

Applied Economics

ISSN: 0003-6846 (Print) 1466-4283 (Online) Journal homepage: www.tandfonline.com/journals/raec20

The impact of intergenerational educational mobility on fertility intentions: evidence from China

Juan Yang & Zebing Yang

To cite this article: Juan Yang & Zebing Yang (2026) The impact of intergenerational educational mobility on fertility intentions: evidence from China, Applied Economics, 58:13, 2533-2547, DOI: 10.1080/00036846.2025.2479158

To link to this article: https://doi.org/10.1080/00036846.2025.2479158

Published online: 20 Mar 2025.

Submit your article to this journal

Article views: 522

View related articles

View Crossmark data

Citing articles: 1 View citing articles

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=raec20

APPLIED ECONOMICS
2026, VOL. 58, NO. 13, 2533–2547
https://doi.org/10.1080/00036846.2025.2479158

Routledge
Taylor & Francis Group

Check for updates

The impact of intergenerational educational mobility on fertility intentions: evidence from China

Juan Yang and Zebing Yang

Business School, Beijing Normal University, Beijing, China

ABSTRACT

Existing studies mostly examine how individuals' experiences of intergenerational mobility influence their fertility intentions, while research on the effects of regional intergenerational mobility remains limited. This article investigates the impact of regional intergenerational educational mobility (IGM) on fertility intentions using data from the China Family Panel Studies survey (CFPS). The findings indicate a significant positive relationship between IGM and fertility intentions. One of the critical mechanisms might be alleviating parenting cost pressure. This effect is primarily driven by a reduction in parental anxiety and status-seeking behaviours from higher IGM, which decreases household educational expenditures, easing the 'quality-quantity' trade-off in fertility decisions. Besides, the impact of IGM is more pronounced among highly educated individuals, men, and the agricultural population. These results highlight the crucial role of educational equity in shaping fertility preferences. By shifting the focus from individual mobility experiences to the openness of social structures, this study enriches the understanding of low fertility intentions. Current fertility promotion policies in China should also consider the fairness of educational opportunities.

KEYWORDS

Intergenerational educational mobility; offsprings' achievements; parenting costs; fertility intentions

JEL CLASSIFICATION

J13; I21; I24

I. Introduction

Low fertility rates have become a significant issue in many countries today. Historically, as a highly populous nation, China implemented a nearly 40-year-long family planning policy to control population growth, achieving notable results. However, the rapid decline in fertility rates has subsequently drawn the attention of both the government and the public to emerging population issues. In response to the population decline, the Chinese government gradually introduced policies such as the 'Selective Two-Child Policy', the 'Universal Two-Child Policy', and the 'Universal Three-Child Policy'. Despite the relaxation of these policies, the expected demographic growth has not materialized. After the short-term demographic boost, fertility rates have continued to decline. According to the National Bureau of Statistics of China, the total fertility rate fell to 1.09 in 2022, far below the generational replacement level of 2.1. This statistic underscores the low willingness to have children among the population.

The facts have shown that China's low fertility rate is not solely due to policy constraints; other vital factors limit the population's ability to have more children.

When couples make fertility decisions, two key factors are considered: the purpose of having children and the cost of raising them. From the perspective of family economics, parents may view children either as economic assets from which they expect returns or as long-term investments with the anticipation that children will provide benefits in their parents' old age (Kinhall 1987). However, fertility intentions are not solely based on economic benefits. The purpose of having children implies parents' expectations for their children's achievements, as children are the hope of the family (Yan 2016). Moreover, some parents view raising children as a way to attain higher social status and enhance family prestige, and consider their children's achievements as a reflection of their own success (C. Chen and Uttal 1988). Thus, parents' expectations for upward social mobility of their children have become a key motivation behind their fertility-related decision (Aries 1980).

Child-rearing costs represent another significant incentive in fertility decisions, which are also

CONTACT Zebing Yang yzb_abing@163.com Business School, Beijing Normal University, No.19 Xinjiekou Wai St., Beijing, 100875, China
© 2025 Informa UK Limited, trading as Taylor & Francis Group

closely tied to parents' expectations for their children's success. The decision to have children is often accompanied by expectations about how they will be raised. The quantity-quality tradeoff theory suggests that parents must balance having more children (quantity) with providing better resources for each child (quality) (Becker and Lewis 1973). Most parents strive to maximize their available resources to help their children succeed. Through intensive care, extracurricular tutoring, and other efforts, parents assist their children in achieving higher social status (Hannum et al. 2019; Lareau 2002). Under constraints of resources and credit, parents may limit the number of children they have to ensure they can provide each child with quality education and developmental opportunities. Thus, behind the costs of child-rearing lies the effort of parents to enhance their children's social standing and achievements, within the context of societal stratification.

To sum up, parents' fertility intentions are influenced by their expectations for their children's achievements. Conversely, uncertainty regarding their children's future can also impact fertility intentions. Children's success is influenced by multiple factors, including innate abilities, family investment, and the social environment (Heckman and Mosso 2014). The level of intergenerational mobility essentially reflects the structure of social opportunities (Beller and Hout 2006) and embodies the socio-cultural and institutional context (Stuhler 2018), which may affect fertility returns are evaluated. In a society with open opportunities, greater intergenerational mobility increases parents' expectations for their children's success and future well-being, potentially alleviating concerns about the trade-off between fertility quantity and quality. If children have more chances of upward mobility, parents may feel less need to limit family size, as investing in human capital may not be essential to improve their children's prospects.

Currently, few studies have explored the impact of intergenerational mobility at the macro-regional level on fertility intentions. Fertility intentions are a form of mentality shaped by individuals through their interactions within the social environment and are more significantly influenced by macro-level factors (Sampson 2012). Traditional research on social mobility and fertility primarily focuses on individual mobility experiences, often using non-mobile groups as a reference to observe the behaviour and attitudes of mobile individuals (Blau and Duncan 1967; Luo 2022; Stevens 1981). However, this comparison does not incorporate the level of social mobility into the model, analysing differences between groups within a society with fixed macro-level mobility, and fails to address the consequences of social structural openness. As a result, it limits the potential to utilize variations in macro-level social mobility (Cai and Xie 2024). Besides, the traditional approach implicitly assumes the non-mobile groups remains unchanged, neglecting the possibility that macro-level social mobility could also affect non-mobile groups. The opening of social opportunities has resulted in numerous successful cases of upward mobility, which have created a demonstration effect for non-mobile groups. This effect, which plays a significant role in explaining the impact of macro-level social mobility disparities (Diaz-Briquets and Perez 1982), is difficult to capture when focusing solely on individual mobility experiences.

