Missing Time with Parents: Son Preference among Asians in the United States

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Abstract

We study prevalence of son preference in families of East and South Asian origin living in the U.S. by investigating parental time investments in children using American Time Use Surveys. Estimates show that East and South Asian mothers spend additional 39 minutes of total time and 30 minutes of quality time per day with their young (aged 0-5 years) sons than with young daughters; fathers' time with young children is gender neutral. We find gender specialization in time with children aged 6-17 with fathers spending more time with sons and mothers spending more time with daughters.

Keywords: Son preference; Parental investments; Time use; Immigrants

Introduction

An extensive body of research documents the existence of son preference in many East and South Asian societies. These studies find that daughters are less likely to be born, and if born, less likely to live past childhood, go to school, receive medical treatment when sick, and live above subsistence compared to sons.[1] In this paper, we investigate if son preference or discrimination against daughters persists in families of East and South Asian origin in the U.S., a fast growing ethnic group in the country, by studying the quantity and quality of parental time investment in children.

Previous research shows that East and South Asian immigrants in the U.S. and Canada have boy-birth percentages at higher parity (second or higher births) that exceed what is biologically normal especially if previous children were girls, inferring that these immigrant parents exercised sex selection, and that bias against daughters continues to prevail even among East and South Asian families living in rich countries (Abrevaya, 2009; Almond & Edlund, 2008; Almond, Edlund, & Milligan, 2013).[2] However, there is no research on whether parents of East and South Asian origin in the U.S. or in other non-Asian countries discriminate against daughters in their allocation of family resources including parental time on childcare and other activities with children, a critical, yet least studied, developmental input that can impact abilities and outcomes later in life (Heckman, 2006). Examining East and South Asian immigrants in the U.S. can provide insights into whether the root cause of son preference in East and South Asia is

[1] See for instance, Chen, Huq and D'Souza (1981), Chung and Gupta (2007), Coale and Banister (1994), Das Gupta, Chung and Shuzhuo (2009), Guilmoto (2009) Jayachandran and Kuziemko (2011), Marcoux (2002), Nishikiori et al. (2006), Pande (2003), Sen (1990), UNESCO Institute for Statistics (2005), and World Bank (2011).

[2] Indian immigrant women in the U.S. who seek prenatal sex selection services cite pressure from family members, threat of abuse, and an upbringing that emphasizes the importance of sons as reasons for the women's desire for sons (Puri, Adams, Ivey, & Nachtigall, 2011).

economic or cultural.

Bias against daughters is often linked to cultural norms that relegate daughters to a lower status than sons. For instance, in India and China certain religious and funerary rituals can only be performed by sons (Chung & Gupta, 2007; Das Gupta et al., 2003). Family lineage in these and other patriarchal societies is traced through male offspring. Social institutions and norms in East and South Asian societies also limit the economic and educational opportunities of daughters and create a discriminatory environment against them.[3] Additionally, institutions that strengthen and perpetuate these cultural norms make investments in daughters bad economics. High cost of dowry, for instance, implies that daughters are a financial burden on families whereas sons draw dowry into the family. Daughters depart to join their husband's family after marriage and thus returns on any investments in daughters are unlikely to be reaped by their parents (Das Gupta et al., 2003; Dyson & Moore, 1983; Miller, 1985; Oldenburg, 1992; Rahman & Rao, 2004). Further, because of lack of institutions for elderly care in these countries, sons are considered the primary support in old age and therefore investments in sons have economic payoffs in old age (Chung & Gupta, 2007).

To the extent that economic factors are its primary cause, we expect to find little or no gender bias in parental investments in families of East and South Asian origin in the U.S. where labor market prospects for women are significantly better, where nearly universal Social Security benefits weaken dependence on sons for old age economic support, and where East and South Asian immigrants live in much improved economic conditions. On the other hand, if gender bias

[3] Studies of gender discrimination in China and India find that improved earnings and employment opportunities for women are linked to decreased female child mortality (Ram, 1984; Rosenzweig & Schultz, 1982), increased investments in education of girls (Jensen, 2010; Qian, 2008), and improvement in girls' nutrition (Jensen, 2010).

is rooted in culture, we expect parental investment in East and South Asian households to reflect son preference or greater son preference compared to other households.

A common assumption in the studies on the prevalence of son preference in allocation of family resources is that boys and girls live in families with similar characteristics. This assumption is untenable given previous research that has found prevalence of sex selection in East and South Asian families in Canada, South Africa and the U.S. Further, if fertility is driven by the desire to have a certain number of boys, as has been documented in East and South Asian countries, girls will end up in families with more children and therefore fewer resources per child. The simple difference in allocation of resources could be due to heterogeneity between families with sons versus those with daughters, and may not necessarily be an indicator of gender discrimination.

We examine whether gender differences in parental investments are the result of parents' differential treatment of girls and boys and not family heterogeneity by investigating differences in parental investments within families. We apply models with family fixed effects and control for birth order and birth spacing. Because quantity and quality of time with children is likely to differ by the age of the child, we do separate analyses for children by age and estimate within family differences in investments between sons and daughters aged 0-2, aged 0-5 and aged 6-17. Family fixed effects account for sex selection and other differences between families, e.g., family size, that may cause differences in time investments on children and may be correlated with the gender of the child.

A limitation of fixed effects models is that gender will pick up other differences between boys and girls within families (Behrman, 1997; Datar, Kilburn, and Loughran, 2010). We address this limitation in two ways. First, we use U.S. natives or immigrants from non-Asian

countries as comparison groups to investigate if there is a pattern in parental investments that is similar across parents from various regions of origin. If the gendered pattern of investment in children is similar across families of different regions of origin that would be an indicator that there may be some biological or emotional differences across genders that require parents to invest more time with children of a certain sex or that gender discrimination is not specific to East and South Asian cultures.

Second, following Barcellos, Carvalho, and Lleras-Muney (2014), we examine gender discrimination in parental investments in children aged 0 to 2 years. This specification does not rely on family fixed effects but rather assumes that the parents of children aged 0-2 will not yet have had more children in response to the gender of their youngest children.

In supplementary analyses, we investigate if having a son influences the division of household work between parents. Specifically, we study whether presence of a son aged 0-2 changes the time parents (mother or father) spend on household chores and childcare. This analysis is also restricted to families with at least 1 child less than 2.

We use data from the American Time Use Survey (ATUS) from 2002-2012. A unique feature of these data is that they provide detailed information on how much time in a given day a parent spent with each child, how the time was spent, and who else was present during each activity. In our child-level analysis, we compare the total time and quality time that boys and girls receive from one of their parents. A challenge to studying gender discrimination in allocation of family resources is that researchers often have to rely on household-level data to estimate individual-level allocation for which data are often not available (Kingdon, 2005). The advantage of using ATUS data is that we can study parental time investments made to each child in the family separately.

Our results show that mothers of East and South Asian origin spend 39 more minutes of total time and 30 more minutes of quality time per day with their young sons (aged 0-5) compared to their young daughters while fathers of East and South Asian origin are gender neutral in their time investments in young children. In contrast, mothers in the other ethnic origin categories are gender neutral in their time investments in young children. Fathers of European origin are also gender neutral in their allocation of time to young children while U.S. native fathers spend 15 more minutes of total time and six more minutes of quality time per day with sons compared to daughters. Latin American fathers on the other hand spend seven more minutes of quality time per day with daughters compared to sons. With school-age children, parents across ethnic origins specialize along gender lines: mothers spend more time with daughters while fathers spend more time with sons. Further, we find no evidence that East and South Asian mothers' preference for young sons versus daughters varies by mothers' generation and, among first-generation families, by mothers' years in the US.

Empirical Evidence on Gender Bias in Parental Investments in Children

Earlier research on gender bias in parental investment has centered on developing countries particularly in East and South Asia where girls have higher mortality rates than boys while the mortality gap is non-existent or reversed in other countries with comparable or even lower economic prosperity and higher poverty (El-Badry, 1969; Guilmoto, 2009; Sen, 1990; UN, 2011). Compared to boys, girls in East and South Asia receive fewer health inputs including less prenatal care (Bharadwaj & Lakdawala, 2013), less medical treatment when ill (Chen, Huq, & D'Souza, 1981; Khanna, Kumar, Vaghela, Sreenivas, & Puliyel, 2003), and poorer nutrition (including shorter duration of breastfeeding) (Barcellos, Carvalho, & Lleras-Muney, 2014;

Deaton, 2008; Haddad, Peña, Nishida, Quisumbing, & Slack, 1996; Marcoux, 2002), especially in families with several daughters (Das Gupta, 1987; Pande, 2003) which may, at least in part, explain the gender mortality gap.[4]

Research on another human capital investment, education, points to a pro-male bias in East Asia, South Asia, Middle East, North Africa, Sub-Saharan Africa but not in Latin America or Southeast Asia (Bauer, Wang, Riley, & Zhao, 1992; Dancer & Rammohan, 2007; Dayioğlu, Kirdar, & Tansel, 2009; Grant & Behrman, 2010; Kingdon, 2005; Lancaster, Maitra, & Ray, 2008; Li & Tsang, 2003; Ota & Moffatt, 2007). Mishra, Roy and Retherford (2004) argue that presence and extent of gender discrimination largely depends on the birth order of the index child and the sex composition of older living siblings. They find that discrimination against girls is most visible in families with no living sons, particularly at birth orders 3 and 4+. The lack of evidence of discrimination against girls in other families could be on account of gender selection or heterogeneity in families with boys versus girls.

