



Research on the Relationship between Intergenerational Income Mobility and the Development Level of County Economy in China

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Abstract. Based on data from the China Family Panel Studies (CFPS) between 2010 and 2018 and county-level socioeconomic indicators, this study examines the impact of county economic development on intergenerational income mobility in China and its underlying mechanisms. The findings show that: First, there is a significant negative correlation between county-level economic development and intergenerational income elasticity—that is, counties with higher GDP per capita exhibit stronger intergenerational income mobility, suggesting that regional economic development helps enhance the openness of social opportunities. Second, this relationship shows notable heterogeneity: intergenerational income elasticity is significantly lower in eastern regions and among urban household registration groups compared to central and western regions and rural registration groups, revealing structural spatial and urban–rural inequalities in intergenerational mobility in China. Mechanism analysis indicates that county economic development promotes intergenerational mobility consistent with an education-resource channel, and by leveraging higher levels of social capital (a moderating effect). Specifically, economic development increases the supply of educational resources at the county level, which in turn exerts a significant negative influence on intergenerational income elasticity. Moreover, in areas with higher social capital, the role of economic development in promoting intergenerational mobility is more pronounced. This study provides micro-level evidence for understanding equality of opportunity in the context of regional imbalance in China and suggests that, alongside promoting county economic development and public service equalization, attention should be given to cultivating inclusive social capital and breaking down institutional segmentation to achieve broader and sustainable upward mobility.

Keywords: Intergenerational Income Mobility, County Economy, Social Capital

1 Introduction

Intergenerational income mobility (IGIM) is a critical indicator of a society's equality of opportunity (Xie et al., 2022).^[1] High mobility implies that an individual's economic outcomes are less dependent on their parental background, which is a cornerstone for achieving equitable development and social justice. In the context of China's high-speed economic growth, the persistence of regional disparities, particularly at the county-level, has raised concerns regarding the equity of opportunity for upward mobility.

Recent policy directives, including those from the Third Plenary Session of the 20th CPC Central Committee, have emphasized enhancing public service equity and eliminating systemic barriers to mobility. However, existing empirical literature has predominantly focused on national or provincial-level dynamics, leaving a significant research gap regarding how microregional (county-level) economic development shapes income mobility.

This paper addresses this gap by examining whether counties with higher levels of economic development provide greater opportunities for income mobility across generations. Using nationally representative household survey data and county-level socioeconomic indicators, we explore the extent to which county economic contexts influence intergenerational income elasticity (IGE) in China (Hong & Gruijters, 2024).^[2]

2 Literature Review

The economic literature has long acknowledged the role of parental background in determining an individual's socioeconomic outcomes. The foundational work by Becker and Tomes (1979) formulated a theoretical model wherein parental investments in children's human capital mediate the intergenerational transmission of income.^[3] Solon (1992) provided one of the first robust empirical estimates of IGE in the United States, finding a relatively high persistence of income status across generations.^[4]

In the Chinese context, studies such as Zhang & Fan (2024) have examined intergenerational mobility using CFPS data confirming the existence of significant regional heterogeneity in IGE.^[5] Zhang(2010) emphasize that the urban-rural divide is a major determinant of mobility in China.^[6] Meanwhile, Corak (2013) establishes a robust negative correlation between income inequality and mobility, forming the so-called "Great Gatsby Curve".^[7]

However, few studies systematically link county-level development indicators to mobility outcomes. This paper seeks to fill this gap by examining how county economic capacity correlates with upward mobility for children from disadvantaged backgrounds, drawing on the theories of human capital and social capital.

3 Theoretical Framework

We propose that county-level economic development affects intergenerational income mobility through two primary channels:

Human Capital Accumulation: More developed counties may provide better access to quality education, healthcare, and skill formation opportunities, thereby enabling higher returns on children's abilities and effort, independent of family background (Yuan et al., 2025).^[8]

Social Capital Access: Economically vibrant counties often offer denser and more diverse social networks (Zhao & Hou, 2025), which reduce barriers to employment, promote job matching, and facilitate intergenerational transmission of opportunities beyond familial inheritance.^[9]

These mechanisms suggest a negative relationship between county development level and IGE: as development rises, the dependence of children's income on parental income may decrease.

4 Research Design

4.1 Data Sources

Micro-level data: We use the latest waves (2010, 2012, 2014, 2016, 2018) of the China Family Panel Studies (CFPS) conducted by Peking University, which provides detailed information on individual and family income, education, occupation, and demographics across China.

County-level indicators: County GDP per capita, urbanization rate, public education expenditure per capita, and other development indicators are sourced from the China County Statistical Yearbook (2000–2020) and National Bureau of Statistics datasets.

4.2 Variable Construction

Dependent Variable: Log of individual income for the child generation, adjusted to 2010 real prices.