Therefore, it is essential to examine the impact of the degree of opportunity openness on fertility from the perspective of macro-level intergenerational mobility. Given that regional disparities in economic development, family planning policies, and educational resource allocation in China are primarily reflected at the city level, this article will focus on macro-social factors at this level. Our study is most closely related to that of Cai and Xie (2024), who examined the impact of relative social mobility on fertility intentions. However, their research measured social class mobility only at the provincial level and did not account for the influence of educational opportunity equality on fertility intentions. As intergenerational mobility affects fertility intentions through various channels, its overall impact is complex and difficult to determine, requiring a more comprehensive analysis.

This article offers several potential contributions compared to existing studies. Firstly, it estimates how intergenerational educational mobility at the city level affects residents' fertility intentions, thereby expanding the literature on the impact of intergenerational mobility or educational

inequality on residents' micro-behaviour. Secondly, the article enhances the understanding of how opportunity inequality influences residents' fertility intentions. Building on previous research on incentive mechanisms, it further examines how the 'quality-quantity trade-off' effect connects intergenerational mobility to fertility intentions. This finding extends the micro-level application of intergenerational mobility as an indicator of social opportunity openness. Thirdly, unlike prior studies that generally focus on all childbearing-age families, we specifically analyse families with one child, making our insights into fertility intentions more practical. Understanding the factors influencing fertility intentions in this group is crucial for designing effective policies to address the current fertility crisis and improve social welfare related to childbearing.

The structure of this article is organized as follows: Section II provides a literature review; Section III introduces the methodology, including variable setting and the empirical model; Section IV provides an analysis of the empirical results, including baseline regressions, robustness tests, and heterogeneity analysis; Section V discusses the mechanisms based on the previous results; and finally, Section VI concludes.

II. Literature review

Research on the relationship between social mobility and fertility date back to the 'social capillarity' theory proposed by French demographer Dumont (1890). Drawing an analogy with capillaries, Dumont argued that smaller family sizes facilitate upward social mobility, with the aspiration for such mobility leading to a reduction in family size. Building on this foundation, many scholars have explored how individual or familial mobility experiences influence fertility. Blau and Duncan (1967) approached this from the perspective of occupational mobility, finding that any direction of mobility had a weak but consistent inhibitory effect on fertility. Individuals experiencing long-distance upward or downward mobility tend to have lower fertility levels. Bean and Swicegood (1979) investigated the effect of upward and downward mobility on both anticipated and unanticipated fertility, discovering a positive correlation between mobility and unanticipated fertility. Ma and Yang (2022) found that upward mobility increases fertility due to a positive income effect and reduced reliance on children for support in old age. Luo (2022) investigated the impact of mobility effect using the mobility contrast model, revealing that mobility experiences significantly inhibit fertility, with heterogeneous impacts across different demographic groups.

These studies assess the impact of social mobility on fertility by comparing the fertility levels of mobile individuals with non-mobile groups. In this framework, intergenerational mobility is treated as an individual characteristic. Researchers analyse differences between groups under specific macro-level mobility contexts, but they overlook the effects of variations in the broader social opportunity structure (Kasarda and Billy 1985). Macro-level social mobility, which reflects the fairness of social opportunities (Hout and DiPrete 2006), can also influence non-mobile groups. However, using non-mobile groups as a reference fails to capture the behavioural and attitudinal changes within these groups.

Macro intergenerational mobility is closely linked to socio-economic outcomes. Chetty et al. (2014) compared social mobility across different commuting zones in the United States and found that higher mobility was associated with less segregation, lower inequality, better educational resources, more social capital and family stability. These macro-level variances in mobility affect individual attitudes. Compared to a fixed, hopeless situation, greater mobility opportunities foster more positive social attitudes and reduce social dissatisfaction (Lipset and Bendix 1959). Ugur (2021) analysed data from 180,000 respondents across 51 countries, and found that social inequality was negatively correlated with life satisfaction and happiness, while perceived social mobility could moderate the negative relationship between inequality and subjective well-being to some extent.

Fertility decisions are utility-maximizing choices made within a specific social environment (Barro and Becker 1989). As a critical structural feature of society, macro-level mobility has an essential impact on individual fertility decisions, but there is limited research on this topic. Existing studies mainly explored the issue from the perspective of inequality. Doepke and Zilibotti (2017, 2019), in their studies on

inequality and parental child-rearing behaviours, found that economic inequality leads to differences in child-rearing practices and promotes more intensive parenting styles. With the increase in inequality and declines in social mobility, the heightened competitive investments between families inevitably influence fertility choices. Yu, Zhou, and Xie (2021) employed the Gini coefficient to measure the degree of income inequality and the density of educational training institutions to assess the regional educational competition. They found that a higher Gini coefficient and more educational competition significantly reduce fertility intentions in China.

This article explores whether and how macro-level intergenerational mobility, as a form of social structural friction, impacts residents' fertility intentions. We shift the analysis unit of social mobility from individuals to the city level, which allows for a clearer presentation of variations in intergenerational mobility (Chetty et al. 2014). This approach treats intergenerational mobility as a characteristic of social structure, facilitating a more comprehensive analysis of the causes of low fertility. Compared to the subjectivity of perceived class mobility and the difficult evaluation of income mobility, educational mobility can provide a better reflection of educational opportunity inequality within the current social structure. Moreover, valuing education is deeply ingrained in Chinese culture, and parents place considerable importance on their children's academic success. Research has shown that higher regional intergenerational educational mobility can alleviate excessive parental anxiety and competitive behaviours, thus reducing the financial pressure and spending on family educational investments (Zhao et al. 2023). Education costs are a crucial factor influencing family fertility decisions. It remains to be explored whether intergenerational educational mobility will affect fertility intentions, and if so, through what mechanism it operates.

III. Methodology

Data and variables

Our data are derived from the China Family Panel Studies (CFPS) survey and several city-level databases.

CFPS data

The China Family Panel Studies (CFPS) is an ongoing Peking University's Institute of Social Science Survey (ISSS) project. Its sample represents 95% of the Chinese population from 25 provinces/municipalities/autonomous regions (excluding Hong Kong, Macao, Taiwan, Xinjiang, Tibet, Qinghai, Inner Mongolia, Ningxia, and Hainan). It contains rich information on communities, families, and individuals. The dataset provides data on households' and individuals' demographic and social factors. The survey was conducted over six periods: 2010, 2012, 2014, 2016, 2018, 2020 and 2022. To exclude the impact of public health events that occurred in late 2019, we use data from 2018 and earlier. The independent variable, regional intergenerational mobility (IGM), is measured using the combined CFPS 2010–2018.

CFPS 2018

The dependent variables, fertility intentions, and micro-level control variables are derived from CFPS 2018 data. Chinese 'universal two-child' policy has been implemented since 1 January 2016. This article focuses on the fertility intentions of multiple children (two or more), which are the most critical to fertility, and combines those who already have one child. CFPS 2018 provides information on individuals' fertility intentions and other household characteristics, covering about 15,000 households and 44,000 individuals.