Two papers have investigated presence of gender bias in parental time with children in developing countries. Barcellos, Carvalho, and Lleras-Muney (2014) examine gender bias using the Indian and South African Time Use Surveys and find that boys receive more childcare than girls in India but find no gender differences in South Africa. They explicitly assume absence of sex-selective abortion or infanticide, which is untenable given the extensive prevalence of sex selective abortion and reports of infanticide across India. Brown (2006) examines if parents spend more time helping boys versus girls on homework in rural China and finds no gender

[4] Female infanticide— the starkest manifestation of parental bias— has also been observed in parts of East and South Asia but it is often difficult to establish its prevalence (George, Abel, & Miller, 1992; Miller, 1987).

differences. However, Brown's (2006) analysis does not account for differences between boys' and girls' families.

In recent years, researchers have turned attention to gender bias in parental investments in western countries. Studies based on U.S. data have two primary findings. First, fathers invest more time in sons than daughters and mothers invest more time in daughters than sons (Lundberg, Pabilonia, & Ward-Batts, 2007; Mammen, 2011; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). Second, time investment in children varies by birth order: parents spend more time on first-born children than second-born children (Price, 2008).

In the U.S., researchers have also investigated how son preference affects parental behaviors, including fertility, marital status and work. Empirical evidence shows that first-born daughters have more siblings than first-born sons (Dahl & Moretti, 2008; Lundberg, 2005) and fathers work more hours and earn more after the birth of a son, which likely influences resources available for investments in children (Lundberg & Rose, 2002).[5] The last finding has also been replicated in German data (Choi, Joesch, & Lundberg, 2008). Further, women in the U.S. with first-born daughters are less likely to be married and if married more likely to get divorced compared to those with first-born sons (Dahl & Moretti, 2008; Lundberg, 2005). These studies thus show that boys and girls grow up under different family conditions. Thus studies of parental investment in children that disregard family heterogeneity are likely to arrive at biased conclusions.

A second category of research has examined differences in children's own time use by

[5] Pabilonia & Ward-Batts (2007) find that Asian immigrants to the U.S. work less, compared to whites, after the birth of a son versus that of a daughter, and they attribute it to decreased specialization within Asian families after the birth of a son. Gangadharan & Maitra (2003) find that couples of Indian descent in South Africa wait longer to have another child after the birth of a son which is not the case for couples from other ethnic backgrounds.

gender. A majority of these studies have also focused on developing countries. Larson and Verma (1999) review this large literature and conclude that in most developing country settings, boys have more free time than girls. More recent studies find corroborating evidence in India (Motiram & Osberg, 2010), Malawi (Nankhuni, 2004), and in Tanzania, Uganda, South Africa, and Kenya (Kes & Swaminathan, 2006). Larson and Verma's review also finds that in almost all regions of the world, and in both developed and developing countries, girls spend more time in household labor than boys except in the United States where they find no gender differences. These studies too assume that boys and girls live in families with similar characteristics, an assumption that is rejected by previous research. When families prefer sons and follow male-biased stopping rules in childbearing, girls will end up in larger households than boys and receive less parental investments even when parents themselves do not discriminate within the household (Yamaguchi, 1989). We control for such fertility preferences and other observed and unobserved family characteristics using a number of strategies including models with family fixed effects, models that restrict samples to families with first-born children aged 0-2, and a comparison group approach comparing families of East and South Asian origin with those of other ethnic groups.

Data

Our study uses American Time Use Survey (ATUS) data for 2003-2012. ATUS, conducted annually, is a nationally representative survey of how people spend their time. ATUS surveyed about 136,000 households from 2003 to 2012. From each eligible household one person aged 15 years or more is randomly selected to complete the survey. Respondents are asked to recall all their activities in the 24-hour period starting at 4 am the previous day, the location of each activity and who else was present during the activity.

ATUS collects demographic information of the respondent and each household member. We refer to the respondents' co-resident children and grandchildren under the age of 18 as children.[6] We exclude from our sample 82,995 respondents who do not have children. Because prevalence of single parent households may differ across ethnic groups, we further restrict the sample to two parent families.[7] We use information on the respondent's, respondent's mother's and respondent's father's country of birth to determine country of origin. The focus of our study is respondents who were born, or have a parent born, in East and South Asia. For comparison we study three other groups: U.S.-born respondents who have U.S.-born parents (henceforth referred to as U.S. natives),[8] first and second generation respondents from Latin America; and first and second generation respondents from Europe, Canada, Australia, and Pacific. For convenience, throughout this paper, we use the term Europeans to describe first and second generation immigrants from Europe, Canada, Australia, and Pacific. Appendix Table 1 presents the composition of our East and South Asian sample by country of origin. Eighty percent of the respondents originating from East and South Asia are first- and second-generation immigrants from five countries: China, India, Japan, Pakistan, and South Korea.

Because ATUS collects data from only one person in the household, we observe children's time use as they interact with the respondent. We therefore have complete information on the time that a respondent parent and his or her children spend together. We create two child-level outcomes by summing for each child (1) total time that the child and parent spend together,

[6] About 4% of the respondents in our sample are grandparents; all others are parents. For convenience we use the term parents to describe both.

[7] In our data only 7% of East and South Asian families are headed by single parents compared to 21-23% single parent headed families for the other three groups. In supplementary analysis, we repeated our analysis including all family types and the results were similar and we discuss some of the results in footnote 16.

[8] Restricting the analysis to U.S. non-Hispanic Whites leaves the results largely unchanged.

and, (2) following Price (2008), quality time that the child spent with the parent, which is time spent on activities where the child is either the focus of the activity or is interacting considerably with the parent.[9] Further, we group quality time between parent and child into six categories, namely time spent in physical care of, or looking after, the child; time spent reading to/with the child; time spent playing with the child, including playing sports or doing arts and crafts; time spent talking/listening to the child; time spent in doing homework; and time spent eating together with the child, and we study prevalence of gender discrimination with regard to each activity.

Appendix Table 2 presents descriptive demographic data on male and female children in East and South Asian families and the other three comparison groups and shows that these families are similar on many important characteristics such as child's age, number of children, whether the respondent (i.e., parent) is female and parent's age. In fact, sons and daughters in our East and South Asian sample are similar on all characteristics except one: the probability that there is a subsequent birth with an interval of two years is statistically higher for daughters than sons. There is no statistical difference in the demographic characteristics of sons and daughters in U.S. native families whereas Latin American and European sons and daughters are significantly different on several characteristics. Latin American daughters have higher birth orders, are more likely to have had a sibling born after them, and are in larger households than Latin American sons whereas European daughters have lower birth orders, and are more likely to be the first-born than European sons. To ensure that our analysis on parental time-investments in children is not influenced by these differences, we run models with and without these controls.

[9] Following Price (2008), quality time are activities coded by ATUS as "physical care for children", "reading to/with children", "playing with children, not sports", "arts and crafts with children", "playing sports with children", "talking with/listening to children", "looking after children", "homework", "home schooling of children", "eating and drinking", "attending performing arts", "attending museums", and "participation in religious practices"

We also examine the influence of children's gender composition on parents' time allocation towards childcare and household chores. Time parents spend on childcare is the sum of time spent caring for and helping household children and on activities related to household children's education and health. Time on household chores is the sum of time spent on activities coded by ATUS as "household activities", "household services", and "grocery shopping".

Empirical strategy

We first study the differences in parental time that sons and daughters receive in families of East and South Asian origin living in the U.S. Equation (1) describes the model specification estimated on a sample of East and South Asian families drawn from the American Time Use Survey:

(1) $T_{ij} = \alpha_0 * ChildMale * Mother + \alpha_1 * ChildMale * Father + \alpha_2 * Mother + XB + u_{ij}$

where T_{ij} is the total time that a parent from family j spends with child i and is a function of the child's gender (a dummy variable indicating the child is male), a dummy variable indicating that the observation is from a mother's time diary (denoted by Mother), a dummy variable indicating that the observation is from a father's time diary (denoted by Father), child characteristics (denoted by X) namely child age (a dummy variable for each year of age), birth order (a set of dummy variables indicating first, second, or higher birth order), previous birth spacing (a set of dummy variables indicating child was born 1, 2, 3, 4, or 5 or more years after previous child, or no previous child), subsequent birth spacing (a set of dummy variables indicating the next child was born 1, 2, 3, 4, or 5 or more years after index child, or no subsequent child), and u_{ij} is the error term.

