

Multigenerational coresidence and parental time in developmental childcare in China

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Abstract

Previous literature has examined how multigenerational coresidence changes parental time in primary childcare. However, much less is known about how coresidence may affect the amount of time parents invest in developmental childcare, which is crucial for children's education and life chances. Using longitudinal data from the China Family Panel Studies 2010–2018, we examine how parental time investment in developmental childcare varies by household structure and parental and grandparental education. Results suggest that coresidence with maternal grandparents increases mothers' time in developmental childcare among children with high-educated parents. Moreover, the positive effect of matrilocal residence on maternal time investment is greatest for children in families with high levels of education, where both parental and grandparental education levels are high. These results suggest that for highly educated families in China, matrilocal residence may be a strategic arrangement to allow parents to invest more time in their children's education, producing multigenerational advantages through intergenerational cooperation between parents and grandparents.

Keywords

Multigenerational coresidence; Developmental childcare; Parental investment; Grandparents; Time use; China

Highlights

- Multigenerational coresidence affects parental time in developmental childcare.
- Matrilocal coresidence increases mothers' time investment among educated parents.
- Maternal time investment is greatest with high parental and grandparental education.
- Mothers spend more time in developmental childcare than fathers.
- Fathers' time varies little by household structure and education in China.

1. Introduction

As the shared lifespan of grandparents and grandchildren increases, a growing body of literature examines social mobility from a multigenerational perspective, emphasizing grandparent effects on children's life chances (Song & Mare, 2019). One strand of this research focuses on multigenerational households, where grandparents, parents, and children live together (Amorim, 2019, Arenas, 2017, Zeng and Xie, 2014). The involvement of grandparents in family life (e.g., by sharing housework and childcare) often changes parents' time allocation in terms of employment, housework, and primary childcare (Hu & Mu, 2021; Kalil et al., 2014; Zhang et al., 2019). However, much less is known about how living with grandparents affects the amount of time parents spend on developmental childcare. Unlike primary childcare, which involves routine, physical care activities, developmental childcare involves activities that are important for the growth of children's social and cognitive skills, such as helping children with their homework (Altintas, 2016, Sayer et al., 2004). The time parents invest in developmental childcare has important implications for children's cognitive and non-cognitive development, their education, and their long-term life chances (Hsin and Felfe, 2014, Zick et al., 2001). More educated parents invest more time in developmental childcare than less-educated parents, and this educational gap in parental time investment has widened over time (Altintas, 2016, Kalil et al., 2012, Matsuoka et al., 2015, Park, 2021).

By linking the literature on parental time use, multigenerational coresidence, and multigenerational mobility, we examine how the effects of multigenerational coresidence on parental time in developmental childcare vary by parental and grandparental education. We argue that multigenerational coresidence may be a strategic family arrangement to allow parents to invest more time in child development, especially for families with higher levels of education. Intergenerational cooperation between parents and grandparents may thus act as a mechanism that reproduces educational inequalities across generations.

Our study makes two important contributions to the study of social inequality. First, it enriches our understanding of grandparent effects on children's well-being by placing the discussion of parental time investment in the context of multigenerational coresidence; specifically, how living with grandparents reshapes parent-child time. Existing literature on educational mobility has shown that grandparents may directly influence children's education by providing guidance and serving as role models (Zeng & Xie, 2014; Zhang & Li, 2019). In this study, we focus instead on how the presence of grandparents in the household may alter parents' time with their children. Family systems theory states that relationships within one subsystem can have spill-over effects on relationships within another subsystem (Broderick, 1993). In multigenerational households, grandparents' time support for parents may reshape parental time investment in children. Previous research on the effect of multigenerational coresidence on parental childcare time has often focused on primary childcare (Chen et al., 2000) and does not distinguish developmental childcare from primary childcare (Zhou et al., 2021). We examine how coresidence affects the amount of time parents spend on developmental childcare activities, which are closely linked to children's educational outcomes (Hsin and Felfe, 2014, Zick et al., 2001). With grandparental support with housework and primary childcare (Chen et al., 2011; Hu & Mu, 2021), parents may be able to invest more time in developmental childcare (Pong and Chen, 2010, Zhou et al., 2021).

Second, our study highlights the importance of family structure, particularly multigenerational coresidence, in generating multigenerational inequalities by examining how coresidence affects parents' time investment, depending on the education of parents and grandparents. Previous studies suggest that inequalities in the time parents spend with their children, depending on family structure and parental education, contribute to the diverging destinies of children (McLanahan & Jacobsen, 2015). We extend this discussion to multigenerational coresidence and grandparental education. As discussed later in this article, multigenerational coresidence may be a family strategy for better educated families, allowing parents to invest more time in their children. Children with better educated parents and grandparents in multigenerational households are likely to spend more time with their parents in developmental activities that may improve their academic performance. Increased parental time investment in developmental childcare through multigenerational coresidence could, therefore, be a mechanism producing educational inequalities between children from high- and low-educated families.

China provides a particularly interesting context for understanding how developmental childcare varies by multigenerational living arrangements and the education of parents and grandparents. First, despite recent changes in fertility and family structures, the proportion of three-generation lineal households with grandparents, parents, and children has increased from 15.4 % in 1982 to 18.2 % in 2015 (Li et al., 2020). Generations often live together in response to childcare or old age support needs (Chen, 2005). However, as will be explained below, the dynamics of intergenerational relations differ between patrilocal and matrilocal residence in China. Thus, how coresidence affects parental time investment may depend on whether children live with their paternal or maternal grandparents. Second, Chinese parents have high expectations of their children's academic performance and value intensive parenting (Zhang et al., 2019). This is largely influenced by Confucianism, which values academic success and emphasizes that the perfectibility of human beings can be achieved by education and self-cultivation (Chen et al., 2021; Lam et al., 2002; Leung & Shek, 2011). The high expectation of intensive mothering and the high prevalence of female labor force participation in China incentivizes grandparental support with housework and primary childcare (Chen et al., 2011; Zhou et al., 2021).

Using longitudinal data from the China Family Panel Studies 2010–2018, we employ fixed effects models to examine how the effect of multigenerational coresidence on parental time in developmental childcare varies by parental and grandparental education. In the next section, we first discuss how living with grandparents, especially maternal grandparents, may increase parental time in developmental childcare. We then provide theoretical accounts of how the effect of coresidence on parental time investment may vary by parental education. Finally, we discuss how the increase in parental time in developmental childcare in multigenerational households may be largest when both parental and grandparental education levels are high.

2. Theoretical framework

2.1. Multigenerational coresidence and parental time in developmental childcare

The intergenerational solidarity framework (Bengtson and Roberts, 1991) and the concept of family adaptive strategy (Moen & Wethington, 1992) provide useful accounts of how coresidence with grandparents may increase parental time investment in developmental childcare.

Multigenerational coresidence may be seen as an expression of structural and functional solidarity and as an adaptive strategy to improve family well-being (Chen et al., 2011). Previous studies have shown that coresident grandparents in China often provide time support that reduces young couples' load of housework and basic childcare (Chen et al., 2011; Hu & Mu, 2021; Zhou et al., 2021). Therefore, parents can spend more time in the labor market to maximize the income of the extended family (Shen et al., 2016). In the same vein, coresidence with grandparents could also be seen as a family strategy that allows parents to invest more time in child education to achieve their common goal of child development. In China, despite generational differences in values due to rapid socioeconomic changes (Hu, 2017), generations share a collective aim to improve child education (Chen et al., 2021; Goh, 2006; Li & Xie, 2020). Grandparents providing support with housework and basic childcare may allow parents to invest more time in developmental activities with their children (Pong and Chen, 2010, Zhou et al., 2021).

However, living with paternal and maternal grandparents may have different implications for parents' time use, given gender asymmetries in intergenerational exchanges in China. Multigenerational coresidence in China is predominantly patrilocal, that is, coresidence with paternal grandparents (Gruijters & Ermisch, 2019). In patrilocal residence, the power hierarchy is highly gendered (Cheng, 2019). Wives are expected to serve the needs of their husbands, children, and parents-in-law. Intergenerational relations in patrilocal households tend to involve the exploitations of daughters-in-law and conflicts between mothers and paternal grandparents (Pong and Chen, 2010, Yu and Xie, 2018; Zhang et al., 2019). By contrast, matrilocal residence is non-normative (Pimentel & Liu, 2004) and most likely to occur in the absence of adult sons (Gruijters & Ermisch, 2019) or in response to adult daughters' childcare needs (Zhang et al., 2019). Given patrilineal traditions, paternal grandparents traditionally were more involved in child-rearing than maternal grandparents. However, with the empowerment of women, the downsizing of the family, and the change in family norms, mothers increasingly call on the support of maternal grandparents (Gruijters, 2017; Zhang, 2009). In fact, mothers prefer maternal grandparents to avoid intergenerational conflicts (Zhang et al., 2019).