City data

To account for potential omitted variables, such as economic development levels and other city-level factors, we required data on the GDP growth, population, and house prices of each city. To ensure the credibility of our research, we collected this information from reliable sources including the China Statistic Yearbook 2018 and the official website of each city's statistical bureau. Additionally, we recognized the significant role of culture in shaping people's mindsets. In China, the influence of Confucian culture on fertility intentions is profound. To measure this influence, we used the number of Confucian temples and ancient schools as proxy variables. These data are sources from the Confucian Culture Database (CFCN) and local gazetteers from the Ming and Qing dynasties.

By aligning the region's macro characteristics with the IGM and the sample's micro information based on the city of the sample, we further enhanced the credibility of our research.

Variable settings

Regional intergenerational educational mobility

The main independent variable is regional intergenerational educational mobility (IGM). Intergenerational mobility reflects changes in the permanent economic and social status of offspring relative to their parents and is commonly measured through intergenerational income elasticity in academic research (Becker and Tomes 1979; Corak 2013). However, due to issues such as life-cycle bias and difficulties in obtaining income information for both parents and children (Fan, Yi, and Zhang 2021), income-based methods require high-quality data and are often complicated by the challenge of separating long-term income from short-term income shocks (Peters 1992; Zimmerman 1992). Measuring intergenerational mobility by education level has the following advantages: First, an individual's education level is highly correlated with lifetime income and can be a reliable proxy for permanent income. Second, educational attainment data is easier to obtain and generally has fewer measurement errors than individual income data. Third, it is straightforward to match educational information between parents and their children. Fourth, children's higher education attainment is the most intuitive expectation of Chinese parents, who aspire for their children to achieve success. Furthermore, the intellectual capital generated by education is a key source of economic wealth creation (Al Shubiri 2013), and education is also an important way for social mobility. As intergenerational educational mobility rises, the likelihood of improving intergenerational social class status increases (Stamatopoulou, Tsouparopoulou, and Symeonaki 2024). Therefore, using education level to construct a regional intergenerational mobility index is more appropriate for our study.

Regarding the specific measurement method, Solon (2004) demonstrated the validity of log-linear intergenerational income regression. Building on this, Lyu, Guo, and Wang (2020) further verified that the relationship between the human capital of the offspring and that of the parent generation is also linear. Education level serves as the primary manifestation of human capital. By regressing the education level of the offspring on that of the parent generation, the elasticity of human capital transmission between the two generations can be obtained. The model is shown in Equation (1) below:

$$edu_{i1c} = \alpha_c + \beta_c edu_{i0c} + \varepsilon_{ic} \quad (1)$$

where edu_{i1c} and edu_{i0c} respectively represent the education level of individual i and his father in city c. From the above equation, the intergenerational elasticity of education in city c is estimated as β_c, and the intergenerational mobility in the city is further derived as $1 - \beta_c$.

Social development has led to the rising status of women within the family, and it is no longer comprehensive to use only the father's characteristics as a proxy for the family's economic status. Therefore, we used the higher level of education of the two parents as a proxy. At the same time, with economic growth and the widespread expansion of public education, the overall level of education has gradually increased. The increase in the offspring generation's education level compared to that of the father's generation means that the distribution of educational levels between the two generations is different, thus lacking comparability. As a result, using education level alone in a linear regression may lead to biased results. To address this, we followed the method of Chetty et al. (2014). Specifically, we first calculated the rankings of the education levels of the child among all child generations in the same city, and the rankings of the father generation among all father generations in the same city. We then regress the rankings of the child generation on that of the father generation, where the slope indicates the relation of the child and father generations in the education level. Using the ranking method helps mitigate the bias inherent in the previous approach and allows for a more accurate estimation of intergenerational educational elasticity in each region. Based on this, the final equation for regional intergenerational mobility is formulated as Equation (2) below:

$$rank_{i1c} = \alpha_c + \beta_c rank_{i0c} + \varepsilon_{ic} \quad (2)$$

In Equation (2), $rank_{i1c}$ denotes the education-level ranking of the child from family i in city c, and $rank_{i0c}$

is the education-level ranking of the parent from family i in city c. The estimated coefficient β_c is the intergenerational educational elasticity, which describes the correlation of education level between parents and children in city c, while $1-\beta_c$ can be used to measure intergenerational educational mobility. The larger its value is, the higher intergenerational mobility in the city. ε_{ic} is the random disturbance term.

It should be noted that within each city, samples with the same education level have the same ranking. For example, assuming that there are 100 individuals in a city with an education level of 8 (PhD), then all individuals within that city with an education level of 7 (Masters) have a ranking of 101. However, due to differences in the educational structure and sample size across cities, although two samples have the same education level, their rankings may differ if they are from different cities. This ultimately results in the ranking relationships shown in Figure 1. From the figure, it is evident that there is a clear linear relationship between the rankings of the parents' education level and the rankings of the children's education level. This linear relationship is the foundation for constructing the intergenerational educational mobility indicators and serves as a key premise in this article.

To ensure the accuracy of IGM measurement, the following steps were taken in screening and processing the samples: First, we combined all samples from 2010 to 2018 and removed duplicates to increase the sample size for each region. Second, we removed samples with missing variables such as domicile location, individual and parent education levels. Third, we removed those still in school. Fourth, the CFPS data include information on the sample's birthplace, as well as their residence at ages 3 and 12, and their household registration (hukou) location. Based on this, we excluded individuals whose birthplace was in other cities, individuals whose hukou location was in other cities, individuals who lived in other cities when they were 3 years old or 12 years old, to eliminate all samples that have experienced spatial migration or movement, thereby ensuring that the selected samples are as local and native as possible. These steps resulted in obtaining 39,896 samples. Following the method described above, we measured each city's intergenerational educational mobility (IGM), resulting in a final match for 127 cities.

Table 1 displays the IGM values for several cities. The intergenerational educational mobility of Chinese cities varies greatly, with the lowest and highest IGM being 0.428 and 0.795, respectively. This finding suggests significant differences in the level of equity in educational opportunities between different cities, which provides the premise for the empirical analysis in this article.

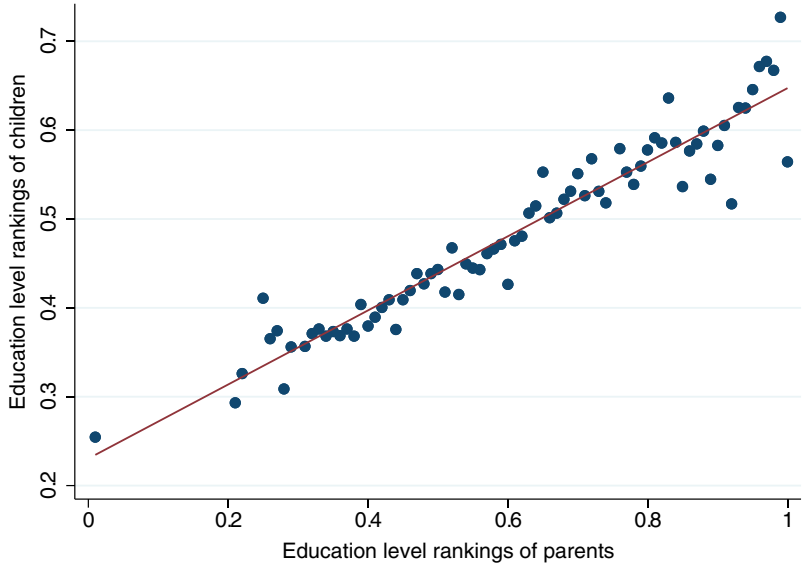


Figure 1. The relationship between education level rankings of parents and children.