Key Independent Variable: Log of parental income, estimated via retrospective questions or directly reported income.

County Development Index (CDI): Constructed via PCA combining GDP per capita, education resource, urbanization, and employment rates.

Control Variables: Age, gender, ethnicity, hukou status, education level, household size, and provincial dummies.

Social capital (county-level moderator). Social capital is measured at the county level using the density of registered social organizations (number of social organizations per 10,000 residents), sourced from county statistical/Civil Affairs records. Higher values indicate stronger local networks and civic engagement. This county-level measure is used in the interaction specification to examine whether the GDP–mobility association differs systematically across social-capital environments.

Measurement considerations for IGE: Estimates of intergenerational income elasticity (IGE) may be affected by measurement error in both parental and offspring income and by lifecycle bias if incomes are observed at non-comparable ages. Classical measurement error in parental income typically attenuates IGE toward zero, which would mechanically overstate mobility. Because our data do not allow a full correction, we interpret IGE primarily as a benchmark indicator and focus on the direction and relative comparisons across counties rather than the exact magnitude.

Social capital may itself be influenced by local economic development; thus, the interaction results are interpreted as heterogeneity in associations rather than exogenous causal moderation.

4.3 Sample Construction

Individuals aged 25–40 with both their own and at least one parent's income information available. Exclude non-labor income and outliers (top/bottom 1%) to mitigate noise.

5 Empirical Analysis and Results

5.1 Benchmark Regression Analysis: county Economic Development and intergenerational Income Elasticity

$$\log Y_i^{child} = \alpha + \beta_1 \log Y_i^{parent} + \beta_2 GDP_c + \gamma X_i + \delta_c + \varepsilon_i \tag{1}$$

We used OLS estimation method to perform regression analysis on the influence of parent income and county economic development level (expressed as a logarithmic value of GDP per capita) on the income of children. The results are shown in Table 1.

Table 1. Baseline regression results for county economic development and intergenerational income elasticity

Variable / specification	Coefficient	Significance	Interpretation
Log parental income	0.396	***	Positive intergenerational income persistence; parental income remains strongly associated with child income.
Log county GDP per capita	-0.062	***	Higher county economic development is associated with lower IGE and stronger intergenerational mobility.
Control variables	Included		Age, gender, ethnicity, hukou status, education level, household size, and provincial dummies.

Note: *** indicates statistical significance at the 1% level. OLS estimation is used; the dependent variable is log child income adjusted to 2010 real prices. The coefficients are reported from the benchmark regression discussed in the text.

The regression results show that the regression coefficient of parent income is 0.396, which is significantly positive, indicating that the intergenerational elasticity of income in the China sample is high. The per capita GDP coefficient of counties is -0.062, which is significantly negative, indicating that the IGE in economically developed areas is lower and the mobility is stronger, the results of control variables such as education years, household registration and family size are robust. Fig. 1 is a visual representation of the relationship between county GDP and IGE, in which the horizontal axis represents the per capita GDP (logarithm) of the county, the vertical axis represents the intergenerational elasticity of income (IGE), and the red line represents the linear fitting result, indicating that the higher the GDP, the lower the IGE, i.e. the enhanced mobility.

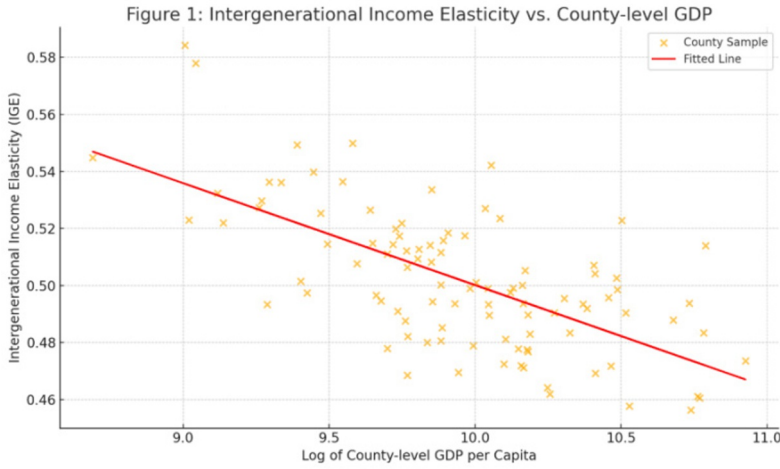


Fig. 1. The relationship between Intergenerational Income Elasticity and County-level GDP

5.2 Heterogeneity Analysis: Regional and Urban-Rural Differences

According to the assumption of heterogeneity analysis proposed in Chapter 4, we performed grouping regression on different sub-samples. The results of regression show that the mean value of IGE in the eastern region is the lowest (≈ 0.35), in the central region ≈ 0.42 , and in the western region ≈ 0.48 , with significant difference. The IGE level of urban household registration population is significantly lower than that of rural household registration population, which indicates that the urban upward passage is smoother. It can be clearly seen in the figure 2 that the intergenerational elasticity (IGE) is the lowest in the eastern region, indicating the highest mobility, the highest is in the west with relatively weak liquidity, the central part is in the middle and slightly to the west.