Under the intergenerational solidarity framework, intergenerational support is more likely when the qualities of intergenerational relations are high (Jæger, 2012, Silverstein and Bengtson, 1997). Given mothers' closer relationship with their parents, mothers in matrilocal households may receive more support in housework and primary childcare (Yu & Xie, 2018), which frees up more time to invest in developmental childcare. Thus, the unconventional character of matrilocal residence provides a unique opportunity to examine how multigenerational coresidence may be a strategic arrangement to allow parents to spend more time with their children.

Hypothesis 1 *Gendered intergenerational solidarity: On average, parents in matrilocal households spend more time in developmental childcare than those in patrilocal or nuclear households.*

2.2. Educational gradient in the effect of multigenerational coresidence on parental time

Differences in parental investment in developmental childcare by socioeconomic groups have been widely documented, particularly in the context of the United States. Compared to working-class parents, who engage in the accomplishment of natural growth, middle-class parents adopt more labor-intensive and time-consuming child-rearing practices (Lareau, 2002). More educated parents,

especially mothers, tend to spend more time in child development (Crosnoe et al., 2002, England and Srivastava, 2013, Vinopal and Gershenson, 2017). This education gap in developmental childcare activities has widened over time (Altintas, 2016). The educational gradient in parental participation in child development and its increase has also been found in different social contexts (Dotti Sani and Treas, 2016, Mikus et al., 2021, Park, 2021).

If multigenerational coresidence is a family strategy to achieve the collective goal of child development, we would expect the effect of coresidence on parental time investment to increase with parental education. That is, parents with higher levels of education, given their cultural values and motives for maintaining status, may have a stronger interest in investing more time in developmental childcare through multigenerational coresidence.

One strand of the literature on the educational gradient in parental time investment explains this difference by drawing on Bourdieu's notion of cultural capital. Similar culture is shared among certain classes (Bourdieu and Passeron, 1990, Lareau and Weininger, 2003). Educated middle-class parents, with the culture of 'concerted cultivation', are expected to promote the success of their children through significant financial and time investment (Lareau, 2002), which is consistent with the ideals of intensive mothering (Hays, 1996). Moreover, highly educated parents have cultural resources and the confidence to intervene on their child's behalf to meet the institutionalized standards of evaluation in the education system (Blackledge, 2001, Vincent, 2001). Therefore, we expect parents with higher education to resort to various resources, including grandparental support, to meet the cultural expectation and thus, to actively engage in children's education.

Another explanation arises from the motives of status maintenance, that educated parents tend to preserve the benefits of the family's social status and avoid the costs of status decline (Barg, 2019a). Comparing the costs of keeping a child in school and the benefits that the child's higher education will bring, parents make a rational choice regarding further investment in their child's education (Barg, 2019b). More importantly, this rationality should be understood in a relative manner (Keller & Zavalloni, 1964). That is, the perceived costs and benefits depend on parental education (i.e., the starting point) (Glaesser & Cooper, 2014). Parents with high levels of education are more likely to perceive the benefit of their children attaining higher levels of education. Therefore, parents with higher education tend to invest more in their children's education, thus passing on the advantages to their children and averting the relative risk of status decline.

Parents with higher levels of education may have less time available for family tasks given their employment status and face higher opportunity costs of domestic work. With grandparents helping with other competing time tasks, such as housework and primary childcare, multigenerational coresidence may enable educated parents to devote additional time to developmental childcare activities in line with their cultural expectations and status maintenance motives.

Hypothesis 2 *Concerted cultivation and status maintenance: If multigenerational coresidence increases parental time investment in developmental childcare, the effect will be larger among more educated parents.*

2.3. Multigenerational educational advantages and the effect of multigenerational coresidence on parental time

The advantage of matrilocal coresidence in developmental childcare may be greatest in families with better educated parents and grandparents. Similar to parents with higher levels of education, grandparents with higher levels of education value investment in their grandchildren's education and share a common interest in maintaining family status across generations (Bol & Kalmijn, 2016). As grandparents typically supplement, rather than substitute, parents in China (Zeng & Xie, 2014), more educated grandparents may foster an environment that supports intensive parenting. Meanwhile, parents with higher levels of education are more likely to use available grandparental support to invest more time in their children because of their cultural values and status maintenance motives. In line with the augmentation hypothesis (Chiang & Park, 2015), we, therefore, expect the effect of coresidence on parental time to be strongest when both parents and grandparents have higher levels of education.

Furthermore, the similarity between more educated parents and grandparents in terms of values and parenting approaches facilitates intergenerational cooperation and improves the effectiveness of parenting (Chiang & Park, 2015; Zhang et al., 2019). From the perspective of family systems theory (Broderick, 1993), the relationship between grandparents and parents may spill over to the relationship between parents and children. Emotional closeness and aligned values and expectations of parents and grandparents may enhance the quality of childcare (Goh, 2006; Zhang et al., 2019). However, when parental education is high but grandparental education is low, differences in values and preferences may lead to intergenerational conflicts and interfere with effective parenting. When grandparental education is high but parental education is low, the impact of coresidence on parents' time investment may also be limited. Parents who experience downward mobility may feel a sense of guilt and embarrassment, while grandparents may be pessimistic about the returns to education (Chiang & Park, 2015). Again, the strained relationship between grandparents and parents may spill over to the interactions between parents and children.

Therefore, children in multigenerational households with better educated parents and better educated grandparents may enjoy the most time with their parents in developmental activities, reflecting multigenerational advantages in education.

Hypothesis 3 *Multigenerational advantage: The advantage of matrilocal coresidence in developmental childcare is the largest in families with high-educated parents and grandparents.*

In summary, we hypothesize the following. On average, parents in matrilocal households spend more time on developmental childcare than in patrilocal or nuclear households (Hypothesis 1 Gendered intergenerational solidarity). However, the magnitude of the effect of matrilocal coresidence on parental time use may vary depending on parental and grandparental education. Matrilocal coresidence is a strategic arrangement where parents with higher levels of education can spend more time on developmental childcare (Hypothesis 2 Concerted cultivation and status maintenance). The advantage of matrilocal coresidence in developmental childcare is the largest in families with more educated parents and grandparents (Hypothesis 3 Multigenerational advantage).

3. Methods

3.1. Data and sample

We analyzed data from 2010, 2012, 2014, 2016, and 2018 waves of the China Family Panel Studies (CFPS), a nationally representative biennial longitudinal study of Chinese households (Xie & Hu, 2014). The CFPS surveyed every member of the household. This included a module for children, answered by each child or the child's primary caregiver; a module for adults, answered by each adult in the household; and a family module, answered by the family respondent. These modules collected extensive information on the characteristics of each child, parent, grandparent, and household, allowing us to examine how parental and grandparental education interacts with living arrangements in predicting parental time in developmental childcare.

The analytical sample was constructed in the following steps. First, we identified 3698 children who were ever aged 6–15 years and attending at least primary school, with both parents interviewed and living in the same household at each wave. We restricted children's age and level of schooling because the measure of hours parents spent in helping their children with homework was consistent across waves only for children aged 6–15, who were attending at least primary school. The nine-year compulsory education in China includes six years of primary school education and three years of middle school education, by the end of which a child is typically around 15 years old. We focused on children living with both parents to compare the hours mothers and fathers spent helping their children with homework. Parental time use in families with only one parent or skipped-generation families is outside the scope of the current study. We restricted the sample to both parents interviewed because parental characteristics that may influence both living arrangements and time with children, such as employment status, were captured in the parent interviews.

Second, we restricted the sample to 2564 children with at least one living maternal grandparent and at least one living paternal grandparent during the observation period to ensure that each child had a non-zero probability of living with maternal or paternal grandparents. We excluded 26 children who lived with both their maternal and paternal grandparents at any wave to focus on transitions between neolocal residence and matrilineal or patrilineal residence. These 2538 children contributed a total of 6844 person-year observations.

Third, we excluded 623 person-year observations with missing data. The main source of missing data was grandparental education. We also excluded 105 person-year observations of children who had only one observation after excluding the missing data. The final analytical sample consisted of 6116 person-year observations from 2225 children.

3.2. Measurement

We measured parental time in developmental childcare by the number of hours per week in which each child received help with homework from each parent in each wave. Parents helping with children's homework is considered directly developmental (Altintas, 2016) and a form of teaching (Kalil et al., 2012). At each wave, the CFPS asked which family members helped the child with homework during the most recent semester; and for each family member who helped, the survey

asked the average number of hours the person helped with the child's homework every week. Based on these survey questions, we identified the average number of hours per week in which a child received help with homework from their mother and father, respectively.