Table 1. IGM in some cities.

Rank (%)	igm
1	0.428
10	0.495
20	0.545
30	0.576
40	0.593
50	0.611
60	0.648
70	0.648
80	0.668
90	0.694
100	0.795

Fertility intention

The dependent variable is fertility intentions. Using the question from the CFPS questionnaire, 'How many children do you think would be ideal for you to have?' we constructed two measures: the ideal number of children (the number of children an individual desires to have) and whether an individual desires two or more children (the desire for multiple children). Despite many changes in Chinese families in recent years, childbearing within marriage remains the most common form of childbearing, and the family continues to be the primary setting for childbearing behaviour. Fertility is not an independent decision made by women, but rather the result of a joint discussion between husband and wife. Therefore, male fertility intentions are also important and deserve attention.

To ensure the accuracy and validity of our measurements, we implemented a rigorous selection process for our samples. Firstly, we retained samples with only one child, as their willingness to have multiple children is more practically valuable. Secondly, we excluded respondents who indicated 'Did not know' or 'Refused to answer', as well as those with missing or abnormal data on variables. Thirdly, we restricted the sample to individuals aged between 18 and 45 years, considering the reduced likelihood of childbearing beyond the age of 45. Lastly, we excluded households with non-positive per capita income levels to mitigate the impact of outliers.

Empirical model

To estimate the influence of IGM on fertility intentions, we constructed the benchmark model as Equation (2):

$$\text{birth}_{i,c} = \alpha + \beta IGM_c + \gamma X_i + \delta M_c + \nu_p + \varepsilon_c \quad (3)$$

where i and c respectively denote the individual and the individual's city. Fertility intention $birth_{i,c}$ is the dependent variable, with 0 = do not want to have children or only want one, and 1 = want two or more children; IGM_c is the independent variable, representing the intergenerational educational mobility in city c; β is the core coefficient to be estimated, which indicates the effect of IGM on the fertility intentions, and ε_c is a random disturbance term.

The vector X_i contains information on individuals and their families, including gender, age, hukou type, party status, physical health, marital status, years of education, work status, annual year personal income, number of family members, per capita annual household income, and having parents to take care of children. M_c denotes a set of variables at the city level, including GDP growth, population, average house price and the number of Confucian temples and schools during Ming-Qing dynasties. We also include province fixed effects ν_p.

Table 2 presents the descriptive statistics for each variable. The mean ideal number of children for the selected samples is 1.61, with males averaging 1.64 and females averaging 1.57. Among the chosen samples, 1,127 respondents, or 58.5%, reported an ideal number of children of two or more, indicating that most respondents of childbearing age desire to have at least two children. Conversely, only 14 respondents, accounting for 0.73% of the total samples, reported an ideal number of zero children, suggesting that most respondents are willing to have children. Traditional beliefs such as 'more children, more happiness' and 'no filial piety, no posterity' remain deeply ingrained in Chinese culture and continue to have an impact today.

IV. Empirical analysis

Baseline results

To eliminate the effect of unit differences on data analysis, the independent variable IGM in the subsequent regressions was standardized. Table 3 presents the results of the baseline regression. First, the

Table 2. Summary statistics of the variables.

Variable	Definition	(1) N	(2) mean	(3) sd	(4) min	(5) max
expchild	Number of ideal children	1,927	1.607	0.591	0	10
birth	Fertility intentions	1,927	0.585	0.493	0	1
IGM	Intergenerational educational mobility	1,927	0.583	0.0738	0.426	0.733
gender	Gender(male = 1)	1,927	0.479	0.500	0	1
hukou	Agriculture or Non-agriculture (Agriculture = 1)	1,927	0.563	0.496	0	1
party	Party status (CCP = 1)	1,927	0.104	0.305	0	1
age	Age	1,927	34.65	6.375	18	45
health	Physical health (healthy = 1)	1,927	0.817	0.386	0	1
eduy	Years of education	1,927	11.47	3.605	0	22
marry	Marital status (married = 1)	1,927	0.884	0.321	0	1
work	Work status (work = 1)	1,927	0.854	0.353	0	1
parentcare	Grandparents care (yes = 1)	1,927	0.410	0.492	0	1
familysize	Number of family members	1,927	4.321	1.743	1	14
lninc	Log of individual annual income	1,927	7.504	4.820	0	13.12
lnfinc	Log of the family's per capita annual income	1,927	10.09	0.891	0	15.23
gdpgrowth	City's GDP growth	1,927	6.188	1.392	2	9.700
lnhprice	Log of average house price	1,927	9.212	0.820	8.174	10.94
lnpop	Log of city's population	1,927	6.376	0.639	4.762	7.281
lnmiao	Log of Confucian temples	1,927	0.864	0.850	0	2.773
lnxue	Log of Confucian schools	1,927	3.026	1.136	0	4.736

Table 3. Baseline results.

	Ideal number of children		Fertility intention		
	(1) OLS	(2) O-Probit	(3) OLS	(4) Probit	(6) Average marginal effect
IGM	0.055**	0.119**	0.070***	0.188***	0.065***
	(0.026)	(0.059)	(0.023)	(0.068)	(0.023)
Controls	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES
R^2/PseudoR^2	0.136	0.094	0.141	0.110	0.110
Obs	1,927	1,927	1,927	1,926	1,926

All models control province-fixed effects, demographic controls and city controls described above. Robust standard errors in parentheses
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

'ideal number of children' is used as the dependent variable to assess the impact of IGM on the number of desired children. Columns (1) and (2) show the results from the OLS and Ordered-Probit regressions, respectively, with the coefficient estimates of the core explanatory variable IGM being significantly positive. Since the coefficient estimates from the Ordered-Probit regression cannot be directly interpreted, the marginal effects of the different desired numbers of children are also estimated. The results, as shown in Figure 2, indicate that for each standard deviation increase in IGM, the probability of having 0 and 1 children decreases significantly. In comparison, the probability of having 2 and 3 children increases significantly 3.6% and 0.5%, respectively. In columns (3) and (4) of Table 3, when the dependent variable is replaced by 'fertility intentions (whether to have multiple children)', the results from both the OLS and Probit regressions remain significant. The average marginal effect from the Probit regression is 0.065, which suggests that for every 1 standard deviation increase in IGM, the probability of having multiple children increases by 6.5%. This result, which is similar to the OLS regression coefficient, demonstrates that intergenerational educational mobility has a significant positive effect on fertility intentions.