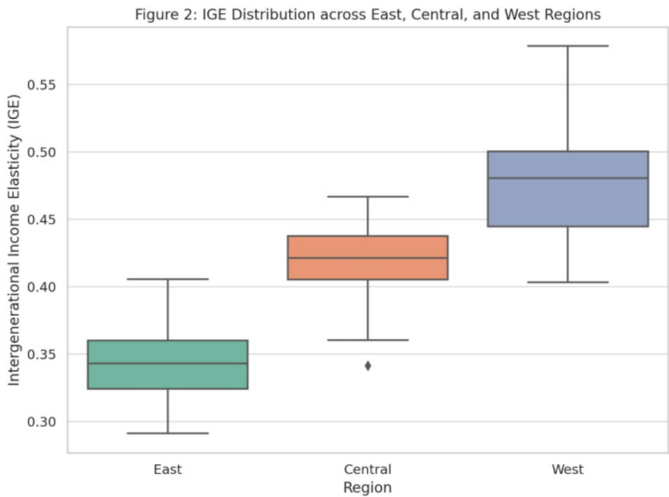


Fig. 2. box diagram of IGE in the east, middle and west.

5.3 Mechanism Evidence: Educational Resources as a Channel Proxy

According to the mediation model in Chapter 4, this part tests whether educational resources play a mediating role between county economic development and intergenerational mobility.

Using Baron & Kenny [1] three-step process, the steps are as follows:
Step 1 (path C): $IgE = \beta_0 + \beta_1 \times GDP + \text{control variable} + \varepsilon$ (total effect)
Step 2 (path A): $\text{educational resources} = \alpha_0 + \alpha_1 \times GDP + \text{control variable} + \varepsilon$
→ educational resources are significantly positive for GDP (+0.312 * * *).
Step 3 (Path B, C'): $IgE = \gamma_0 + \gamma_1 \times GDP + \gamma_2 \times \text{education resources} + \text{control variable} + \varepsilon$
→ significant negative correlation of education resources (-0.049 * * *). The GDP effect declined but was still significant.

The mediation pathway shown in Fig. 3 summarizes the estimated links among county-level economic development, education resources, and intergenerational income elasticity.

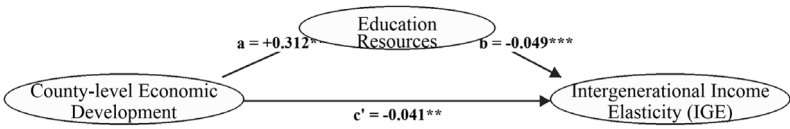


Fig. 3. Intermediary path map linking county-level economic development, education resources, and IGE

The mediation-style regressions are intended as suggestive evidence consistent with an education-resource channel, rather than a causal mediation decomposition. If county

GDP is endogenous (e.g., correlated with unobserved local institutions, migration selection, or historical factors), then the education-resource variable is also likely endogenous. Therefore, we avoid causal language such as “education partly explains the effect” and interpret the mechanism results as descriptive associations that rely on strong assumptions (no unobserved confounding between GDP, the channel proxy, and mobility).

To test the moderating effect of social capital, we introduce an interaction term into the benchmark model:

$$IGE = \alpha + \beta_1 \log(GDP) + \beta_2 SocialCapital + \beta_3 (\log(GDP) \times SocialCapital) + \gamma X + \delta_c + \varepsilon \quad (2)$$

The results show that the interaction coefficient is -0.022, which is significantly negative, indicating that in counties with higher social capital level, the positive impact of economic development on intergenerational mobility is stronger.



Fig. 4. Economic Development $\times$ Social Capital Interaction Diagram

Fig. 4. shows the marginal effect trend of county economic development on intergenerational income elasticity under two levels of social capital. For the areas with high social capital, the increase in GDP brings a greater decrease in IGE, indicating that the increase in liquidity is more significant. For the areas with low social capital, the impact of GDP increase on IGE is small, and social capital plays a regulatory role. In other words, the inhibiting effect of GDP growth on IGE in areas with high social capital is more pronounced, reflecting that social capital has a "multiplier" effect on economic resources. Its economic significance is that areas with high social capital are more likely to form a "virtuous circle": economic development strengthens social trust and cooperation, which in turn facilitates resource flow and opportunity opening, and thus accelerates intergenerational mobility. On the contrary, areas with low social capital may fall into the trap of "growth with locked opportunities", that is, economic growth fails to effectively translate into the improvement of social mobility. Therefore, the policy

interventions should focus particularly on the early stage of economic development or areas with low social capital, and gradually build a social foundation conducive to mobility through community building, public engagement and the nurturing of social organizations.