The coefficients of interest are: α_0 that measures the difference in average time that mothers spend with their sons versus daughters and α_1 that measures the difference in average

time fathers spend with their sons versus daughters. These two coefficients will yield unbiased estimates of son preference in parental time investments in children under two assumptions. The first assumption is that the gender of the child is randomly determined and, the second, that there is no difference between families with more sons and those with more daughters. Prevalence of sex selection and male-biased fertility stopping rules in East and South Asian families make both assumptions highly restrictive. One way to address these issues is to compare parental time investments in sons versus daughters *within* families. The model specification for this analysis is given by equation (2):

(2) $T_{ij} = \tilde{\alpha}_0 * ChildMale * Mother + \tilde{\alpha}_1 * ChildMale * Father + X\tilde{B} + \pi_j + e_{ij}$

which has one additional term (compared to equation (1)): π_j denotes a complete set of family fixed effects that capture family heterogeneity. We have differentiated the parameters in this equation from those in equation (1) using the symbol ~. Because ATUS provides time diaries for only one parent per family, the Mother dummy variable drops out from the model that includes family fixed effects.

We are interested in studying both the overall quantity and quality of time that parents spend with their children. We begin the analysis with two outcomes: total time that the respondent (parent) spent with the child and quality time received by the child, which is measured as time spent on activities where the child is the focus of the activity or activities with considerable parent-child interaction such as helping the child in her homework, reading to the child, eating together, etc. We also estimate gender discrimination in six major types of quality time activities with children as described earlier. We run our analyses separately by child age: children aged 0-5 and children aged 6-17 years.

The fixed effects approach described in equation (2) has some potential shortcomings.

First, the approach imposes restrictions on the sample such that all-boys and all-girls families are excluded from the estimation of son preference. Second, the fixed effects approach may lead to a double counting of son preference if parents have a fixed amount of parental time that they reallocate from daughters to sons. This could occur if parents reinforce or compensate for differences in endowments across children as described by Behrman (1997). Third, in fixed effects models gender is likely to pick up other differences across boys and girls that will induce parents to invest differently.

We use two approaches to address these concerns and examine the robustness of our results. First, we estimate equations (1) and (2) on samples of U.S. natives or immigrants from non-Asian countries. Specifically, we estimate equations (1) and (2) on three other samples: U.S. native families, families of European origin and families of Latin American origin. If the gendered pattern of investment in children is similar across families from different regions of origin that may suggest presence of biological or emotional differences across genders that require differential parental investments. Second, following Barcellos, Carvalho, and Lleras-Muney (2014), we estimate equation (1) on (i) children aged 0-2 years and (ii) first born children aged 0-2 years. The intuition is that sex at conception is randomly assigned. If parents do not perform sex-selective abortion, then boys and girls will be born into families with similar characteristics. Parents then have an opportunity to respond to the sex of the newborn by having more children or concluding their child bearing. However, parents need time after the birth of a child before having additional children and thus families with very young (0-2 years) boys will be similar to those with very young girls, especially the first borns.

Next, we investigate if presence of a young son affects the time parents allocate on childcare and household chores. Ideally, we would like to study if presence of a son affected the

time that mothers allocated on household chores and childcare relative to fathers. However, in our data we only observe the time diaries of a single parent. Therefore, we study if presence of a young son aged 0-2 years affects (i) the average time that mothers spend on childcare and household chores, (ii) the average time that fathers spend on childcare and household chores. We restrict our analysis to families with children aged 0-2 to address concerns that differences in parental time allocation between girls' families and boys' families might be due to differences in family characteristics. This analysis is conducted with parent level data and controls for parent and household characteristics, namely: the respondent's gender (mother or father), education (dummy variables representing less than high school, high school, some college or associate degree, and bachelor's degree or higher), and age (dummy variables representing ages 16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, and 66+), number of adults, number of sons, number of daughters, and number of children aged 0-5.

Results

Figures 1 and 2 present the locally weighted scatterplot smoothing plots of total time and quality time mothers spent with children by child age.[10] Figure 1 shows a distinct son preference in mother's total time in East and South Asian families when the children are young, which erodes over time as children age and turns into a modest daughter advantage for school-age children. In contrast, son preference among young children is negligible among U.S. mothers and European mothers and negative among Latin American mothers, and there is evidence of daughter preference for school-age children for all the three groups. Point estimates indicate that East and South Asian mothers spend more time with their younger sons (<2 years) than do other

[10] Appendix Table 3 presents the average total time per day that parents (fathers, mothers) spend with their sons versus daughters.

ethnic groups, and less time with younger daughters than other ethnic groups. The trajectories of total time by age with sons and daughters are curvilinear for East and South Asian mothers and approximately linear for other groups. East and south Asian mothers allocate more quality time on young sons than daughters, but this difference disappears as children age (Figure 2). The quality time that mothers from other ethnic groups spend with their children appears to be gender neutral.

Figures 3 and 4 present similar graphs on father's time with children by age. There is son preference in East and South Asian and U.S. native fathers' total time allocation, but not in quality time allocation. Latin American fathers appear to be gender neutral over most of their children's childhoods and European fathers exhibit a daughter preference with young children which turns into a son preference as children begin school in allocation of total time and diminishes in allocation of quality time.

Tables 1 and 2 present regression results from the analyses outlined in equations (1) and (2). Because the quantity and quality of investments in children vary by child age, we do the analysis separately for children aged 0-5 (Table 1) and children aged 6-17 (Table 2). Model 1 controls for age (a dummy variable for each year of age) and the gender of the respondent (mother or father). Models 2 and 3 add controls for birth order (dummy variables for first, second, or higher birth order), previous birth spacing (dummy variables for 1, 2, 3, 4, 5 or more years, or no previous child) and subsequent birth spacing (dummy variables for 1, 2, 3, 4, 5 or more years, or no subsequent child), and Model 3 adds family fixed effects. The coefficient on the interaction term between male child and mother (father) estimates the average additional time that a mother (father) spends with sons compared to daughters.

Estimates in Panel 1, Model 1 show that parents in East and South Asian families spend statistically the same amount of total time with young (aged 0-5) sons and daughters. Estimates remain the same in Model 2 that includes controls for birth order and birth spacing. Models 1 and 2 estimate the average additional time parents of East and South Asian origin spend with sons than daughters. One source of bias in these estimates is heterogeneity between families that are likely to have sons or more sons than daughters. We address the issue of family heterogeneity in Model 3 that includes family fixed effects. This model thus compares mothers' (or fathers') time between sons and daughters within the same family. Estimates in Model 3 show that East and South Asian mothers spend 39 more minutes with young sons than with young daughters; fathers, on the other hand, divide their time equally between sons and daughters.

We also find son preference in quality time that East and South Asian mothers spend with their children. Models 1-3 suggest that East and South Asian mothers spend 30 to 34 more minutes of quality time with their young sons than with their young daughters, but fathers spend statistically the same amount of quality time with sons and daughters.

Could it be that the son preference we observe in mothers' time with young children is because young boys in general have greater physiological and emotional needs than young girls? One way to answer this question is to study the pattern of parental time investments in other ethnic groups that are known to exhibit lower discrimination between sons and daughters. If the pattern of time investments are similar for these groups that would suggest that son preference is not unique to East and South Asian families and that there may be factors other than daughter discrimination that compel mothers to spend more time with sons than daughters.

Panels 2 to 4 in Table 1 present results from this analysis. These estimates show that mothers and fathers of European origin spend the same amount of total and quality time with

their young sons and daughters. Similar evidence of no gender preference is observed in the time allocation by Latin American and U.S. native mothers. Fathers in American families, however, spend 15 additional minutes of total time and six additional minutes of quality time with sons than with daughters and fathers in Latin American families spend the same total time with sons and daughters but spend seven more minutes of quality time with daughters than with sons.[11]

In Table 2, we examine whether there is any pattern of gender bias in parental time with school-age children (aged 6-17). Estimates from our preferred models (fixed effects models) show that East and South Asian fathers spend 23 more minutes with sons than with daughters and East and South Asian mothers spend 42 additional minutes with daughters than sons. We find similar evidence of gender specialization in total time allocation on school-age children in families in the other three ethnic groups. There is evidence of gender-specialization in quality time that parents spend with school-age children in families of Latin American and U.S. native origin, but the point estimates are small with mothers spending three to five more minutes of quality time with daughters than sons and fathers spending four more minutes of quality time with sons than daughters. In East and South Asian families, on the other hand, parental quality time with sons and daughters is statistically the same. The sign and size of the point estimates are similar to those observed for other ethnic groups. It is possible that the sample size for East and south Asian families is too small to detect small size effects.

As mentioned, a concern with fixed effects models is that gender will pick up other differences between boys and girls within families (Behrman, 1997; Datar, Kilburn, and Loughran, 2010). Besides, any analysis with family fixed effects models is restricted to families

[11] We also conducted the analysis presented in Table 1 on all families i.e., including single-parent families, and obtained similar results.

with at least a son and a daughter within the age category. To address these concerns, as a specification check, following Barcellos, Carvalho, and Lleras-Muney (2014), we examine son preference among families with very young (aged 0-2) children and first born very young children. This approach assumes that families with very young sons are similar to families with very young daughters. In Table 3, we report results using regression models similar to models 1-2 (models without family fixed effects) in Table 1 for total time with children and model 2 for quality time and four different categories of quality time: physical care, playing, eating/drinking, and other activities.[12] Estimates show that East and South Asian mothers spend 63 to 72 more minutes of total time and 52 more minutes of quality time per day with their very young sons compared to their daughters. East and South Asian fathers spend 30 to 39 more minutes of total time and 11 more minutes of quality time per day with their very young sons compared to their daughters but the estimates are not statistically significant.