Robustness tests

Expanding the samples

To further validate the robustness of the results, we expanded the sample to include all youth aged 18–45, including those who already have multiple births, to test whether their fertility intentions change in response to intergenerational mobility. As shown in Table 4(1), the results remain robust. The findings suggest that the effect of IGM on fertility intentions is pervasive among people of childbearing age.

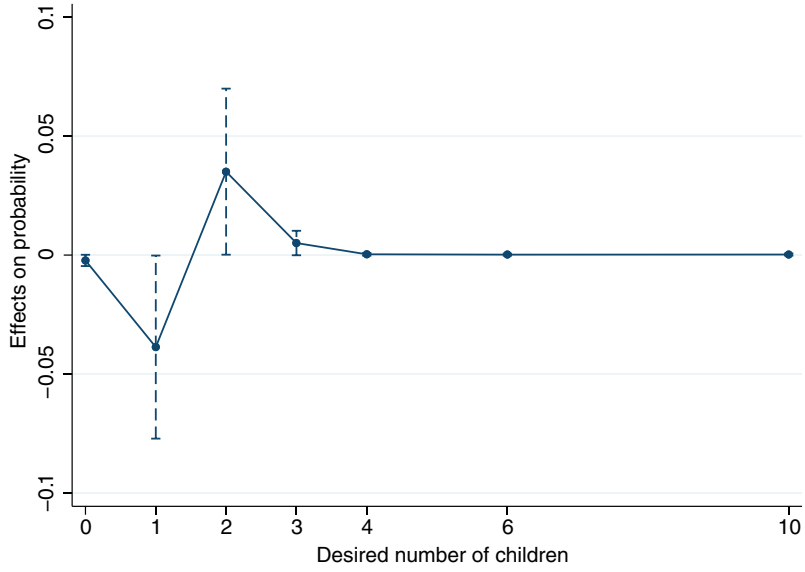


Figure 2. Average marginal effects of IGM with 95% CIs.

Table 4. Robustness checks by adjusting the sample range.

	(1) Expanding	(2) No move	(3) 22–36 year-old	(4) Logit
IGM	0.052***	0.080***	0.059**	0.068***
	(0.011)	(0.026)	(0.028)	(0.023)
Controls	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
PseudoR^2	0.165	0.120	0.149	0.111
Obs	5,488	1,582	1,112	1,926

All models control province fixed effects, demographic controls and city controls described above. The regression coefficients are all average marginal effects of the independent variables on the dependent variable, with robust standard errors for the marginal effects in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Exclusion of migrants

Regional intergenerational mobility affects household spatial migration decisions (Kim and Lee 2019). Given the uneven economic development and resource allocation across Chinese regions, individuals in areas with low intergenerational mobility often choose to migrate to regions with higher levels of mobility, seeking greater opportunities and resource advantages. However, compared to the local population, migrants may experience a sense of insecurity due to unstable job prospects and limited economic conditions, leading them to delay marriage and childbearing, thereby influencing fertility intentions. Therefore, IGM may impact individuals' fertility intentions through migration. Based on this, the sample of non-migrants was identified by excluding individuals who had experienced migration. This includes removing those who had changed their hukou location, whose hukou was not in the local municipality, whose birthplace was outside the local municipality, or whose place of residence at the age of 12 differed from their birthplace, according to the CFPS questionnaire. The results, shown in column (2) of Table 4, indicate that the coefficient estimates of IGM remain significantly positive, suggesting that spatial migration does not alter the original findings.

Samples limited to 22–36 years old

The regression results of the baseline model show that age is a crucial factor influencing fertility intentions. Individuals around 22 years old, who have typically completed their education, entered the workforce, and are entering the marriage stage, generally have a more concrete attitude towards childbearing. In contrast, those over 36, considered to be in the later stages of reproductive age, are influenced by their physical capabilities when making fertility decisions. This research focuses on

IGM perspective to explore people's willingness to have children, with middle-aged groups being the primary force of childbearing. Given these considerations, we narrowed the sample age range to 22–36 and re-estimated the Probit model. The results in model (3) of Table 4 remain robust.

Switching to the logit model

The benchmark regressions primarily use the Probit model. In this section, the Probit model is replaced with the Logit model to re-estimate the effect of IGM on fertility intentions. As shown in Table 4(4), the average marginal effect of the Logit regression is consistent with the results from the Probit model, and the findings remain robust.

Endogenous test

Endogeneity issues may lead to biased estimates of the coefficients. The presence of unobserved omitted variables, such as regional resource disparities, may simultaneously affect both social mobility and residents' fertility intentions. To address this issue, this section employs the instrumental variable (IV) method. We use the intensity of the influence of Keju (the imperial examination system) as an instrumental variable for testing. Historically, Keju was the primary channel for vertical social mobility and has had a lasting impact on contemporary human capital outcomes. The greater the influence of Keju in a region, the more likely it is to foster upward social mobility (T. Chen, Kung, and Ma 2020). Thus, this variable satisfies both the exogeneity and relevance conditions for an instrumental variable. Building on existing research (Cai and Xie 2024), we constructed the instrumental variable for the density of jinshi (which means successful graduates in Keju) based on the number of Qing dynasty jinshi in each city, provided by Zhu and Xie (1980), and the population data for each city in the 25th year of the Jiaqing reign (1820 AD), provided by Liang (1980). The density is calculated as the number of Qing dynasty jinshi in each locality divided by the population of that locality in 1820 (in tens of thousands).

Column (1) of Table 5 presents the first-stage results of the IV-Probit regression. The coefficient estimate for the jinshi density is significantly positive at the 1% level, indicating that the greater the development of the imperial examination system in the region, the higher the intergenerational mobility. The F-statistic is 20.528, and both the AR and Wald statistics are significant at the 5% level, confirming that weak instrument problems do not exist. Column (2) of Table 5 reports the second-stage regression results. The estimated coefficient of IGM is significantly positive, suggesting that the higher the intergenerational mobility, the stronger the individual's fertility intentions, which is consistent with the findings from the baseline regression.

Table 5. Endogenous test.

	(1) First IGM	(2) Two Fertility intention
IGM		0.853**
		(0.411)
Density of Jinshi	0.843***	
	(0.108)	
Controls	YES	YES
Obs	1,848	1,848
F-statistic	20.528	
AR test	4.54**	
Wald test	4.32**	

All models control province fixed effects, demographic controls and city controls described above. Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Heterogeneity

To examine the heterogeneity of the impact of IGM on fertility intentions across different groups, we analysed the sample based on education level, gender, and hukou type. The sample is divided into a 'low education' group (with education below tertiary level) and a 'high education' group (with tertiary education or above), and separate regressions are conducted. The results are presented in columns (1) and (2) of Table 6. The results show that IGM has a significantly positive effect on fertility intentions for both the low- and high-education groups, with the effect being slightly stronger for the high-education group. This may be because individuals in the high-education group are more sensitive to the perceived impact of educational mobility.