A child's living arrangements with grandparents at each wave included three mutually exclusive categories: (1) not living with any grandparents (neolocal residence, reference group), (2) living with at least one paternal grandparent (patrilocal residence), and (3) living with at least one maternal grandparent (matrilocal residence). The CFPS defines a household as an economically independent dwelling unit with at least one family member. It defines family members as economically interdependent ("tong zao chi fan") immediate relatives, as well as economically interdependent non-immediate relatives who have lived in the household for three months or longer (Xie & Hu, 2014). For each family member, the survey also asks whether the person currently lives in the household. The CFPS considers a person who is temporarily away but will return within three months and live in the household in the long term as still living in the household. Based on these definitions, we defined a multigenerational household as a household consisting of at least a child, a parent, and a grandparent who were economically interdependent and living together in the same household. We defined a neolocal residence as a nuclear household consisting of at least a child and a parent who were economically interdependent and living together.

Parental and grandparental education was treated as time-constant. We used different categorizations for parental and grandparental education, given generational differences in educational distributions. A child's parental education was measured by whether the average years of parental education were more than nine years, namely, above middle school. About a quarter (24.18 %, as shown in Table 1) of the analytical sample had a mean parental education of more than nine years. In other words, we estimated whether the effect of coresidence on parental time was greater for children in the top quartile of parental education. The education of a child's grandparents was measured by whether the average years of education of the highest educated paternal grandparent and the highest educated maternal grandparent were nine years or more, that is, middle school or above. About a quarter (26.1 %, as shown in Table 1) of the sample had a mean grandparent education of nine years or more. We used mean parental and grandparental education because we were primarily interested in the overall educational status of the family and whether the effect of coresidence on parental time was greater for families with high levels of education. Our main results were robust to alternative parameterizations using continuous mean years of parental and grandparental education or using mothers' and grandmothers' education.

To facilitate interpretation, we referred to parental education as low if the mean was nine years or less, and as high if it was over nine years. We referred to grandparental education as low if the mean was less than nine years and as high if it was nine years or more. To examine how the effect of living arrangements varied by both parental and grandparental education, we compared four different combinations of parental and grandparental education: (1) low parental and grandparental education (reference group), (2) low parental education but high grandparental education, (3) high parental education but low grandparental education, and (4) high parental and grandparental education.

Though fixed effects models eliminate time-invariant confounders, time-varying confounders may bias the estimates. Therefore, we adjusted for the following time-varying variables that may be

associated with both living arrangements and parental time with children. First, we controlled for mothers' and fathers' respective employment statuses because work requirements might compete with childcare time (Craig and Mullan, 2011, Gupta et al., 2021). Furthermore, intergenerational living arrangements may be selective on couples' socioeconomic status (Chu et al., 2011, Gruijters and Ermisch, 2019, Ma and Wen, 2016). Second, given the potential dilution of parental time and resources by sibship age-sex composition (Chen, 2020), we included whether the child had a younger sister aged 0–5, whether the child had a younger brother aged 0–5, and the child's number of siblings under 16. As same-age or older siblings may also provide homework help and thus affect parental time, we also included whether the child had a same-age or older sister under 16 and whether the child had a same-age or older brother under 16. Third, in light of educational disparities in rural and urban China (Wu and Treiman, 2004, Wu and Zhang, 2010), we controlled for parents' respective hukou status and whether the child lived in an urban area. Finally, to account for temporal variations in parental time and children's need for parental academic guidance, all models adjusted for whether a child was in middle school or higher, survey year, and age.

3.3. Analytic strategy

To examine how the association between living arrangements and parental time with children may be moderated by parental and grandparental education, we estimated the following fixed effects models for mothers' and fathers' hours, respectively. All standard errors were clustered at the parent level to account for siblings in the sample.

We started with Model 1 to examine the average effect of living arrangements on parental time with children, as expressed in Eq. (1).

$$Y_{it} = \beta_0 + \beta_1 C_{it} + \beta_2 X_{it} + \alpha_i + \mu_{it} \quad (1)$$

where Y_{it} denotes parental time with child i at time t , C_{it} is a set of dummies of child i 's living arrangements at time t (reference is neolocal residence), X_{it} are time-varying controls, α_i is a child fixed effect, and μ_{it} is the error term.

To examine the heterogeneous effects of living arrangements on parental time with children by parental education, we estimated Model 2, as expressed in Eq. (2).

$$Y_{it} = \gamma_0 + \gamma_1 C_{it} + \gamma_2 C_{it} \times P_i + \gamma_3 X_{it} + \tau_i + v_{it} \quad (2)$$

where P_i denotes whether child i 's mean parental education is over nine years; γ_1 is the effect of coresidence on parental time when the mean parental education is low (nine years or fewer); γ_2 is the additional effect of coresidence on parental time when the mean parental education is high (over nine years); τ_i is a child fixed effect; v_{it} is the error term.

To examine how the effect of living arrangements on parental time may vary by both parental and grandparental education, we estimated Model 3, as expressed in Eq. (3).

$$Y_{it} = \omega_0 + \omega_1 C_{it} + \omega_2 C_{it} \times PG_i + \omega_3 X_{it} + \zeta_i + \eta_{it} \quad (3)$$

where PG_i is a set of dummies denoting the different combinations of child i 's parental and grandparental education (reference is low parental education and low grandparental education); ω_1 is the effect of coresidence on parental time, given low parental education and low grandparental education; ω_2 is the additional effect of coresidence on parental time for other combinations of parental and grandparental education; ζ_i is a child fixed effect; η_{it} is the error term. Eq. (3) is equivalent to a three-way interaction between living arrangements, parental education, and grandparental education. Whether the difference in the effect of coresidence between high-educated parents and low-educated parents differs by grandparental education would be directly reported in a three-way interaction, but it needs to be derived from the coefficients in Eq. (3). We chose Eq. (3) because it allows for more intuitive comparisons between families with low levels of education and other families with highly educated parents or highly educated grandparents. In particular, it directly estimates the difference between the least educated families (low education of both parents and grandparents) and the most educated families (high education of both parents and grandparents), which allows us to examine the effect of coresidence given multigenerational advantages in education.

4. Results

4.1. Descriptive statistics

Table 1 shows the descriptive statistics of the main dependent and independent variables pooled across all waves. Approximately 47 % of the sample lived in a patrilocal household, while about 4 % lived in a matrilocal household. On average, a child received twice as much help with homework from mothers as from fathers (2.6 versus 1.2 h per week). There was little difference in mothers' or fathers' hours between neolocal residence and patrilocal residence. However, consistent with Hypothesis 1 gendered intergenerational solidarity, a child in matrilocal residence received about one more hour of help from mothers and about twenty more minutes from fathers than a child in patrilocal or neolocal residence. Both parental and grandparental education were higher in matrilocal households, but lower in patrilocal households. The proportion of observations with a mean parental education of more than nine years was about twice as high in matrilocal households as in patrilocal households (39 % versus 20 %). About 22 % of the observations in matrilocal households had high parental and grandparental education, compared to 9% in patrilocal households.

Table 2 shows the descriptive statistics of the control variables pooled across waves. Most observations had working mothers (81 %) or working fathers (92 %). Over 75 % of the sample were from rural origin given parental hukou status, while about 44% lived in urban areas. About 10 % of the sample had a younger sister aged 0–5 years; 12 % had a younger brother aged 0–5 years; 12 % had a same-age or older sister under 16; 7 % had a same-age or older brother under 16. About 37 % of the sample were in middle school or above. The mean age was about 11 years.

Table 1. Parents' hours on child's homework, parental education, and grandparental education by living arrangements

	Total	Neolocal	Patrilocal	Matrilocal
Mother's hours per week spent helping child's homework	2.58 (4.26)	2.54 (4.30)	2.55 (4.18)	3.47 (4.49)
Father's hours per week spent helping child's homework	1.21 (2.90)	1.20 (2.93)	1.19 (2.84)	1.52 (3.32)
Mean parental education is over nine years (%)	24.18	26.83	20.13	39.42
Mean grandparental education is nine years or more (%)	26.10	26.40	25.46	29.88
Parental and grandparental education				
Low parental education, low grandparental education	60.51	58.48	63.27	53.11
Low parental education, high grandparental education	15.30	14.69	16.60	7.47
High parental education, low grandparental education	13.39	15.13	11.27	17.01
High parental education, high grandparental education	10.79	11.70	8.86	22.41
N (person-years)	6,116	3,008	2,867	241
N (persons)	2,225	1,194	1,184	100

Note. Standard deviations are in parentheses. Parental education is denoted as low if the mean is nine years or fewer and as high if over nine years. Grandparental education is denoted as low if the mean of the most educated paternal grandparent and the most educated maternal grandparent is under nine years and as high if is nine years or more. N = 6,116 person-year observations from 2,225 children.