We believe that parents are less likely to exercise sex-selective abortion with their first born children. Therefore, in Panel 2, we further restrict the sample to children aged 0-2, who are first born. Because of the sample restriction the estimates are less precise. However, this analysis also suggests that East and South Asian mothers spend an additional 55 minutes of quality time with their first-born sons than with their first-born daughters.

In the last four columns of Table 3, we examine whether there are differences in parental time investments on specific quality time activities with very young children. East and South Asian mothers spend about 25 more minutes of physical care and 29 more minutes of play-time per day with their very young sons compared to very young daughters. On the other hand, East

[12] We also estimated model 1 for quality time and other outcomes. The results were similar to those reported using model 2. For brevity, we do not present those results but they can be provided upon request.

and South Asian fathers spend statistically the same amount of time on quality activities with very young sons and daughters.

The dependent variable in Table 4 is one-on-one quality time that parents spent with only one of their child. The estimates observed for one-on-one quality time are similar to those for quality time presented in Tables 1 and 2 indicating that our results are robust to an alternative specification of parental time investment.

In Appendix Tables 4 and 5, we examine whether there are differences in parental time investments on specific quality time activities. East and South Asian mothers spend 15 more minutes on the physical care (statistically significant), eight more minutes in play (statistically insignificant), and five more minutes in eating food (statistically significant) with young sons than with similar aged daughters. Estimates from a similar analysis for school-age children show little evidence of differences in time spent on various quality time activities with sons and daughters in East and South Asian families.

We also investigate if son-preference in East and South Asian mother's time that we observed in Table 1 differed by whether the mother is a first- or second-generation immigrant in the US. The results of this analysis, presented in Table 5, suggest that there are no statistically significant differences in estimates of son preference between first- and second-generation parents of East and South Asian origin. The point estimates of the interaction coefficient between second-generation mothers and male child is larger than the coefficient of the interaction between first-generation mothers and male child (Models 1 and 2). In a separate analysis, conducted on a sample of children of first-generation East and South Asian parents, we find that years since immigration in the US has not effect on son preference among East and South Asian families (Appendix Table 6).

Next, we investigate if presence of a young son affects the time parents allocate in childcare and household chores (Table 6). We restrict our analysis to families with children aged 0-2 to address concerns that differences in parental time allocation between girls' families and boys' families might be due to differences in family characteristics. Each column presents the results of a unique OLS regression using parent-level data. Model 1 provides unadjusted differences in time spent by respondents from different ethnic origins and Model 2 adds the following controls for individual and household characteristics: respondent's age and education, number of adults in the family, number of sons, number of daughters, and number of children aged 0-5. Model 3 adds a control for whether mother is unemployed. The results from the three models are similar.

In East and South Asian families, mothers with a young son aged 0-2 allocate 41 additional minutes on childcare per day than mothers with only young daughters; they also spend 17 fewer minutes in household chores, but the latter is statistically insignificant (Model 3).[13] There is no statistical evidence that East and South Asian fathers' participation in household chores or childcare is influenced by the gender of their young child. Interestingly, in native U.S. families, both mothers and fathers allocate between 10 to 13 additional minutes in childcare if they have a young son than a young daughter, but there is no evidence of such gender preference in other ethnic groups.

Conclusion

In this paper, we investigate if son preference or discrimination against daughters persists in families of East and South Asian origin that have migrated to the U.S. by studying the quantity

[13] We also conducted this analysis restricting samples to families with first born children aged 0-2 years. The point estimates were similar but mostly statistically insignificant.

and quality of parental time investment in children, a critical, yet least studied, developmental input that can impact abilities and outcomes in later life. Our analysis has four main findings. One, East and South Asian mothers spend 39 more minutes per day of total time and 30 more minutes of quality time with their young (aged 0-5 years) sons than with their young daughters. There is no corresponding evidence of gender discrimination in time that mothers of other ethnic groups spend with their young children. We also find that fathers in third and higher generation American families spend 15 minutes of additional total time and 6 minutes of additional quality time with their young sons than daughters and Latin American fathers spend seven minutes of additional quality time with their young daughters. In analysis restricted to families with a first born child aged 0-2, we find that East and South Asian mothers spend about 55 minutes of additional quality time with sons aged 0-2 than with similarly aged daughters.

Two, our analysis suggests that there is gender specialization in parental time between children aged 6-17 in that fathers spend more time with sons than daughters and mothers spend more time with daughters than sons across various ethnic groups. We also find evidence of gender specialization in quality time that parents spend with their children, but the point estimates are small for all groups and statistically insignificant for East and South Asian families.

Three, activity specific analyses suggest that East and South Asian mothers with children aged 0-2 spend 25 additional minutes on the physical care and 29 minutes in playing with their very young sons (aged 0-2) than with similarly aged daughters. There is also evidence of East and South Asian mothers exercising gender discrimination in allocation of time on specific activity with young children aged 0-5 years, but most of the estimates are statistically insignificant.

Four, we find no evidence that East and South Asian mother's additional time allocation for young sons versus daughters varies by mother's generation, and among first-generation families, we find no evidence of a decline in preference for young sons as mother's years in the U.S. increase.

In the final analysis, we investigate if presence of a son affects the time parents allocate in childcare and household chores in families with children aged 0-2 and find that mothers in East and South Asian families spend 41 additional minutes in childcare and 17 fewer minutes (statistically insignificant) in household chores if they have a young son than a young daughter.

Our research thus highlights that son preference in parental investments in East and South Asian families persists after immigration to the U.S. We find no evidence that the gender discrimination in mothers' investments in young children decline across generations. These findings thus suggest that norms of son preference in East and South Asian cultures continue to affect parenting behavior even after migration.

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Table 1 Estimates of Son Preference in Parental Time with Children Aged 0 – 5 Years

	Total time			Quality time		
	(1)	(2)	(3)	(1)	(2)	(3)
Panel 1: East & South Asian Origin						
Male child*Father	10.0	7.9	-9.4	0.4	-3.4	-5.6
	(23.7)	(23.7)	(16.6)	(10.5)	(10.5)	(9.1)
Male child *Mother	28.6	29.5	39.1*	31.7**	33.5**	30.1**
	(18.5)	(18.8)	(19.7)	(12.1)	(12.1)	(10.6)
Mean dependent variable (in minutes)	417	417	392.8	186.3	186.3	204.5
N	1,030	1,030	237	1,030	1,030	237
Panel 2: U.S. Native (3rd or higher generation)						
Male child*Father	14.0**	13.9**	15.0**	9.5**	9.5**	5.9**
	(5.0)	(5.0)	(3.3)	(2.5)	(2.5)	(1.6)
Male child *Mother	-6.8	-6.9	-5.6	-1.2	-1.5	0.3
	(4.3)	(4.3)	(3.7)	(2.5)	(2.4)	(1.8)
Mean dependent variable (in minutes)	393.6	393.6	406.8	155.1	155.1	171.9
N	21,086	21,086	6,051	21,086	21,086	6,051
Panel 3: Latin American Origin						
Male child*Father	7.5	6.6	-9.7	4.1	3.2	-6.7†
	(11.6)	(11.7)	(6.4)	(4.7)	(4.7)	(4.0)
Male child *Mother	-19.2†	-20.5*	-11.1	-3.9	-4.8	1.2
	(10.0)	(10.0)	(7.5)	(4.9)	(4.8)	(3.4)
Mean dependent variable (in minutes)	431.5	431.5	435.3	125.9	125.9	138.1
N	4,212	4,212	1,165	4,212	4,212	1,165
Panel 4: European Origin						
Male child*Father	-26.4	-27.4	2.2	-16.5	-12.8	-1.7
	(19.3)	(19.3)	(11.8)	(10.1)	(10.1)	(4.6)
Male child *Mother	-14.1	-16.3	4.4	3.1	1.2	3.5
	(16.5)	(16.7)	(12.1)	(10.2)	(10.1)	(4.8)
Mean dependent variable (in minutes)	415.6	415.6	422.6	183.5	183.5	195.7
N	1,472	1,472	444	1,472	1,472	444
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	No	Yes	Yes	No	Yes	Yes
Previous and subsequent birth interval	No	Yes	Yes	No	Yes	Yes
Family Fixed Effects	No	No	Yes	No	No	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in the top two rows of each column in a Panel are based on a separate OLS regression with minutes of total time with the child per day (or quality time per day) as the dependent variable. In addition to the controls mentioned above, Models 1 and 2 also control for the gender of the parent. Robust standard errors clustered on family are in parentheses. **p<0.01, *p<0.05, †p<0.1.