6 Policy Recommendations and Conclusions

6.1 Research Conclusions

This study investigates the relationship between the development level of county economy and intergenerational mobility of income, and combines the dual factors of educational resources and social capital. We propose and verify the three assumptions mentioned above:

First, the level of economic development in the counties significantly affects the intergenerational mobility of income. Our D-benchmark regression results show that the higher the county's GDP per capita, the less the income of the children is affected by the income of the parents, meaning that intergenerational mobility is stronger. Our findings support the hypothesis that regional development promotes social upward mobility and support H1.

In addition, the intergenerational elasticity in the eastern region is significantly lower than that in the central and western regions, and the IGE in urban households is lower than that in the rural areas, which directly proves the intergenerational mobility in China, presenting obvious geographical structural inequality. We found that the more developed the county economy is, the more adequate the allocation of educational resources will be through the three-step regression test. Educational resources will have a significant negative impact on IGE, which also indirectly enhances the rising opportunity of the offspring, verifying H2.

Finally, social capital has significant moderating effect. Our interaction model shows that in regions with higher social capital levels, the promotion of economic development on intergenerational mobility will be more significant. This also indicates that soft constraints such as institutional environment and community trust will exert a reinforcing effect on economic variables and support H3.

The empirical results of this study reveal a significant negative correlation between county-level economic development and intergenerational income mobility in China. This finding aligns with the mechanism of "inequality restraining mobility" as captured by the Gatsby Curve (Corak, 2013), observed here at the county level. However, what warrants further discussion is the underlying issue of the spatial solidification of opportunity structures. The higher intergenerational mobility observed in the eastern region and among urban household registration groups reflects not only disparities in resource endowments but also suggests that, in the process of economic development, access to opportunities may become "institutionally segmented" due to structural and institutional factors such as the household registration system and regional divisions. The moderating effect of social capital further demonstrates that simple economic growth cannot be translated into broad upward mobility opportunities without supportive social networks and institutional environments. Therefore, future research needs to further

identify which institutional or cultural factors exacerbate this spatial opportunity lock-in, particularly the micro-level isolation mechanisms operating within counties.

In addition, this study finds that social capital has significantly enhanced the role of economic development in promoting intergenerational mobility, and this conclusion has important governance implications. Social capital is essentially an informal governance resource, which can make up the gap in the implementation of the formal system at the grassroots level and promote information sharing and cooperation norms. However, social capital may also be exclusive, forming an insider advantage, but consolidating the status of specific groups. Therefore, the focus of discussion should be on how to guide social capital to play a "bridge" role rather than a "barrier" effect. The modernization of county governance not only needs economic development and improvement of public services, but also needs to break the closed social structure by cultivating inclusive social capital (such as community organizations, public participation platforms and cross-border cooperation networks), so that economic growth dividends can penetrate into vulnerable groups through open networks.

Mobility can also be measured using rank–rank slopes, intergenerational income correlations, or transition matrices, which may be less sensitive to functional-form assumptions and outliers than the log–log IGE. In this study, we focus on IGE as the most widely used benchmark in the literature. A systematic comparison across alternative mobility measures is left for future work.

6.2 Policy Recommendations

Based on the above empirical conclusions, we put forward the following policy recommendations in order to further enhance the intergenerational mobility of our income and help realize the goal of common prosperity.

The government should continue to increase financial transfer payments and infrastructure investment in counties in the central and western regions and underdeveloped regions. lagging economic development constrains the supply of public education and employment opportunities, which makes it difficult for offspring to surpass the socio-economic status of their parents, thus leading to the intergenerational perpetuation of poverty and inferior status.

By accelerating the balanced development of compulsory education, reforming the weak schools in rural areas and building the teachers' mobility mechanism, the quality of education supply in counties with lower levels of development can be improved and the gap in educational resources can be narrowed, so that children from families in different regions can obtain similar development channels even if they come from different starting points.

The government should enhance the supply of social capital, encourage the development of grassroots governance organizations, community voluntary services and educational public welfare projects, enhance the level of local governance and residents' mutual trust, build a weak ties network conducive to personnel training and horizontal information flow, and break the information and cognitive isolation of the bottom groups.

An intergenerational mobility monitoring mechanism should be established. For low-income, unemployed, single-parent and other family groups, precise assistance, education subsidies, childcare services and other means should be adopted to prevent them from falling into "intergenerational lock-in" due to lack of resources.

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