Table 2. Descriptive statistics of control variables

	Mean/%	SD
Mother is employed (%)	81.36	
Father is employed (%)	92.33	
Mother has rural <i>hukou</i> (%)	78.76	
Father has rural <i>hukou</i> (%)	76.98	
Child is in middle school or above (%)	36.67	
Child has a sister aged 0–5 (%)	9.68	
Child has a brother aged 0–5 (%)	11.95	
Child has a same-age or older sister under 16 (%)	12.49	
Child has a same-age or older brother under 16 (%)	7.18	
Child's number of siblings under 16	0.69	0.81
Child lives in an urban area (%)	44.13	
Survey year		
2010	16.04	
2012	22.40	
2014	23.48	

2016	22.17
2018	15.91
Age	
6	2.17
7	6.80
8	10.99
9	11.56
10	13.82
11	12.54
12	12.49
13	11.72
14	9.70
15	8.21
N (person-years)	6,116

Note. N = 6,116 person-year observations from 2,225 children.

4.2. Fixed effects results

On average, the predicted change in hours parents spent helping children's homework did not vary by living arrangements, based on the fixed effects models (Appendix Table A1). However, the effect of multigenerational coresidence on parental time varied by parental and grandparental education. Table 3 shows the estimates of the heterogeneous effects of living arrangements by parental education using fixed effects models for mothers' and fathers' hours, respectively. The full model results can be found in Table A2 in the appendix. To facilitate interpretation, in Fig. 1, we plotted the predicted changes in hours spent by mothers and fathers helping children with homework in matrilocal or patrilocal residence compared to neolocal residence, by parental education.

Consistent with Hypothesis 2, *concerted cultivation and status maintenance*, the effect of matrilocal residence on mothers' hours was larger among high-educated parents than low-educated parents ($b = 4.286$, $p < .05$, as shown in Table 3). As shown in Fig. 1, living with maternal grandparents increased the amount of homework help children received from their mothers for children with more educated parents, but not for children with less-educated parents. For children with parents with a mean parental education of over nine years, matrilocal residence was associated with an extra three hours of homework help from the mother than neolocal residence. However, for children with a mean parental education of nine years or less, the hours provided by mothers in matrilocal residence did not differ from those in neolocal residence. Living with paternal grandparents, by contrast, had no effect on mothers' hours, regardless of the level of parental education.

Conversely, coresidence with maternal grandparents had null effects on fathers' hours, regardless of the level of parental education. Although the effect of patrilocal residence on fathers' hours was larger among children with high-educated parents than low-educated parents ($b = 1.082$, $p < .05$, as shown in Table 3), the difference in fathers' hours between patrilocal residence and neolocal

residence among children with high-educated parents was less than an hour and only marginally significant ($p < .1$).

Table 4 shows the estimates of the effects of living arrangements by parental and grandparental education using fixed effects models for mothers' and fathers' hours, respectively. The full model results can be found in Table A3 in the appendix. Fig. 2 shows the predicted changes in mothers' and fathers' hours in matrilocal or patrilocal residence compared to neolocal residence, by parental and grandparental education.

Consistent with Hypothesis 3 *multigenerational advantage*, the effect of matrilocal residence on mothers' hours appeared to be the largest among children with high-educated parents and grandparents. Living with maternal grandparents increased the amount of homework help children received from their mothers by about four hours compared to neolocal residence, for children with highly educated parents and grandparents. However, for children with parents or with grandparents with low education levels, mothers' hours did not increase. Living with paternal grandparents had no effect on mothers' hours, regardless of the education of the parents and grandparents.

Coresidence with maternal grandparents had null effects on fathers' hours, regardless of parental and grandparental education. Although the effect of patrilocal residence on fathers' hours was larger for children with high-educated parents but less-educated grandparents than for children with less-educated parents and grandparents ($b = 1.506$, $p < .05$, as shown in Table 4), the difference in fathers' hours between patrilocal residence and neolocal residence among children with high-educated parents but less-educated grandparents was around an hour and only marginally significant ($p < .1$).

The models presented so far controlled for a number of time-varying confounders, including mothers' and fathers' employment status and hukou status, whether the child had a sister aged 0–5, whether the child had a brother aged 0–5, whether the child had a same-age or older sister under 16, whether the child had a same-age or older brother under 16, the child's number of siblings under 16, whether the child lived in an urban area, whether the child was in middle school or above, survey year, and age. We conducted the following sensitivity analyses to test if the main results are robust to alternative model specifications (results available upon request).

First, we examined whether our results were robust to additional controls on parental and grandparental characteristics that may select families into certain living arrangements. For example, generations may live together to reduce parents' load of housework (Chen et al., 2011; Hu & Mu, 2021; Zhou et al., 2021) and allow parents to spend more time in the labor market (Shen et al., 2016). Meanwhile, parents' income, work hours, and housework hours may also affect the amount of time parents spend on developmental childcare. Our main results were robust when we controlled for either parents' work hours, housework hours, or income. For parents with financial resources but not living with grandparents, after-class tutoring can serve as an alternative. The results also remained robust after controlling for whether the child had after-class tutoring or the number of hours the child spent on after-class tutoring.

Multigenerational coresidence may also be selective on grandparental characteristics. Generations may live together in response to grandparents' old age support needs (Chen, 2005). If grandparents

are at relatively old ages, parents may need to spend more time caring for them, which would compete with the time spent on developmental childcare; however, including grandparents' ages in our models would lead to a 4% drop in the number of children in the analytic sample due to missing data. Nevertheless, our main results were robust when we adjusted for whether at least one maternal grandparent was 75 years and older and whether at least one paternal grandparent was 75 years and older.

Second, we tested whether our results varied by children's stage of schooling and gender. Parents' time with children may vary by children's age and learning needs (Fomby & Musick, 2018). For example, parents may spend more time helping children with their homework in primary school. To test whether our results would vary by children's stage of schooling, we included interaction terms between the child attending at least middle school, coresidence, parental education, and grandparental education. The results showed that children's stage of schooling did not modify our main results. Our results also remained robust after controlling for children's school performance. We also tested whether the interactions between living arrangements and parental and grandparental education varied by the gender of the child. Our main conclusions held for both girls and boys.

Finally, the length of time that children spend in certain living arrangements might reflect other unmeasured factors leading to selection bias (Dunifon & Kowaleski-Jones, 2007). We adjusted for the number of spells the child spent in the current living arrangement during the observation window to account for these factors. Our results remained robust after adjusting this time-varying control.

Table 3. Estimates of effects of living arrangements by parental education from fixed effects models of mother’s and father’s hours spent helping children with their homework

	Mother’s Hours	Father’s Hours
	Coef. (SE)	Coef. (SE)
Living arrangements (ref. = not living with grandparents)		
Living with paternal grandparents	−0.348 (0.405)	−0.390 (0.275)
Living with maternal grandparents	−1.333 (1.727)	−0.772 (0.668)
Living arrangements × Mean parental education (ref. = nine years or fewer)		
Living with paternal grandparents	−0.205 (0.744)	1.082* (0.490)
× Mean parental education is over nine years		
Living with maternal grandparents	4.286* (2.113)	−0.730 (1.605)
× Mean parental education is over nine years		
Constant	3.180*** (0.797)	1.923** (0.610)
Controls	Yes	Yes
N	6,116	6,116

Note: All models control for survey year, child’s age, mother’s and father’s respective employment status and *hukou* status, whether the child is in middle school or above, whether the child has a sister aged 0–5, whether the child has a brother aged 0–5, whether the child has a same-age or older sister under 16, whether the child has a same-age or older brother under 16, the child’s number of siblings under 16, and whether the child lives in an urban area. Standard errors are clustered at the parent level to account for siblings in the analytic sample. Full model results are in Appendix Table A2. N = 6,116 person-year observations from 2,225 children.

†p<.1; *p<.05; **p<.01; ***p<.001.