Table 2 Estimates of Son-Preference in Parental Time with Children Aged 6 – 17 Years

	Total time			Quality time		
	(1)	(2)	(3)	(1)	(2)	(3)
Panel 1: East & South Asian Origin						
Male child*Father	18.2	18.5	23.0*	8.6	8.9	3.0
	(18.1)	(17.8)	(10.8)	(6.5)	(6.5)	(3.2)
Male child *Mother	-19.1	-20.9	-41.7**	8.5	7.4	-3.6
	(15.8)	(15.8)	(10.7)	(6.9)	(6.8)	(3.0)
Mean dependent variable (in minutes)	306.8	306.8	299	104.2	104.2	95.64
N	1,324	1,324	507	1,324	1,324	507
Panel 2: U.S. Native (3rd or higher generation)						
Male child*Father	25.4**	25.3**	26.7**	5.2**	5.2**	3.5**
	(3.5)	(3.5)	(2.5)	(1.1)	(1.1)	(0.6)
Male child *Mother	-32.9**	-33.1**	-27.5**	-4.6**	-4.7**	-2.6**
	(3.2)	(3.2)	(2.7)	(1.2)	(1.2)	(0.7)
Mean dependent variable (in minutes)	282.7	282.7	285.1	77	77	77.22
N	39,649	39,649	16,763	39,649	39,649	16,763
Panel 3: Latin American Origin						
Male child*Father	1.2	1.4	11.2*	1.0	1.5	4.0**
	(9.1)	(9.1)	(4.8)	(2.7)	(2.7)	(1.5)
Male child *Mother	-38.0**	-38.0**	-31.5**	-6.6*	-6.5*	-4.6**
	(8.3)	(8.3)	(5.4)	(2.8)	(2.8)	(1.6)
Mean dependent variable (in minutes)	341.8	341.8	337.8	81.34	81.34	82.15
N	6,690	6,690	2,925	6,690	6,690	2,925
Panel 4: European Origin						
Male child*Father	33.1*	35.2*	39.7**	4.8	6.2	5.5*
	(13.6)	(13.7)	(10.5)	(4.9)	(4.9)	(2.7)
Male child *Mother	-17.6	-17.8	-19.8*	2.1	2.3	-3.8
	(11.9)	(11.9)	(9.7)	(4.9)	(4.9)	(2.6)
Mean dependent variable (in minutes)	300.9	300.9	299.5	91.12	91.12	86.37
N	2,604	2,604	1,071	2,604	2,604	1,071
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	No	Yes	Yes	No	Yes	Yes
Previous and subsequent birth interval	No	Yes	Yes	No	Yes	Yes
Family Fixed Effects	No	No	Yes	No	No	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in the top two rows of each column in a Panel are based on a separate OLS regression with minutes of total time with the child per day (or quality time per day) as the dependent variable. In addition to the controls mentioned above, Models 1 and 2 also control for the gender of the parent. Robust standard errors clustered on family are in parentheses. **p<0.01, *p<0.05, †p<0.1.

Table 3 Robustness Check of Estimates of Son Preference in Parental Time with Children Aged 0 – 2 Years: Families of East and South Asian Origin

	Total time	Total time	Quality time	Time on Physical care	Time Playing	Time Eating and drinking	Time in Other activities
Panel 1: Children aged 0-2 years							
Male child*Father	29.9	38.8	10.7	0.2	4.1	5.3	0.9
	(33.6)	(33.6)	(16.9)	(6.5)	(10.8)	(6.9)	(3.0)
Male child *Mother	72.2**	63.2*	52.4**	24.6†	29.2**	3.8	-3.4
	(26.4)	(27.5)	(17.3)	(13.1)	(10.9)	(7.2)	(3.9)
Mean dependent variable (in minutes)	434.7	434.7	202.4	76.36	53.77	61.33	10.52
N	536	536	536	536	536	536	536
Panel 2: First-born children aged 0-2 years							
Male child*Father	78.1	82.8	31.7	9.0	21.3	1.6	-0.1
	(50.9)	(53.1)	(23.3)	(10.3)	(14.0)	(9.6)	(5.6)
Male child *Mother	59.6	50.1	54.6*	30.7	29.2†	-1.2	-4.0
	(40.3)	(40.4)	(26.0)	(20.5)	(17.0)	(10.4)	(4.9)
Mean dependent variable (in minutes)	458.8	458.8	203.6	74.38	58.51	60.99	9.764
N	258	258	258	258	258	258	258
Controls:							
Age	No	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	No	Yes	Yes	Yes	Yes	Yes	Yes
Previous and subsequent birth interval	No	Yes	Yes	Yes	Yes	Yes	Yes
Gender of parent	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes
Family Fixed Effects	No	No	No	No	No	No	No

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in the top two rows of each column in a Panel are based on a separate OLS regression with minutes of time spent on activity in header row as the dependent variable. Other activities are: reading, talking, listening, homework, museums, and religious activities. Household characteristics are: respondent's education and age, whether mother is unemployed, and number of adults, children, and children aged 0-5. Robust standard errors clustered on family are in parentheses. **p<0.01, *p<0.05, †p<0.1

Table 4 Estimates of Son Preference in One-on-one Quality Time with Children

	Children aged 0 - 5			Children aged 6 - 17		
	(1)	(2)	(3)	(1)	(2)	(3)
Panel 1: East & South Asian Origin						
Male child*Father	10.7	14.5*	-1.5	6.8†	4.2	0.7
	(8.0)	(7.1)	(9.1)	(3.7)	(3.3)	(2.7)
Male child *Mother	17.3	18.5†	27.2*	5.1	2.8	-3.0
	(11.3)	(9.6)	(10.6)	(4.5)	(3.8)	(3.0)
Mean dependent variable (in minutes)	75.33	75.33	26.88	22.32	22.32	6.90
N	1,030	1,030	237	1,324	1,324	507
Panel 2: U.S. Native (3rd or higher generation)						
Male child*Father	3.7*	4.4**	3.9**	2.4**	2.5**	2.0**
	(1.6)	(1.4)	(1.3)	(0.5)	(0.5)	(0.5)
Male child *Mother	2.2	2.0	0.5	-2.2**	-2.2**	-1.6**
	(1.9)	(1.6)	(1.7)	(0.6)	(0.5)	(0.5)
Mean dependent variable (in minutes)	48.23	48.23	15.52	14.43	14.43	6.78
N	21,086	21,086	6,051	39,649	39,649	16,763
Panel 3: Latin American Origin						
Male child*Father	2.9	2.5	-6.2	2.5*	1.2	2.7**
	(2.9)	(2.6)	(3.8)	(1.0)	(1.0)	(1.1)
Male child *Mother	1.7	-1.3	3.2	-0.3	-0.8	-1.2
	(3.4)	(3.0)	(3.2)	(1.2)	(1.1)	(1.0)
Mean dependent variable (in minutes)	33.18	33.18	11.79	9.40	9.40	3.60
N	4,212	4,212	1,165	6,690	6,690	2,925
Panel 4: European Origin						
Male child*Father	3.0	5.2	-2.5	-0.7	-0.8	3.5†
	(6.7)	(6.0)	(4.3)	(2.7)	(2.6)	(2.0)
Male child *Mother	4.6	6.4	5.7	-2.0	0.1	-2.4
	(7.5)	(6.6)	(5.3)	(2.6)	(2.4)	(1.9)
Mean dependent variable (in minutes)	56.61	56.61	18.01	18.00	18.00	8.00
N	1,472	1,472	444	2,604	2,604	1,071
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	No	Yes	Yes	No	Yes	Yes
Previous and subsequent birth interval	No	Yes	Yes	No	Yes	Yes
Family Fixed Effects	No	No	Yes	No	No	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in the top two rows of each column in a Panel are based on a separate OLS regression with minutes of quality time with the child per day where only one child was present (other adults or non-household children might have been present) as the dependent variable. In addition to the controls mentioned above, Models 1 and 2 also control for the gender of the parent. Robust standard errors clustered on family are in parentheses. **p<0.01, *p<0.05, †p<0.1.

Table 5 Comparing First and Second Generation East and South Asian immigrants' Son-Preference in Parental Time with Children Aged 0 – 5 Years

	Total time			Quality time		
	(1)	(2)	(3)	(1)	(2)	(3)
Mother	65.6	62.0		52.8	50.1	
	(65.2)	(66.9)		(34.2)	(33.3)	
1st generation parent	0.0	4.7		-3.9	-0.8	
	(51.8)	(52.3)		(23.9)	(23.6)	
Mother*1st generation parent	101.2	104.1		32.3	32.2	
	(69.6)	(70.4)		(36.6)	(35.5)	
Mother*1st generation parent*Male child	20.6	22.1	39.6†	25.3†	26.7*	30.2**
	(19.4)	(19.5)	(20.9)	(12.9)	(12.8)	(11.0)
Mother*2nd generation parent*Male child	107.8*	111.0*	34.5	78.5*	83.1*	28.4
	(53.9)	(55.0)	(34.1)	(34.6)	(34.6)	(29.9)
Father*1st generation parent*Male child	11.2	6.9	-8.0	-3.6	-7.5	-5.2
	(25.5)	(25.6)	(19.9)	(11.4)	(11.6)	(10.5)
Father*2nd generation parent*Male child	1.3	9.2	-15.1	26.7	22.2	-7.4
	(63.6)	(62.4)	(18.3)	(26.0)	(25.5)	(15.8)
Constant	328.2**	313.5**	364.8**	150.6**	175.3**	196.8**
	(50.3)	(69.2)	(35.4)	(23.5)	(35.1)	(24.1)
P-value For Test						
Coefficient of Mother*1st generation parent *Male child = Mother*2nd generation parent*Male child	*0.128*	*0.124*	*0.892*	*0.151*	*0.126*	*0.951*
Coefficient of Father*1st generation parent*Male child = Father*2nd generation parent*Male child	*0.885*	*0.973*	*0.788*	*0.285*	*0.289*	*0.903*
Mean dependent variable (in minutes)	417	417	392.8	186.3	186.3	204.5
N	1,030	1,030	237	1,030	1,030	237
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	No	Yes	Yes	No	Yes	Yes
Previous and subsequent birth interval	No	Yes	Yes	No	Yes	Yes
Family Fixed Effects	No	No	Yes	No	No	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in each column are based on a separate OLS regression with minutes of total time with the child per day (or quality time per day) as the dependent variable. Robust standard errors clustered on family are in parentheses. **p<0.01, *p<0.05, †p<0.1

