Ratios for Variables (2)

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Logistic regression                               Number of obs =   2,314
                                                  LR chi2(12)   = 262.68
                                                  Prob > chi2   = 0.0000
Log likelihood = -823.79047                       Pseudo R2     = 0.1375


    workcross │ Odds ratio   Std. err.      z    P>|z|     [95% conf. interval]
──────────────┼────────────────────────────────────────────────────────────────
          edu │  1.034055    .0115171     3.01   0.003     1.011726    1.056876
 eduinherita~e │   .6831058    .1130926    -2.30   0.021     .4938171    .9449523
       gender │   1.14997    .1606796     1.00   0.317     .8744852    1.51224
          age │  .9560438    .0069482    -6.19   0.000     .9425221    .9697594
      brothers │  .9633335    .0345431    -1.04   0.298     .8979545    1.033473
       health │  1.397905    .1846539     2.54   0.011     1.079045    1.810989
       stable │  .3041147    .0433777    -8.35   0.000     .2299458    .4022069
 SocialCapital │  .8949965    .1246733    -0.80   0.426     .6811593    1.175964
      medical │  2.277663    .3698829     5.07   0.000     1.656754    3.131274
     endowment │  .9686392    .1323179    -0.23   0.816     .7411162    1.266012
 Unemployment │  1.055453    .3833637     0.15   0.882     .5179211    2.150869
       region │  .6838683    .0546178    -4.76   0.000     .5847772    .7997505
        _cons │  6.719982    2.614332     4.90   0.000     3.134858    14.40517
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Observing that the odds ratio for educational mobility is greater than 1, it is clear that a greater span of educational mobility has a significant positive impact on the degree of occupational mobility for relatively impoverished groups. Therefore, the greater the span of educational mobility, the more pronounced its promotional effect on occupational

class mobility.

6 Conclusion and Recommendations

As society progresses, the aspiration for a better life endows education with profound significance. With the century-old plan where education is fundamental, the battle against poverty is advancing step by step with remarkable achievements. Beyond economic support and policy favoritism, strengthening the research on the relationship between education and intergenerational poverty transmission, understanding the essence and core of educational aid for poverty alleviation, and identifying precise targets are crucial for fundamentally implementing educational support for poverty alleviation.

This paper conducts an empirical study on the impact of the extent of educational mobility on occupational class mobility, shifting the traditional definition of intergenerational poverty transmission from income mobility to occupational class mobility. The empirical results reveal: first, educational mobility significantly facilitates class mobility among the relatively impoverished group; second, the greater the educational mobility span, the more significant its promotional effect on occupational class mobility.

Based on these findings, the study proposes the following recommendations:

(1)Establishing a stable and effective educational support mechanism is crucial for consolidating the achievements of education in poverty alleviation. It's essential to delve into the causes of intergenerational poverty transmission, clearly define the standards for relative poverty levels, formulate stratified and precise poverty alleviation policies, and implement categorized guidance.

(2)Creating a scientific mechanism to "prevent dropout and ensure attendance" can break the chain of intergenerational poverty transmission. Efforts should be made to encourage dropout students to resume their studies, aiming to achieve the goal that "no one is left behind."

(3)Improving educational infrastructure and establishing digital teaching are vital. Focus should be on the weak links in local education, build support platforms, address significant shortcomings, balance resources between regions and urban-rural areas, and promote equal and integrated education.

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