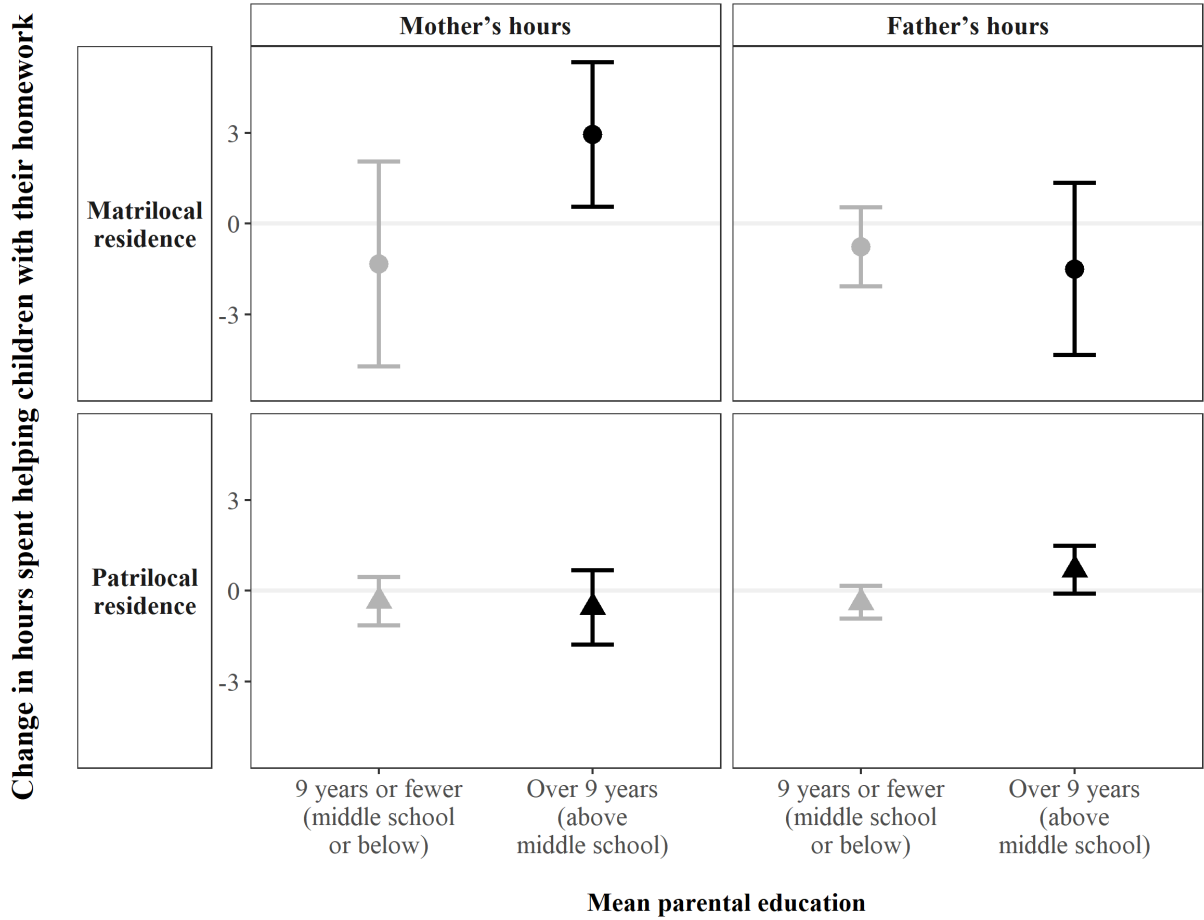


Fig. 1. Predicted change in mother's and father's hours spent helping children with their homework when living with maternal or paternal grandparents relative to not living with any grandparents by mean parental education. *Note:* Predictions are derived from fixed effects models in Appendix Table A2. N = 6,116 person-year observations from 2,225 children.

Table 4. Estimates of effects of living arrangements by parental and grandparental education from fixed effects models of mother's and father's hours spent helping children with their homework

	Mother's Hours Coef. (SE)	Father's Hours Coef. (SE)
Living arrangements (ref. = not living with grandparents)		
Living with paternal grandparents	-0.092 (0.335)	-0.391 (0.270)
Living with maternal grandparents	-1.592 (1.909)	-0.815 (0.741)
Living arrangements × Parental and grandparental education (ref. = low parental education, low grandparental education)		
Living with paternal grandparents ×		
Low parental education, high grandparental education	-1.169 (1.429)	0.010 (0.850)
High parental education, low grandparental education	-1.089 (0.798)	1.506* (0.645)
High parental education, high grandparental education	0.486 (1.126)	0.495 (0.571)
Living with maternal grandparents ×		
Low parental education, high grandparental education	2.533 (2.009)	0.444 (0.897)
High parental education, low grandparental education	1.548 (2.824)	-1.350 (1.700)
High parental education, high grandparental education	5.450* (2.345)	-0.639 (1.918)
Constant	3.144*** (0.797)	1.922** (0.611)
Controls	Yes	Yes
N	6,116	6,116

Note: Parental education is denoted as low if the mean is nine years or fewer and as high if over nine years. Grandparental education is denoted as low if the mean of the most educated paternal grandparent and the most educated maternal grandparent is under nine years and as high if nine years or more. All models control for survey year, child's age, mother's and father's respective employment status and *hukou* status, whether the child is in middle school or above, whether the child has a sister aged 0–5, whether the child has a brother aged 0–5, whether the child has a same-age or older sister under 16, whether the child has a same-age or older brother under 16, the child's number of siblings under 16, and whether the child lives in an urban area. Standard errors are clustered at the parent level to account for siblings in the analytic sample. Full model results are in Appendix Table A3. N = 6,116 person-year observations from 2,225 children. †p<.1; *p<.05; **p<.01; ***p<.001.

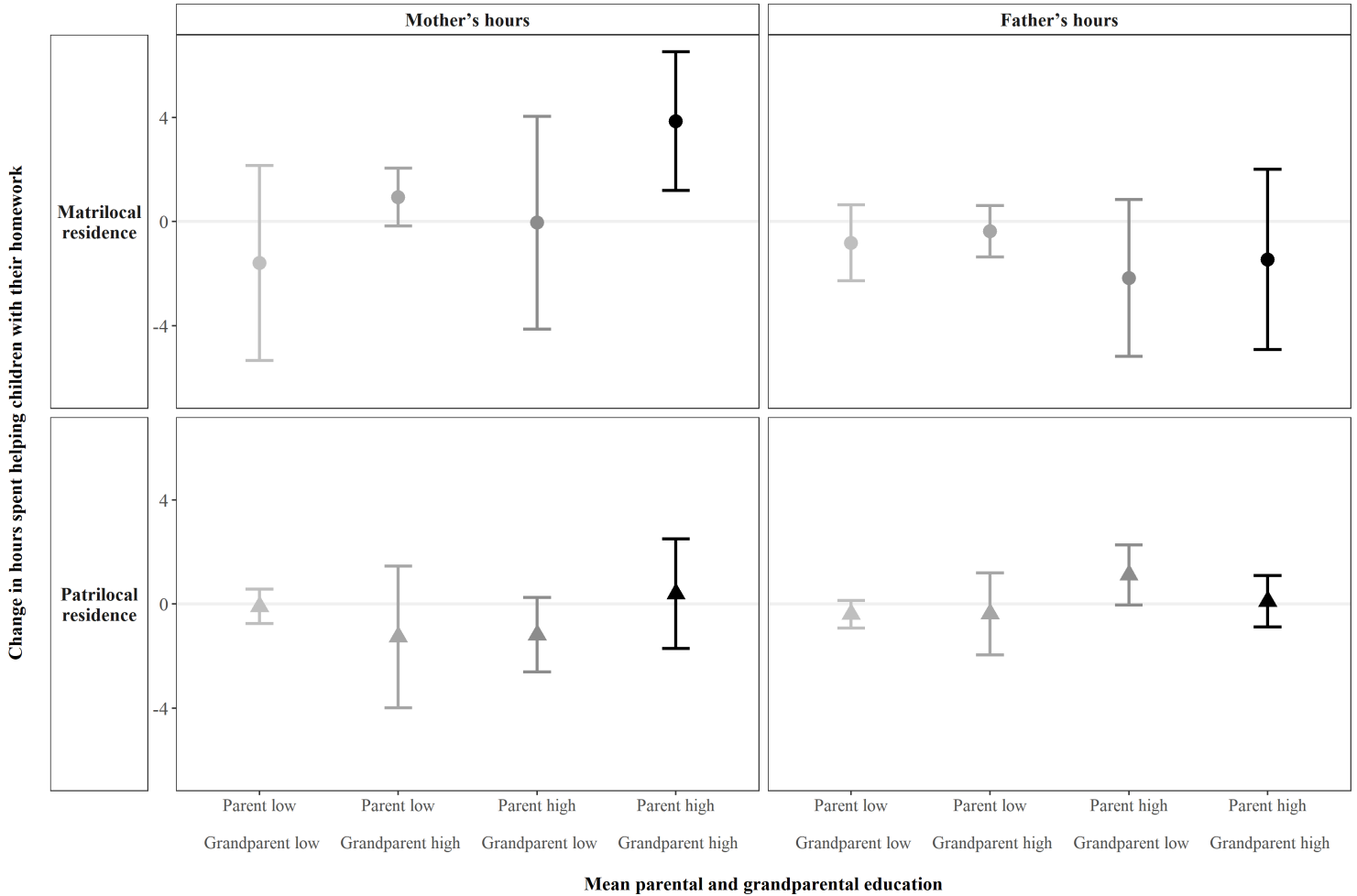


Fig. 2. Predicted change in mother’s and father’s hours spent helping children with their homework when living with maternal or paternal grandparents relative to not living with any grandparents by mean parental and grandparental education. *Note:* Parental education is denoted as low if the mean is nine years or fewer and as high if over nine years. Grandparental education is denoted as low if the mean of the most educated paternal grandparent and the most educated maternal grandparent is under nine years and as high if nine years or more. Predictions are derived from fixed effects models in Appendix Table A3. N = 6,116 person-year observations from 2,225 children.