Table 6 Gender Differences in Parents' Time Spent on Child-Care and Household Chores (Families with a child 0-2 years)

	Time on Caring for Children			Time on Household Chores		
	(1)	(2)	(3)	(1)	(2)	(3)
Panel 1: East & South Asian Origin						
At least 1 son 0-2yrs*Father	6.0	-20.9	-20.5	9.0	14.2	14.5
	(14.1)	(22.2)	(22.7)	(10.3)	(16.1)	(16.2)
At least 1 son 0-2yrs*Mother	70.2**	43.5†	41.0†	-12.8	-15.0	-16.9
	(19.5)	(24.7)	(23.9)	(18.0)	(21.3)	(20.9)
Mean dependent variable (in minutes)	155.3	155.3	155.3	124.3	124.3	124.3
N	486	486	486	486	486	486
Panel 2: U.S. Native (3rd or higher generation)						
At least 1 son 0-2yrs*Father	9.1*	10.8*	10.4*	3.5	4.1	3.7
	(3.8)	(4.6)	(4.6)	(4.0)	(4.8)	(4.9)
At least 1 son 0-2yrs*Mother	12.0**	12.9**	13.4**	-4.3	-3.3	-2.9
	(4.1)	(4.9)	(4.8)	(3.9)	(4.7)	(4.6)
Mean dependent variable (in minutes)	144.0	144.0	144.0	129.0	129.0	129.0
N	9,005	9,005	9,005	9,005	9,005	9,005
Panel 3: Latin American Origin						
At least 1 son 0-2yrs*Father	3.6	5.5	6.5	-1.8	-11.0	-10.1
	(6.6)	(7.9)	(8.1)	(7.9)	(10.0)	(10.1)
At least 1 son 0-2yrs*Mother	6.6	5.2	6.2	-3.7	-10.3	-9.5
	(8.2)	(9.0)	(8.9)	(9.6)	(11.6)	(11.5)
Mean dependent variable (in minutes)	97.68	97.68	97.68	148.9	148.9	148.9
N	1,812	1,812	1,812	1,812	1,812	1,812
Panel 4: European Origin						
At least 1 son 0-2yrs*Father	-2.9	-22.4	-21.7	-14.6	-19.3	-18.6
	(14.0)	(18.6)	(18.6)	(13.6)	(15.8)	(15.9)
At least 1 son 0-2yrs*Mother	34.7†	13.8	14.4	3.1	2.9	3.5
	(17.7)	(18.7)	(18.6)	(14.4)	(17.2)	(17.0)
Mean dependent variable (in minutes)	168.0	168.0	168.0	124.1	124.1	124.1
N	618	618	618	618	618	618
Controls:						
Parent's gender	Yes	Yes	Yes	Yes	Yes	Yes
Parent and household characteristics	No	Yes	Yes	No	Yes	Yes
Mother is employed	No	No	Yes	No	No	Yes

Note: Figures in each column are based on a separate regression with time spent on household chores or time spent on caring for children as the dependent variable. Parent characteristics are respondent's education (dummy variables representing less than high school, high school, some college or associate degree, and bachelor's degree or higher) and age (dummy variables representing ages 16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, and 66+). Household characteristics are: number of adults, number of sons, number of daughters, and number of children aged 0-5. Time is reported in minutes per day. Robust standard errors are in parentheses.
**p<0.01, *p<0.05, †p<0.1.

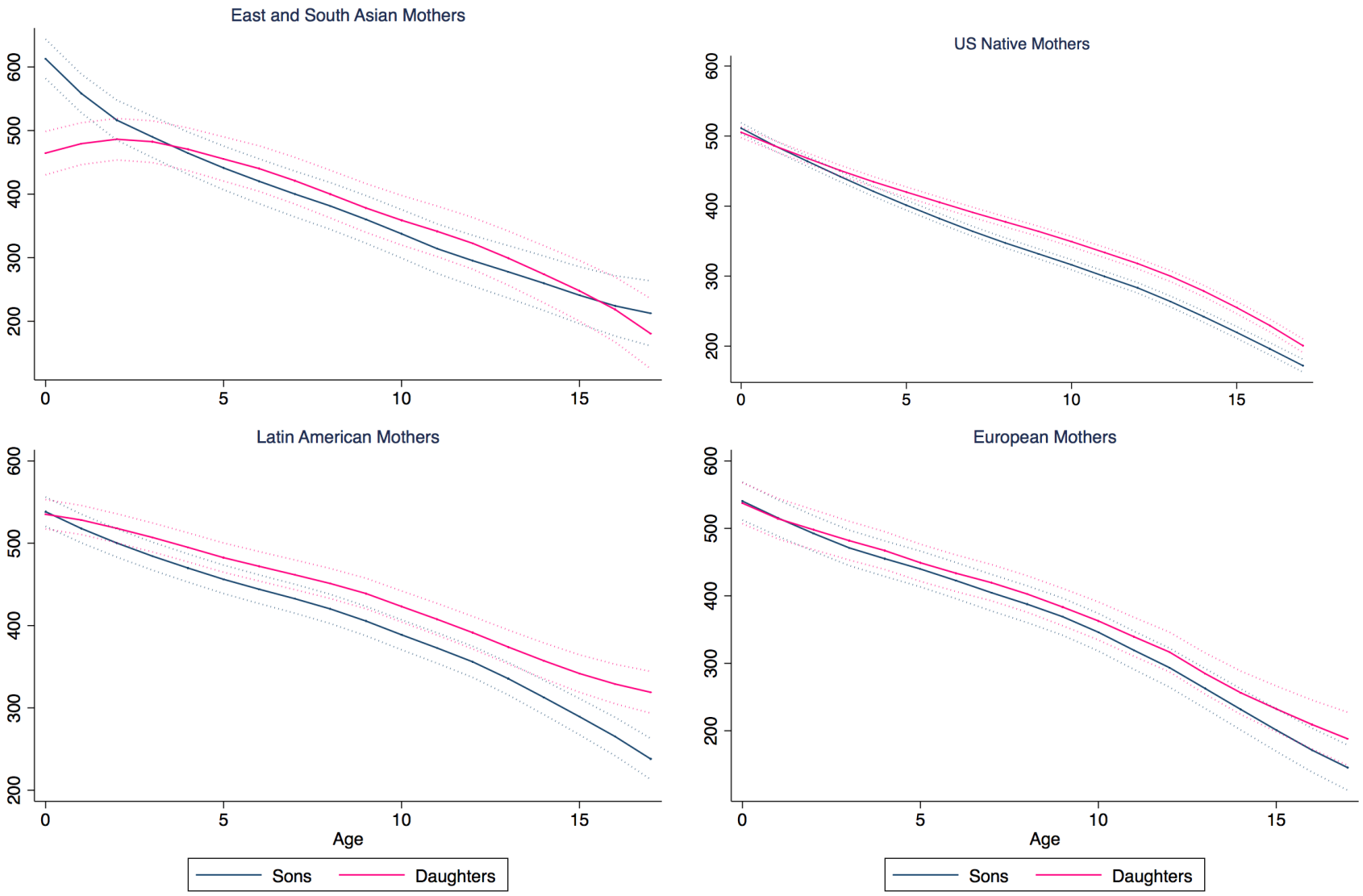

Fig. 1 Locally weighted scatterplot smoothing (LOWESS) plots of total time spent with mother by age of child.
Note: Dotted lines show ± standard error at each year of age. LOWESS bandwidth = 0.6.