Columns (3) and (4) of Table 6 show gender heterogeneity, with IGM positively influencing fertility intentions for both male and female groups, although the effect is slightly stronger for males. Social mobility is more closely linked to males (Gugushvili et al. 2021). Under traditional

Table 6. Heterogeneity analysis.

	(1) Lower education	(2) Higher education	(3) Male	(4) Female	(5) Agriculture	(6) Non-agriculture
IGM	0.069**	0.093**	0.069**	0.066**	0.083***	0.057
	(0.027)	(0.039)	(0.032)	(0.032)	(0.029)	(0.039)
Controls	YES	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES	YES
PseudoR^2	0.123	0.151	0.148	0.123	0.102	0.156
Obs	1,297	627	922	1,004	1,084	842

All models control province fixed effects, demographic controls and city controls described above. The regression coefficients are all average marginal effects of the independent variables on the dependent variable, with robust standard errors for the marginal effects in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

patriarchal systems, men inherit the family name, bear the responsibility of passing it on, and take on greater societal roles, including supporting their families. As a result, men's social status is more closely tied to family well-being, making the impact of intergenerational mobility more pronounced for men.

Columns (5) and (6) of Table 6 examine heterogeneity based on hukou type. IGM significantly positively affects the fertility intentions of the agricultural hukou group, with the probability of intending multiple births increasing by 8.3% for every one standard deviation increase in regional mobility. In contrast, this effect is not significant for the non-agricultural hukou group. The impact of intergenerational mobility is more evident among rural populations, who place greater emphasis on family legacy compared to urban groups.

V. Mechanisms

Parents typically desire their children to succeed. More education improves an individual's chances of attaining a higher social status in the future (Du et al. 2022). In this section, we investigate whether IGM affects fertility intentions through raising parental expectations. We employ 'children's educational expectations', 'hope for children's success' and 'continue the ancestral line' as proxies for offspring's developmental expectations. There are three questions from the CFPS questionnaire: 'the level of education I hope my children to receive', 'the importance of my children's success' and 'the importance of continuing the ancestral line'. The expectation of children's education is categorized into seven levels, ranging from elementary school to a doctoral degree. The importance of children's success and the importance of continuing the ancestral line are rated on a scale from 1 to 5. Since the explained variables are ordinal categorical variables, we used the Ordered-Probit model for regression. However, the results in columns (1)–(3) of Table 7 show that IGM does not significantly affect the expectation of the offspring.

Our findings suggest that intergenerational mobility does not directly impact expectations for offspring. However, parents' expectations for their children's success are also embedded in their parenting practices, reflected in the 'quantity versus quality' trade-offs. Families have strong incentives to enhance their children's educational resources to

Table 7. Mechanisms.

	Offspring expectation			Parenting stress		
	(1) Educational expectations O-Probit	(2) Children to succeed O-Probit	(3) Continuing the ancestral line O-Probit	(4) Expenditure on education OLS	(5) The rate of educational expenditure OLS	(6) Whether to take tutoring Probit
IGM	−0.100	−0.089	0.063	−0.365**	−0.012**	−0.081***
	(0.071)	(0.064)	(0.056)	(0.183)	(0.006)	(0.026)
Controls	YES	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES	YES
R^2/PseudoR^2	0.037	0.035	0.029	0.379	0.126	0.211
Obs	1,439	1,927	1,927	1,443	1,443	1,436

All models control province fixed effects, demographic controls and city controls described above. Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

increase the likelihood of future socio-economic upgrading. Under certain budgetary constraints, having fewer children allows for greater care and investment in each child's human capital, leading to improved career development and future earnings (Lee 2008). Existing literature suggests that family expenditure on parenting is influenced by income inequality and disparities in educational opportunities (Doepke and Zilibotti 2019). With rapid socio-economic development, increased competition has led to rising social inequality (Al Shubiri and Jamil 2017). Inequality is one of the main drivers of the 'parenting race' (Y. Chen, Yuan, and Zhang 2023; Song and Zhou 2019). It can be inferred that higher intergenerational mobility may weaken the 'quantity-quality' trade-off faced by parents: if upward mobility is easily achievable for children, there is less need to overinvest in human capital to increase the likelihood of upward mobility. Therefore, by exploring the impact of IGM on family parenting stress, we aim to test whether this 'trade-off effect' exists.

Given that education expenditure constitutes a significant portion of the cost of raising children, we use two variables, children's education expenditure and the proportion of education expenditure to net household income, as proxies for the cost of child-rearing, to measure the pressure associated with raising children. Based on the data from the CFPS database on 'total expenditure on children's education in the past 12 months' and 'net household income', we calculate both the total education expenditure and its proportion and estimate the variable on IGM separately. The results, shown in column (4) (5) of Table 7, indicate that areas with higher IGM have lower household educational investment, consistent with the findings of Zhao et al. (2023). They argue that while higher intergenerational mobility increases people's confidence in investing in education, it ultimately reduces household investment in education by alleviating excessive parental anxiety and reducing status-seeking behaviours in the family. This reduction in parenting costs, including education expenses, in turn increases the fertility intentions of individuals.

In addition, to verify the robustness of the results, we use 'whether or not to attend tutoring classes' as another proxy variable for parenting stress and regress it on IGM. The results in column (6) of Table 7 are significantly negative, suggesting that IGM affects families' educational patterns towards children. Kim, Terlit, and Yum (2024) found that extracurricular tutoring in Korea increases education costs and the financial burden of raising children, leading parents to have fewer children.

Studies show that economic status is a crucial factor in family fertility (Furuoka 2013). If intergenerational mobility impacts fertility through the quality-quantity trade-off, higher-income families face weaker trade-offs due to fewer budget constraints, while low-income families experience stricter trade-offs due to limited resources. To test the robustness of this mechanism, the samples are further divided into high-income, middle-income, and low-income groups for sub-sample regressions based on the per capita household income quartiles. The estimates in columns (1)–(3) of Table 8 are consistent with the guess above: the effect of IGM on the fertility intentions for high-income households is insignificant, while the coefficient estimates for middle-income and low-income households are significantly positive, with the effect being larger for low-income households. In addition, high-income households tend to have higher expectations for their offspring than low-income households. However, the regression results for the income subgroups show that the results for the high-income group are insignificant. This result again indicates that 'expectations of offspring' are not a direct mechanism by which intergenerational mobility affects fertility intentions.

Table 8. Mechanisms: trade-off between quantity and quality.