5. Discussion

Parental time investment in developmental childcare is crucial for children's cognitive and non-cognitive development (Hsin and Felfe, 2014, Zick et al., 2001). However, existing knowledge on parental developmental childcare in multigenerational coresidence remains limited. In China, our results suggest that for children with highly educated parents, living with maternal grandparents increases mothers' time for developmental childcare. Moreover, the benefit of matrilocal coresidence in terms of mothers' time investment is greatest for children in families with high levels of education when both parental and grandparental education levels are high. Matrilocal coresidence could thus be a strategic arrangement for highly educated families in China to allow more parental time investment in children. As increases in parental developmental childcare are associated with better academic achievement for the child (Zick et al., 2001), these findings suggest that through the intergenerational cooperation between parents and grandparents in matrilocal residence, high-educated families manage to sustain social status and reproduce educational advantages across generations.

Our study also reveals the persistent gender gap in time use between fathers and mothers in China. Fathers' time spent on developmental childcare is considerably lower than mothers' and varies little by living arrangements, parental education, and grandparental education. The fact that matrilocal coresidence only affects mothers' time for children with highly educated parents suggests an emphasis on gender enactment through intensive mothering, especially in high-educated families (Gupta et al., 2021). The measurement of parental time in our study could not distinguish whether mothers and fathers helped children's homework together or separately. The relative amount of shared care and solo care time may vary by parents' gender and education level (Craig and Mullan, 2011, Vinopal and Gershenson, 2017). Future research could further investigate how multigenerational coresidence affects mothers' and fathers' time together and alone in developmental childcare.

Due to limited data, we cannot explore further how grandparents may be directly involved in developmental childcare. Although matrilocal coresidence may not increase parental time for children with low-educated parents and high-educated grandparents, resources and support from high-educated grandparents may compensate for limited parental time (Jæger, 2012). Educated grandparents may foster an intellectual environment conducive to cognitive development, shape children's educational aspirations, and provide direct academic guidance (Arenas, 2017, Zeng and Xie, 2014). Non-residential grandparents living in close proximity may also play an important role in child development (Chen et al., 2011). Furthermore, grandparents' abilities to provide support with housework, primary childcare, and developmental childcare may depend on their health and employment status, which we could not further explore due to data limitations. Future research with longitudinal data on intergenerational proximity and detailed grandparental characteristics could further investigate whether proximity to maternal grandparents extends parental time in educated families and how these effects vary by grandparents' health and work status.

Our findings highlight the diverging destinies of children depending on the household structure and parental and grandparental education in China. High-educated mothers are more likely to live in matrilocal residence than low-educated mothers (Chu et al., 2011, Gruijters and Ermisch, 2019) and take advantage of such living arrangements to invest more time in child education.

Furthermore, high-educated maternal grandparents may not only transmit more financial, social, and cultural resources to children (Zhang et al., 2019) but also provide more time and financial support that allow mothers to spend additional time in developmental childcare. Increased parental time investment in developmental childcare through matrilineal coresidence could thus be a mechanism that produces educational inequalities between children from families with high and low educational levels.

Declarations of Competing Interest

None.

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References

- Altintas, E. (2016). The widening education gap in developmental child care activities in the United States, 1965-2013. *Journal of Marriage and Family*, 78(1), 26–42.
<https://doi.org/10.1111/jomf.12254>
- Amorim, M. (2019). Are grandparents a blessing or a burden? Multigenerational coresidence and child-related spending. *Social Science Research*, 80, 132–144.
<https://doi.org/10.1016/j.ssresearch.2019.02.002>
- Arenas, E. (2017). Abuelos at home: Differential impact on children's education by family structure. *Research in Social Stratification and Mobility*, 52, 36–48.
<https://doi.org/10.1016/j.rssm.2017.09.001>
- Barg, K. (2019a). Why are middle-class parents more involved in school than working-class parents? *Research in Social Stratification and Mobility*, 59, 14–24.
<https://doi.org/10.1016/j.rssm.2018.12.002>
- Barg, K. (2019b). An analysis of social class differentials in parent-initiated contact with teachers. *British Journal of Sociology of Education*, 40(3), 289–308.
<https://doi.org/10.1080/01425692.2018.1540294>
- Bengtson, V. L., & Roberts, R. E. L. (1991). Intergenerational solidarity in aging families: An example of formal theory construction. *Journal of Marriage and Family*, 53(4), 856–870.
<https://doi.org/10.2307/352993>
- Blackledge, A. (2001). The wrong sort of capital? Bangladeshi women and their children's schooling in Birmingham, U.K. *International Journal of Bilingualism*, 5(3), 345–369.
<https://doi.org/10.1177/13670069010050030501>
- Bol, T., & Kalmijn, M. (2016). Grandparents' resources and grandchildren's schooling: Does grandparental involvement moderate the grandparent effect? *Social Science Research*, 55, 155–170. <https://doi.org/10.1016/j.ssresearch.2015.09.011>

- Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in education, society and culture* (R. Nice, Trans.; Second). SAGE Publications.
- Broderick, C. B. (1993). *Understanding family process: Basics of family systems theory*. SAGE.
- Chen, F. (2005). Residential patterns of parents and their married children in contemporary China: A life course approach. *Population Research and Policy Review*, 24(2), 125–148. <https://doi.org/10.1007/s11113-004-6371-9>
- Chen, F., Liu, G., & Mair, C. A. (2011). Intergenerational ties in context: Grandparents caring for grandchildren in China. *Social Forces*, 90(2), 571–594.
- Chen, F., Short, S. E., & Entwisle, B. (2000). The impact of grandparental proximity on maternal childcare in China. *Population Research and Policy Review*, 19(6), 571–590. <https://doi.org/10.1023/A:1010618302144>
- Chen, S. (2020). Parental investment after the birth of a sibling: The effect of family size in low-fertility China. *Demography*, 57(6), 2085–2111. <https://doi.org/10.1007/s13524-020-00931-2>
- Chen, Y., Huang, R., Lu, Y., & Zhang, K. (2021). Education fever in China: Children's academic performance and parents' life satisfaction. *Journal of Happiness Studies*, 22(2), 927–954. <https://doi.org/10.1007/s10902-020-00258-0>
- Cheng, C. (2019). Women's education, intergenerational coresidence, and household decision-making in China. *Journal of Marriage and Family*, 81(1), 115–132. <https://doi.org/10.1111/jomf.12511>
- Chiang, Y.-L., & Park, H. (2015). Do grandparents matter? A multigenerational perspective on educational attainment in Taiwan. *Social Science Research*, 51, 163–173. <https://doi.org/10.1016/j.ssresearch.2014.09.013>
- Chu, C. Y. C., Xie, Y., & Yu, R. R. (2011). Coresidence with elderly parents: A comparative study of Southeast China and Taiwan. *Journal of Marriage and Family*, 73(1), 120–135. <https://doi.org/10.1111/j.1741-3737.2010.00793.x>
- Craig, L., & Mullan, K. (2011). How mothers and fathers share childcare: A cross-national time-use comparison. *American Sociological Review*, 76(6), 834–861. <https://doi.org/10.1177/0003122411427673>
- Crosnoe, R., Mistry, R. S., & Elder, G. H., Jr. (2002). Economic disadvantage, family dynamics, and adolescent enrollment in higher education. *Journal of Marriage and Family*, 64(3), 690–702. <https://doi.org/10.1111/j.1741-3737.2002.00690.x>
- Dotti Sani, G. M., & Treas, J. (2016). Educational gradients in parents' child-care time across countries, 1965–2012. *Journal of Marriage and Family*, 78(4), 1083–1096. <https://doi.org/10.1111/jomf.12305>
- Dunifon, R., & Kowaleski-Jones, L. (2007). The Influence of grandparents in single-mother families. *Journal of Marriage and Family*, 69(2), 465–481. <https://doi.org/10.1111/j.1741-3737.2007.00377.x>
- England, P., & Srivastava, A. (2013). Educational differences in US parents' time spent in child care: The role of culture and cross-spouse influence. *Social Science Research*, 42(4), 971–988. <https://doi.org/10.1016/j.ssresearch.2013.03.003>
- Fomby, P., & Musick, K. (2018). Mothers' time, the parenting package, and links to healthy child development. *Journal of Marriage and Family*, 80(1), 166–181. <https://doi.org/10.1111/jomf.12432>