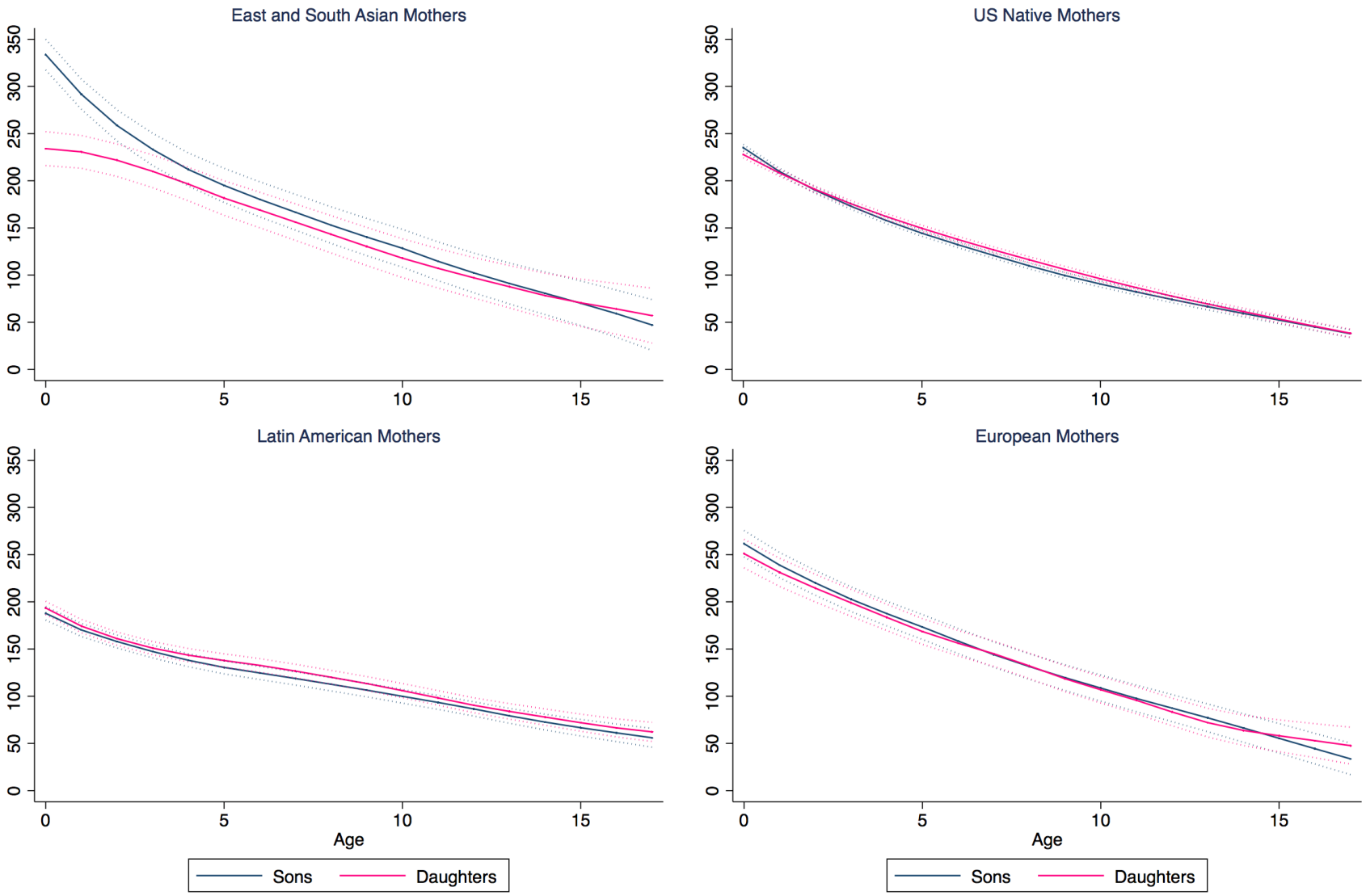

Fig. 2 Locally weighted scatterplot smoothing (LOWESS) plots of quality time spent with mother by age of child.
Note: Dotted lines show ± standard error at each year of age. LOWESS bandwidth = 0.6.

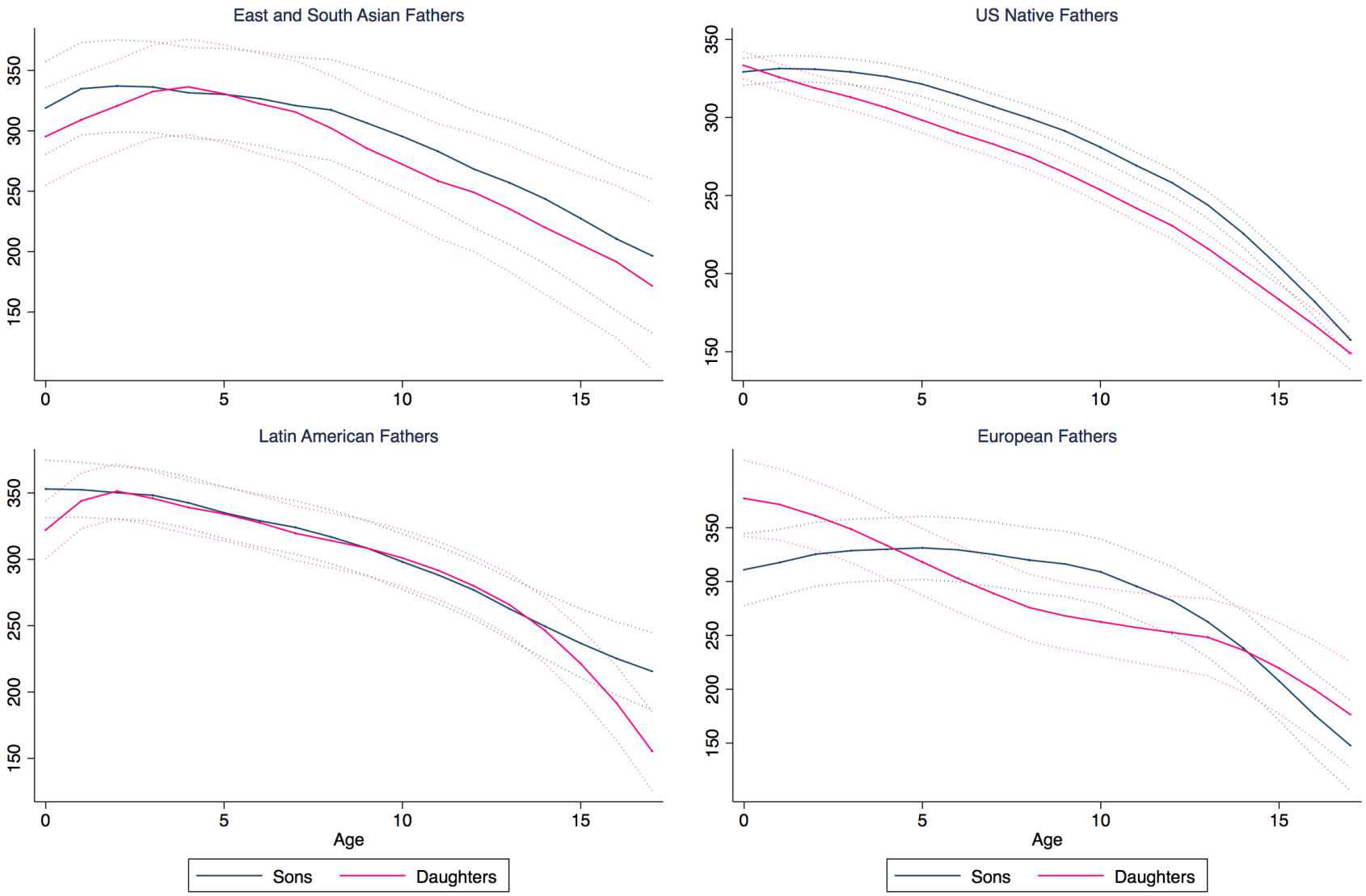

Fig. 3 Locally weighted scatterplot smoothing (LOWESS) plots of total time spent with father by age of child.
Note: Dotted lines show ± standard error at each year of age. LOWESS bandwidth = 0.6.