	(1) Low-income group	(2) Middle-income group	(3) High-income group
IGM	0.081***	0.052*	0.055
	(0.029)	(0.033)	(0.047)
Controls	YES	YES	YES
Province FE	YES	YES	YES
PseudoR^2	0.110	0.147	0.129
Obs	573	715	619

The regression coefficients are all average marginal effects of the independent variables on the dependent variable, with robust standard errors for the marginal effects in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

VI. Conclusions

Currently, research on the relationship between macro-level opportunity inequality and micro-level fertility intentions is limited. This article calculates regional intergenerational educational mobility (IGM) using data from the 2010–2018 China Family Panel Studies (CFPS) and evaluates the fertility intentions of young people at childbearing age using the 2018 CFPS data. Different models are employed to test the impact of IGM on fertility intentions. The results indicate that IGM has a significant positive effect on fertility intentions, suggesting inequality in educational opportunities suppresses fertility intentions among youth. The heterogeneity analysis reveals that the facilitative effect of IGM is more pronounced among the highly educated, possibly because this group is more sensitive to perceptions of educational mobility. Men's responses to IGM are more pronounced, which may be related to their role in 'continue the family line'. Additionally, the agricultural population, who place greater emphasis on family legacy compared to urban groups, shows a more pronounced response to IGM compared to the non-agricultural population. Mechanistic analysis suggests that the alleviation of parenting pressures, arising from the quality-quantity tradeoff faced by families, may serve as a mechanism through which IGM influences fertility intentions. This mechanism is further corroborated by the stronger fertility-promoting effect among low-income groups.

Our finding aligns with the conclusions of Cai and Xie (2024), who, based on the theory of 'child-centered familism', explore how social status mobility increases fertility desire and demonstrate the key mediating role of socio-psychological factors. The novelty of our research lies in focusing on the openness of educational opportunities and investigating effects and potential mechanisms on fertility intentions. Different from the notion that 'heightened expectations for offspring' serve as a primary conduit through which intergenerational mobility shapes fertility intentions, our analysis reveals that enhanced educational mobility diminishes excessive educational expenditures, mitigates childcare expenses, and consequently boosts fertility intentions. This result suggests that the alleviation of childcare pressures through greater social opportunity equity may be a more direct and effective mechanism than focusing solely on offspring development expectations.

This study highlights the crucial role of educational equity in enhancing the fertility intentions of young people. This finding offers a new perspective for policymakers, suggesting that by optimizing the allocation of educational resources and improving educational equity, it is possible to effectively reduce fertility pressure among reproductive-age individuals and promote greater fertility intentions. In recent years, a series of pro-natal policies have been introduced across China to encourage young people to marry and have children. To maximize the effectiveness of these policies, it is essential to open channels for upward social mobility. Fertility promotion policies should be combined with policies that ensure equal opportunities to fundamentally address the issue of low fertility. Besides, our results also show that lower-income groups are more likely to have more children when intergenerational mobility increases. Families from low socio-economic backgrounds often face greater financial constraints and are disadvantaged in raising multiple children. This not only exacerbates the economic burden on these families but may also lead to widening gaps in educational access and human capital development between children. Improving intergenerational mobility can help alleviate this issue by creating more opportunities for social mobility for children from low-income families, fostering a virtuous cycle that contributes to broader societal progress. Thus, the government should further enhance the equalization of public education services, particularly in economically underdeveloped regions, and increase investment in public education. This would allow quality education to benefit a broader population and provide more equal growth opportunities for the next generation. Such efforts would not only help close the educational gap between children from different social backgrounds but also lay a solid foundation for long-term social stability and prosperity.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the National Natural Science Foundation of China [71973012].

References

Al Shubiri, F. N. 2013. "The Impact of Value Added Intellectual Coefficient Components on Financial Health." *Revista de Management Comparat Internațional* 14 (3): 459–472.

Al Shubiri, F. N., and S. A. Jamil. 2017. "Assessing the Determinants of Interest Rate Spread of Commercial Banks in Oman: An Empirical Investigation." *European Research Studies Journal* 20 (2): 90–108.

Aries, P. 1980. "Two Successive Motivations for the Declining Birth Rate in the West." *Population & Development Review* 6 (4): 645–650. https://doi.org/10.2307/1972928.

Barro, R. J., and G. S. Becker. 1989. "Fertility Choice in a Model of Economic Growth." *Econometrica* 57 (2): 481–501. https://doi.org/10.2307/1912562.

Bean, F. D. and G. Swicegood. 1979. "Intergenerational Occupational Mobility and Fertility: A Reassessment." *American Sociological Review* 44 (4): 608–619.

Becker, G. S., and H. G. Lewis. 1973. "On the Interaction Between the Quantity and Quality of Children." *Journal of Political Economy* 81 (2): S279–S288. https://doi.org/10.1086/260166.

Becker, G. S., and N. Tomes. 1979. "An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility." *Journal of Political Economy* 87 (6): 1153–1189. https://doi.org/10.1086/260831.

Beller, E., and M. Hout. 2006. "Intergenerational Social Mobility: The United States in Comparative Perspective." *Future of Children* 16 (2): 19–36.

Blau, P. M., and O. D. Duncan. 1967. *The American Occupational Structure*. New York, NY: John Wiley & Sons.

Cai, W., and Y. Xie. 2024. "Raising Hope: The Impact of Intergenerational Mobility on Fertility Desire in China." *Chinese Journal of Sociology* 44 (1): 178–212. [in Chinese].

Chen, C., and D. H. Uttal. 1988. "Cultural Values, Parents' Beliefs, and Children's Achievement in the United States and China." *Human Development* 31 (6): 351–358. https://doi.org/10.1159/000276334.

Chen, T., J. K. Kung, and C. C. Ma. 2020. "Long Live Keju! The Persistent Effects of China's Civil Examination System." *The Economic Journal* 130 (631): 2030–2064. https://doi.org/10.1093/ej/ueaa020.

Chen, Y., M. Yuan, and M. Zhang. 2023. "Income Inequality and Educational Expenditures on Children: Evidence from the China Family Panel Studies." *China Economic Review* 78:101932. https://doi.org/10.1016/j.chieco.2023.101932.

Chetty, R., N. Hendren, P. Kline, and E. Saez. 2014. "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." *Quarterly Journal of Economics* 129 (4): 1553–1623. https://doi.org/10.1093/qje/qju022.

Corak, M. 2013. "Income Inequality, Equality of Opportunity, and Intergenerational Mobility." *Journal of Economic Perspectives* 27 (3): 79–102. https://doi.org/10.1257/jep.27.3.79.

Diaz-Briquets, S., and L. Perez. 1982. "Fertility Decline in Cuba: A Socioeconomic Interpretation." *Population & Development Review* 8 (3): 513–537. https://doi.org/10.2307/1972374.