- Glaesser, J., & Cooper, B. (2014). Using rational action theory and Bourdieu's habitus theory together to account for educational decision-making in England and Germany. *Sociology*, 48(3), 463–481. <https://doi.org/10.1177/0038038513490352>
- Goh, E. C. L. (2006). Raising the precious single child in urban China—An intergenerational joint mission between parents and grandparents. *Journal of Intergenerational Relationships*, 4(3), 6–28. https://doi.org/10.1300/J194v04n03_02
- Grujters, R. J. (2017). Intergenerational contact in Chinese families: Structural and cultural explanations. *Journal of Marriage and Family*, 79(3), 758–768. <https://doi.org/10.1111/jomf.12390>
- Grujters, R. J., & Ermisch, J. (2019). Patrilocal, matriloc, or neolocal? Intergenerational proximity of married couples in China. *Journal of Marriage and Family*, 81(3), 549–566. <https://doi.org/10.1111/jomf.12538>
- Gupta, S., Sayer, L. C., & Pearlman, J. (2021). Educational and type of day differences in mothers' time availability for child care and housework. *Journal of Marriage and Family*, 83(3), 786–802. <https://doi.org/10.1111/jomf.12754>
- Hays, S. (1996). *The cultural contradictions of motherhood*. Yale University Press.
- Hsin, A., & Felfe, C. (2014). When does time matter? Maternal employment, children's time with parents, and child development. *Demography*, 51(5), 1867–1894. <https://doi.org/10.1007/s13524-014-0334-5>
- Hu, A. (2017). Providing more but receiving less: Daughters in intergenerational exchange in mainland China. *Journal of Marriage and Family*, 79(3), 739–757. <https://doi.org/10.1111/jomf.12391>
- Hu, S., & Mu, Z. (2021). Extended gender inequality? Intergenerational coresidence and division of household labor. *Social Science Research*, 93, 102497–102497. <https://doi.org/10.1016/j.ssresearch.2020.102497>
- Jæger, M. M. (2012). The extended family and children's educational success. *American Sociological Review*, 77(6), 903–922. <https://doi.org/10.1177/0003122412464040>
- Kalil, A., Ryan, R., & Chor, E. (2014). Time investments in children across family structures. *The ANNALS of the American Academy of Political and Social Science*, 654(1), 150–168. <https://doi.org/10.1177/0002716214528276>
- Kalil, A., Ryan, R., & Corey, M. (2012). Diverging destinies: Maternal education and the developmental gradient in time with children. *Demography*, 49(4), 1361–1383. <https://doi.org/10.1007/s13524-012-0129-5>
- Keller, S., & Zavalloni, M. (1964). Ambition and social class: A respecification. *Social Forces*, 43(1), 58–70. <https://doi.org/10.2307/2575967>
- Lam, C., Sui, E., Ho, C., & Wong, N. (2002). Parents' beliefs and practices in education in Confucian heritage cultures: The Hong Kong case. *Journal of Southeast Asian Education*, 3(1), 99–114.
- 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>
- Lareau, A., & Weininger, E. B. (2003). Cultural capital in educational research: A critical assessment. *Theory and Society*, 32(5), 567–606. <https://doi.org/10.1023/B:RYSO.0000004951.04408.b0>
- Leung, J. T. Y., & Shek, D. T. L. (2011). Expecting my child to become “dragon” – Development of the Chinese Parental Expectation on Child's Future Scale. *International*

- Journal on Disability and Human Development*, 10(3), 257–265.
<https://doi.org/10.1515/ijdhhd.2011.043>
- Li, T., Fan, W., & Song, J. (2020). The household structure transition in China: 1982–2015. *Demography*, 57(4), 1369–1391. <https://doi.org/10.1007/s13524-020-00891-7>
- Li, W., & Xie, Y. (2020). The influence of family background on educational expectations: A comparative study. *Chinese Sociological Review*, 52(3), 269–294.
<https://doi.org/10.1080/21620555.2020.1738917>
- Ma, S., & Wen, F. (2016). Who coresides with parents? An analysis based on sibling comparative advantage. *Demography*, 53(3), 623–647. <https://doi.org/10.1007/s13524-016-0468-8>
- Matsuoka, R., Nakamuro, M., & Inui, T. (2015). Emerging inequality in effort: A longitudinal investigation of parental involvement and early elementary school-aged children's learning time in Japan. *Social Science Research*, 54, 159–176.
<https://doi.org/10.1016/j.ssresearch.2015.06.009>
- McLanahan, S., & Jacobsen, W. (2015). Diverging destinies revisited. In P. R. Amato, A. Booth, S. M. McHale, & J. Van Hook (Eds.), *Families in an era of increasing inequality: Diverging destinies* (pp. 3–23). Springer International Publishing.
https://doi.org/10.1007/978-3-319-08308-7_1
- Mikus, K., Tieben, N., & Schober, P. S. (2021). Concerted cultivation in early childhood and social inequalities in cognitive skills: Evidence from a German panel study. *Research in Social Stratification and Mobility*, 72, 100547.
<https://doi.org/10.1016/j.rssm.2020.100547>
- Moen, P., & Wethington, E. (1992). The concept of family adaptive strategies. *Annual Review of Sociology*, 18, 233–251. <https://doi.org/10.1146/annurev.so.18.080192.001313>
- Park, H. (2021). Diverging gaps in childcare time by parental education in South Korea. *Demographic Research*, S30(6), 143–156. <https://doi.org/10.4054/DemRes.2021.44.6>
- Pimentel, E. E., & Liu, J. (2004). Exploring nonnormative coresidence in urban China: Living with wives' parents. *Journal of Marriage and Family*, 66(3), 821–836.
<https://doi.org/10.1111/j.0022-2445.2004.00055.x>
- Pong, S., & Chen, V. W. (2010). Co-resident grandparents and grandchildren's academic performance in Taiwan. *Journal of Comparative Family Studies*, 41(1), 111–129.
- Sayer, L. C., Gauthier, A. H., & Furstenberg Jr., F. F. (2004). Educational differences in parents' time with children: Cross-national variations. *Journal of Marriage and Family*, 66(5), 1152–1169. <https://doi.org/10.1111/j.0022-2445.2004.00084.x>
- Shen, K., Yan, P., & Zeng, Y. (2016). Coresidence with elderly parents and female labor supply in China. *Demographic Research*, 35(23), 645–670.
<https://doi.org/10.4054/DemRes.2016.35.23>
- Silverstein, M., & Bengtson, V. L. (1997). Intergenerational solidarity and the structure of adult child–parent relationships in American families. *American Journal of Sociology*, 103(2), 429–460. <https://doi.org/10.1086/231213>
- Song, X., & Mare, R. D. (2019). Shared lifetimes, multigenerational exposure, and educational mobility. *Demography*, 56(3), 891–916. <https://doi.org/10.1007/s13524-019-00772-8>
- Vincent, C. (2001). Social class and parental agency. *Journal of Education Policy*, 16(4), 347–364. <https://doi.org/10.1080/0268093011-54344>

- Vinopal, K., & Gershenson, S. (2017). Re-conceptualizing gaps by socioeconomic status in parental time with children. *Social Indicators Research*, *133*(2), 623–643. <https://doi.org/10.1007/s11205-016-1370-x>
- Wu, X., & Treiman, D. J. (2004). The household registration system and social stratification in China: 1955-1996. *Demography*, *41*(2), 363–384. <https://doi.org/10.1353/dem.2004.0010>
- Wu, X., & Zhang, Z. (2010). Changes in educational inequality in China, 1990-2005: Evidence from the population census data. *Research in the Sociology of Education*, *17*, 123–152. [https://doi.org/10.1108/S1479-3539\(2010\)0000017007](https://doi.org/10.1108/S1479-3539(2010)0000017007)
- Xie, Y., & Hu, J. (2014). An introduction to the China Family Panel Studies (CFPS). *Chinese Sociological Review*, *47*(1), 3–29. <https://doi.org/10.2753/CSA2162-0555470101>
- Yu, J., & Xie, Y. (2018). Motherhood penalties and living arrangements in China. *Journal of Marriage and Family*, *80*(5), 1067–1086. <https://doi.org/10.1111/jomf.12496>
- Zeng, Z., & Xie, Y. (2014). The effects of grandparents on children’s schooling: Evidence from rural China. *Demography*, *51*(2), 599–617. <https://doi.org/10.1007/s13524-013-0275-4>
- Zhang, C., Fong, V. L., Yoshikawa, H., Way, N., Chen, X., & Lu, Z. (2019). The rise of maternal grandmother child care in urban Chinese families. *Journal of Marriage and Family*, *81*(5), 1174–1191. <https://doi.org/10.1111/jomf.12598>
- Zhang, M., & Li, Y. (2019). Family fortunes: The persisting grandparents’ effects in contemporary British society. *Social Science Research*, *77*, 179–192. <https://doi.org/10.1016/j.ssresearch.2018.08.010>
- Zhang, W. (2009). “A married out daughter is like spilt water”? Women’s increasing contacts and enhanced ties with their natal families in post-reform rural north China. *Modern China*, *35*(3), 256–283. <https://doi.org/10.1177/0097700408329613>
- Zhou, M., Kan, M.-Y., & He, G. (2021). Intergenerational co-residence and young couple’s time use in China. *Chinese Sociological Review*. <https://doi.org/10.1080/21620555.2021.1972285>
- Zick, C. D., Bryant, W. K., & Österbacka, E. (2001). Mothers’ employment, parental involvement, and the implications for intermediate child outcomes. *Social Science Research*, *30*(1), 25–49. <https://doi.org/10.1006/ssre.2000.0685>