Doepke, M., and F. Zilibotti. 2017. "Parenting with Style: Altruism and Paternalism in Intergenerational Preference Transmission." *Econometrica* 85 (2): 445–475. https://doi.org/10.3982/ECTA14634.

Doepke, M., and F. Zilibotti. 2019. *Love, Money, and Parenting: How Economics Explains the Way We Raise Our Kids*. Princeton, NJ: Princeton University Press.

Du, H., A. Chen, Y. Li, L. Ma, Q. Xing, and Y. Nie. 2022. "Perceived Income Inequality Increases Status Seeking Among Low Social Class Individuals." *Asian Journal of Social Psychology* 25 (1): 52–59. https://doi.org/10.1111/ajsp.12455.

Dumont, A. 1890. *Dépopulation et Civilization*. Paris, France: Schleicher Frères.

Fan, Y., J. Yi, and J. Zhang. 2021. "Rising Intergenerational Income Persistence in China." *Economic Policy* 13:202–230. https://doi.org/10.1257/pol.20170097.

Furuoka, F. 2013. "Is There a Reversal in Fertility Decline? An Economic Analysis of the 'Fertility J-Curve." *Transformations in Business & Economics* 12 (2): 44–57.

Gugushvili, A., G. Bulczak, O. Zelinska, and J. Koltai. 2021. "Socioeconomic Position, Social Mobility, and Health Selection Effects on Allostatic Load in the United States." *PLOS ONE* 16 (8): e0254414. https://doi.org/10.1371/journal.pone.0254414.

Hannum, E., H. Ishida, H. Park, and T. Tama. 2019. "Education in East Asian Societies: Postwar Expansion and the Evolution of Inequality." *Annual Review of Sociology* 45 (1): 625–647. https://doi.org/10.1146/annurev-soc-073018-022507.

Heckman, J. J., and S. Mosso. 2014. "The Economics of Human Development and Social Mobility." *Annual Review of Economics* 6:689–733. https://doi.org/10.1146/annurev-economics-080213-040753.

Hout, M., and T. A. DiPrete. 2006. "What We Have Learned: RC28's Contributions to Knowledge About Social Stratification." *Research in Social Stratification and Mobility* 24 (1): 1–20. https://doi.org/10.1016/j.rssm.2005.10.001.

Kasarda, J. D., and J. O. G. Billy. 1985. "Social Mobility and Fertility." *Annual Review of Sociology* 11 (1): 305–328. https://doi.org/10.1146/annurev.so.11.080185.001513.

Kim J Sung and Lee J. 2019. "The role of intergenerational mobility in internal migration.". Economic Modelling, 81: 1–15. http://doi.org/10.1016/j.econmod.2018.12.001

Kim, S., M. Terlit, and M. Yum. 2024. "Status Externalities in Education and Low Birth Rates in Korea." *The American Economic Review* 114 (6): 1576–1611.

Kinhall, M. S. 1987. "Making Sense of Two-Sided Altruism." *Journal of Monetary Economics* 20 (2): 301–326. https://doi.org/10.1016/0304-3932(87)90018-3.

Lareau, A. 2002. "Invisible Inequality: Social Class and Childrearing in Black Families and White Families." *American Sociological Review* 67 (5): 747–776. https://doi.org/10.2307/3088916.

Lee, J. 2008. "Sibling Size and Investment in Children's Education: An Asian Instrument." *Journal of Population Economics* 21 (4): 855–875. https://doi.org/10.1007/s00148-006-0124-5.

Liang, F. 1980. *The Household Registration, Land, and Land Tax Statistics in Ancient China*. Shanghai: Shanghai People's Publishing House. [in Chinese].

Lipset, S. M., and R. Bendix. 1959. *Social Mobility in Industrial Society*. Berkeley, California: University of California Press.

Luo, L. 2022. "Heterogeneous Effects of Intergenerational Social Mobility: An Improved Method and New Evidence." *American Sociological Review* 87 (1): 143–173.

Lyu, W., M. Guo, and W. T. Wang. 2020. "Equity of Educational Opportunity and Social Trust of Residents: Empirical Measurement and Micro-Evidence from Urban Intergenerational Mobility of Education." *China Industrial Economics* 2: 80–99. [in Chinese].

Ma, J., and X. Yang. 2022. "Intra-Generational Upward Mobility and Fertility: Evidence from Transition Countries." *Applied Economics* 54 (43): 4991–5005. https://doi.org/10.1080/00036846.2022.2039369.

Peters, H. E. 1992. "Patterns of Intergenerational Mobility in Income and Earnings." *The Review of Economics and Statistics* 74 (3): 456–466. https://doi.org/10.2307/2109490 .

Sampson, R. J. 2012. *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago, IL: University of Chicago Press.

Solon, G. 2004. "A Model of Intergenerational Mobility Variation Over Time and Place." In *Generational Income Mobility in North America and Europe*, pp. 38-47. edited by M. Corak. Cambridge: Cambridge University Press.

Song, Y., and G. Zhou. 2019. "Inequality of Opportunity and Household Education Expenditures: Evidence from Panel Data in China." *China Economic Review* 55:85–98. https://doi.org/10.1016/j.chieco.2019.03.002.

Stamatopoulou, G., E. Tsouparopoulou, and M. Symeonaki. 2024. "Educational Status as a Mediator of Intergenerational Social Mobility in Europe: A Positional Analysis Approach." *Mathematics* 12 (7): 966. https://doi.org/10.3390/math12070966.

Stevens, G. 1981. "Social Mobility and Fertility: Two Effects in One." *American Sociological Review* 46 (5): 573–585. https://doi.org/10.2307/2094939.

Stuhler, J. 2018. *A Review of Intergenerational Mobility and Its Drivers*. Luxembourg: Publications Office of the European Union.

Ugur, Z. B. 2021. "How Does Inequality Hamper Subjective Well-Being? The Role of Fairness." *Social Indicators Research* 158:377–407. https://doi.org/10.1007/s11205-021-02711-w.

Yan, Y. 2016. "Intergenerational Intimacy and Descending Familism in Rural North China." *American Anthropologist* 118 (2): 244–257. https://doi.org/10.1111/aman.12527.

Yu, J., Y. Zhou, and Y. Xie. 2021. "Macroeconomic Factors Affecting the Ideal Number of Children Among Chinese Residents." *Population Research* 45 (6): 45–61. [in Chinese].

Zhao, N., W. Liao, J. Xia, and Z. Zhang. 2023. "The Effect of Intergenerational Mobility on Family Education Investment: Evidence from China." *Humanities and Social Sciences Communications* 10:613. https://doi.org/10.1057/s41599-023-02077-z.

Zhu, B., and P. Xie. 1980. *Official Directory of Ming-Qing Civil Exam Graduates*. Shanghai: Shanghai Classics Publishing House. [in Chinese].

Zimmerman, D. J. 1992. "Regression Toward Mediocrity in Economic Stature." *The American Economic Review* 82 (4): 409–429.