Appendix

Table A1. Fixed effects models of mothers' and fathers' hours spent helping children with their homework by living arrangements

	Mother's Hours Coef. (SE)	Father's Hours Coef. (SE)
Living arrangements (ref. = not living with grandparents)		
Living with paternal grandparents	−0.416 (0.341)	−0.103 (0.232)
Living with maternal grandparents	1.405 (1.094)	−1.322 (0.947)
Mother is employed	0.031 (0.219)	0.070 (0.143)
Father is employed	0.111 (0.269)	−0.017 (0.218)
Mother has rural <i>hukou</i>	0.699 (0.501)	0.242 (0.342)
Father has rural <i>hukou</i>	−0.300 (0.549)	−0.392 (0.320)
Child is in middle school or above	−0.566** (0.194)	−0.165 (0.148)
Child has a sister aged 0–5	−0.355 (0.272)	0.134 (0.185)
Child has a brother aged 0–5	−0.344 (0.247)	0.118 (0.173)
Child has a same-age or older sister under 16	−0.678† (0.367)	−0.406 (0.279)
Child has a same-age or older brother under 16	−0.250 (0.447)	−0.257 (0.346)
Child's number of siblings under 16	−0.108 (0.271)	−0.200 (0.192)
Child lives in an urban area	0.414 (0.365)	0.159 (0.378)
Survey year (ref. = 2010)		
2012	−0.140 (0.533)	−0.110 (0.468)
2014	0.080 (1.047)	−0.100 (0.916)
2016	−0.359	−0.467

	(1.561)	(1.385)
2018	-0.128	-0.378
	(2.061)	(1.817)
Child's age (ref. = 6)		
7	1.327†	-0.032
	(0.717)	(0.478)
8	0.323	0.173
	(0.635)	(0.559)
9	0.757	0.143
	(1.017)	(0.778)
10	-0.523	0.171
	(1.090)	(0.941)
11	-0.210	-0.110
	(1.463)	(1.173)
12	-1.457	-0.122
	(1.586)	(1.386)
13	-0.957	-0.280
	(1.957)	(1.623)
14	-1.721	-0.464
	(2.102)	(1.823)
15	-1.496	-0.541
	(2.463)	(2.080)
Constant	3.132***	1.856**
	(0.791)	(0.605)
N	6,116	6,116

Note. Standard errors are clustered at the parent level to account for siblings in the analytic sample. N = 6,116 person-year observations from 2,225 children.

†p<.1; *p<.05; **p<.01; ***p<.001.

Table A2. Fixed effects models of mothers' and fathers' hours spent helping children with their homework by living arrangements and parental education

	Mother's Hours Coef. (SE)	Father's Hours Coef. (SE)
Living arrangements (ref. = not living with grandparents)		
Living with paternal grandparents	-0.348 (0.405)	-0.390 (0.275)
Living with maternal grandparents	-1.333 (1.727)	-0.772 (0.668)
Living arrangements × Mean parental education (ref. = nine years or fewer)		
Living with paternal grandparents × Mean parental education is over nine years	-0.205 (0.744)	1.082* (0.490)
Living with maternal grandparents × Mean parental education is over nine years	4.286* (2.113)	-0.730 (1.605)
Mother is employed	0.034 (0.219)	0.065 (0.143)
Father is employed	0.114 (0.268)	-0.019 (0.217)
Mother has rural <i>hukou</i>	0.692 (0.501)	0.244 (0.342)
Father has rural <i>hukou</i>	-0.311 (0.552)	-0.421 (0.323)
Child is in middle school or above	-0.566** (0.194)	-0.163 (0.148)
Child has a sister aged 0–5	-0.378 (0.272)	0.155 (0.185)
Child has a brother aged 0–5	-0.332 (0.247)	0.117 (0.174)
Child has a same-age or older sister under 16	-0.674† (0.368)	-0.387 (0.279)
Child has a same-age or older brother under 16	-0.241 (0.448)	-0.251 (0.346)
Child's number of siblings under 16	-0.113 (0.272)	-0.209 (0.192)
Child lives in an urban area	0.416 (0.365)	0.151 (0.378)
Survey year (ref. = 2010)		
2012	-0.148 (0.533)	-0.102 (0.469)

2014	0.071 (1.047)	-0.080 (0.919)
2016	-0.368 (1.560)	-0.433 (1.389)
2018	-0.134 (2.061)	-0.334 (1.822)
Child's age (ref. = 6)		
7	1.335† (0.718)	-0.053 (0.479)
8	0.311 (0.634)	0.153 (0.560)
9	0.751 (1.017)	0.108 (0.781)
10	-0.522 (1.089)	0.135 (0.944)
11	-0.212 (1.463)	-0.146 (1.177)
12	-1.455 (1.585)	-0.160 (1.390)
13	-0.966 (1.956)	-0.323 (1.628)
14	-1.723 (2.101)	-0.508 (1.828)
15	-1.496 (2.462)	-0.591 (2.086)
Constant	3.180*** (0.797)	1.923** (0.610)
N	6,116	6,116

Note. Standard errors are clustered at the parent level to account for siblings in the analytic sample. N = 6,116 person-year observations from 2,225 children.

†p<.1; *p<.05; **p<.01; ***p<.001.

Table A3. Fixed effects models of mothers' and fathers' hours spent helping children with their homework by living arrangements, parental education, and grandparental education

	Mother's Hours Coef. (SE)	Father's Hours Coef. (SE)
Living arrangements (ref. = not living with grandparents)		
Living with paternal grandparents	-0.092 (0.335)	-0.391 (0.270)
Living with maternal grandparents	-1.592 (1.909)	-0.815 (0.741)
Living arrangements × Parental and grandparental education (ref. = low parental education, low grandparental education)		
Living with paternal grandparents ×		
Low parental education, high grandparental education	-1.169 (1.429)	0.010 (0.850)
High parental education, low grandparental education	-1.089 (0.798)	1.506* (0.645)
High parental education, high grandparental education	0.486 (1.126)	0.495 (0.571)
Living with maternal grandparents ×		
Low parental education, high grandparental education	2.533 (2.009)	0.444 (0.897)
High parental education, low grandparental education	1.548 (2.824)	-1.350 (1.700)
High parental education, high grandparental education	5.450* (2.345)	-0.639 (1.918)
Mother is employed	0.030 (0.221)	0.068 (0.144)
Father is employed	0.101 (0.266)	-0.020 (0.217)
Mother has rural <i>hukou</i>	0.694 (0.502)	0.248 (0.342)
Father has rural <i>hukou</i>	-0.264 (0.551)	-0.416 (0.325)
Child is in middle school or above	-0.561** (0.195)	-0.164 (0.148)
Child has a sister aged 0–5	-0.368 (0.273)	0.153 (0.186)
Child has a brother aged 0–5	-0.337 (0.247)	0.114 (0.173)

Child has a same-age or older sister under 16	-0.682† (0.369)	-0.379 (0.279)
Child has a same-age or older brother under 16	-0.264 (0.448)	-0.239 (0.347)
Child's number of siblings under 16	-0.107 (0.272)	-0.217 (0.192)
Child lives in an urban area	0.405 (0.368)	0.159 (0.379)
Survey year (ref. = 2010)		
2012	-0.158 (0.533)	-0.096 (0.470)
2014	0.051 (1.047)	-0.067 (0.920)
2016	-0.393 (1.560)	-0.412 (1.391)
2018	-0.174 (2.061)	-0.306 (1.825)
Child's age (ref. = 6)		
7	1.362† (0.720)	-0.057 (0.478)
8	0.321 (0.635)	0.145 (0.561)
9	0.778 (1.018)	0.101 (0.781)
10	-0.487 (1.089)	0.122 (0.945)
11	-0.181 (1.463)	-0.160 (1.178)
12	-1.402 (1.585)	-0.182 (1.392)
13	-0.932 (1.957)	-0.340 (1.630)
14	-1.667 (2.100)	-0.533 (1.830)
15	-1.442 (2.462)	-0.619 (2.088)
Constant	3.144*** (0.797)	1.922** (0.611)
N	6,116	6,116

Note. Parental education is denoted as low if the mean is nine years or fewer and as high if over nine years. Grandparental education is denoted as low if the mean of the most educated paternal grandparent and the most

educated maternal grandparent is under nine years and as high if nine years or more. Standard errors are clustered at the parent level to account for siblings in the analytic sample. N = 6,116 person-year observations from 2,225 children. †p<.1; *p<.05; **p<.01; ***p<.001.