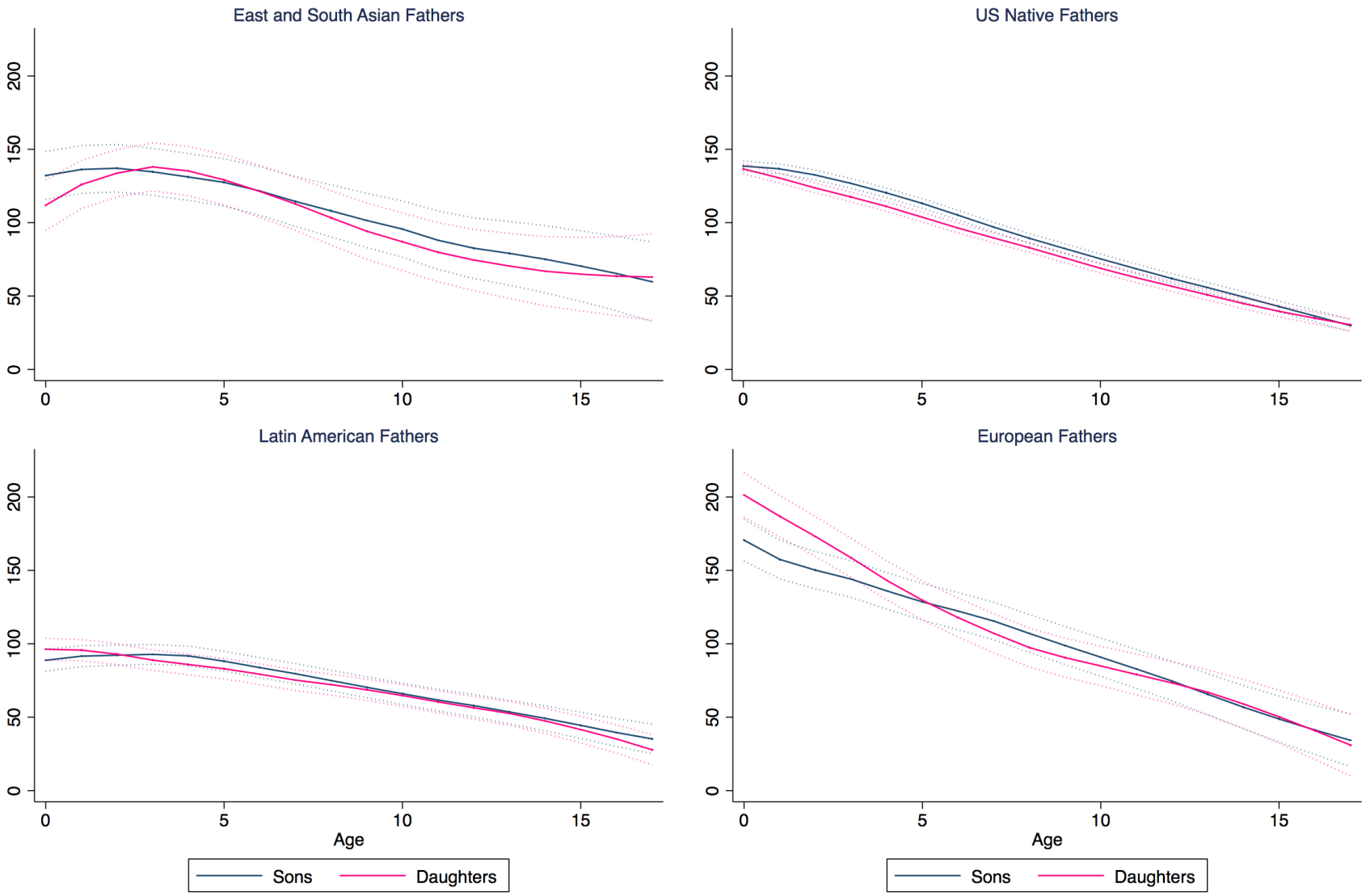

Fig. 4 Locally weighted scatterplot smoothing (LOWESS) plots of quality time spent with father by age of child.
Note: Dotted lines show ± standard error at each year of age. LOWESS bandwidth = 0.6.

Appendix Table 1 South and East Asian Children by Respondent's (parent's) Country of Origin

Country	*n*	%
Bangladesh	63	2.68
China	507	21.54
India	926	39.34
Japan	168	7.14
Korea	269	11.43
Nepal	9	0.38
Pakistan	110	4.67
Sri Lanka	10	0.42
Taiwan	139	5.9
Multiple South & East Asia Countries	153	6.5
N	2,354	100

Appendix Table 2 Summary characteristics of children aged 0-17 years

	East & South Asian Origin Families		U.S. Native Families (3rd or higher generation)		Latin American Origin Families		European Origin Families	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
Age, yrs	7.05	7.04	8.09	8.06	7.63	7.63	7.85	7.85
Birth order	1.51	1.49	1.65	1.65	1.74	1.77†	1.65	1.60†
Previous birth interval 1 year	0.05	0.05	0.06	0.06	0.07	0.08	0.07	0.07
Previous birth interval 2 years	0.11	0.12	0.15	0.15	0.13	0.13	0.16	0.16
Previous birth interval 3 years	0.09	0.08	0.12	0.12	0.11	0.10	0.11	0.12
Previous birth interval 4 years	0.07	0.06	0.07	0.07	0.08	0.08	0.07	0.06†
Previous birth interval 5+ years	0.12	0.14	0.12	0.12	0.20	0.21	0.11	0.09†
No previous birth	0.55	0.54	0.48	0.48	0.42	0.41	0.48	0.51†
Subsequent birth interval 1 year	0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.06
Subsequent birth interval 2 years	0.10	0.12†	0.14	0.14	0.12	0.13†	0.15	0.16
Subsequent birth interval 3 years	0.08	0.09	0.11	0.11	0.10	0.10	0.10	0.11
Subsequent birth interval 4 years	0.06	0.06	0.06	0.06	0.07	0.07	0.06	0.06
Subsequent birth interval 5+ years	0.11	0.09	0.09	0.09	0.15	0.15	0.07	0.07
No subsequent birth	0.60	0.59	0.54	0.54	0.50	0.48†	0.55	0.55
Household size	4.24	4.29	4.52	4.52	4.91	4.98†	4.48	4.41
Number of children	2.02	2.03	2.35	2.34	2.51	2.58†	2.32	2.26
Number of other boys	0.52	0.54	0.69	0.67†	0.78	0.78	0.74	0.65†
Number of other girls	0.50	0.49	0.65	0.67†	0.73	0.80†	0.58	0.61
Sons-only family	0.57	-	0.50	-	0.46	-	0.54	-
Daughters-only family	-	0.54	-	0.49	-	0.42	-	0.50
Mixed-sons-&-daughters family	0.43	0.46	0.50	0.51†	0.54	0.58†	0.46	0.50†
Respondent (parent) is female	0.52	0.53	0.53	0.53	0.55	0.55	0.53	0.54
Respondent's (parent's) age	40.00	39.89	39.26	39.28	36.96	37.14	40.43	40.35
Mother is unemployed	0.46	0.46	0.33	0.33	0.53	0.54	0.40	0.36†
N	1,216	1,138	30,809	29,926	5,606	5,296	2,149	1,927

Note: † indicates that mean for sons and means for daughters are different at the 10% significance level. The test accounts for correlation between siblings within families using a sandwich estimator clustered on family.

Appendix Table 3 Average Minutes Per Day with Parent, by Child's Gender

	East & South Asian Origin Families		U.S. Native Families (3rd or higher generation)		Latin American Origin Families		European Origin Families	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
Time with mother								
Panel A: Children aged 0-5								
Total time	511	481	452	459	491	510†	479	490
Quality time	251	215†	181	182	152	156	211	206
N	276	264	5,695	5,563	1,196	1,131	424	353
Panel B: Children aged 6-17								
Total time	325	342	295	328†	370	409†	314	338†
Quality time	121	111	84	89†	94	101†	99	100
N	362	335	10,761	10,330	1,886	1,758	720	688
Time with father								
Panel C: Children aged 0-5								
Total time	333	326	330	316†	350	342	327	353
Quality time	133	136	129	120†	93	89	148	164
N	253	237	4,975	4,853	968	917	371	324
Panel D: Children aged 6-17								
Total time	288	267	262	238†	286	285	284	257†
Quality time	95	86	69	64†	63	62	83	80
N	325	302	9,378	9,180	1,556	1,490	634	562

Note: The figures (expressed in minutes/day) are based on the time diary of one parent per household. Physical care is time spent on activities categorized as "physical care for children" or "looking after children". Playing is time spent on "playing with children", "playing sports with children", and "arts and crafts with children". † indicates that minutes spent with a parent by sons and daughters are different at the 10% significance level.

Appendix Table 4 Estimates of Son-Preference in Parental Quality Time with Children Aged 0 – 5 Years

	Physical care	Reading	Playing	Talking	Home work	Eating
Panel 1: East and South Asian Origin						
Male child*Father	-4.4	-1.1	1.8	0.9	-1.1	0.6
	(4.3)	(0.7)	(5.6)	(0.7)	(1.2)	(3.0)
Male child *Mother	14.6*	1.8	7.8	1.2	-0.6	5.0†
	(7.2)	(1.6)	(5.0)	(1.1)	(0.8)	(3.0)
Mean of dependent variable	67.38	10.13	61.53	1.287	3.456	58.02
N	237	237	237	237	237	237
Panel 2: U.S. Native (3rd or higher generation)						
Male child*Father	3.3**	0.1	2.2**	-0.1†	-0.3†	0.7
	(1.0)	(0.2)	(0.8)	(0.1)	(0.2)	(0.6)
Male child *Mother	0.2	-0.3	0.9	-0.1	-0.0	-0.3
	(1.3)	(0.2)	(0.8)	(0.1)	(0.2)	(0.4)
Mean of dependent variable	68.14	4.885	42.10	1.580	1.558	51
N	6,051	6,051	6,051	6,051	6,051	6,051
Panel 3: Latin American Origin						
Male child*Father	-4.6	-0.1	-1.7*	0.0	0.1	-0.3
	(3.7)	(0.1)	(0.8)	(0.2)	(0.2)	(0.6)
Male child *Mother	3.3	-0.0	-1.7†	-0.4	0.2	-0.0
	(2.8)	(0.2)	(1.0)	(0.5)	(0.6)	(1.0)
Mean of dependent variable	54.25	1.953	26.07	1.146	2.740	50.66
N	1,165	1,165	1,165	1,165	1,165	1,165
Panel 4: European Origin						
Male child*Father	0.1	0.8	2.3	0.5	-1.1	-1.4
	(2.2)	(0.8)	(1.5)	(0.6)	(0.7)	(1.2)
Male child *Mother	0.9	0.5	1.4	1.1†	-0.2	0.2
	(4.2)	(0.9)	(3.0)	(0.6)	(0.4)	(1.7)
Mean of dependent variable	75.50	6.723	52.21	2.475	0.957	55.07
N	444	444	444	444	444	444
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	Yes	Yes	Yes	Yes	Yes	Yes
Previous & subsequent birth interval	Yes	Yes	Yes	Yes	Yes	Yes
Family Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in the top two rows of each column in a panel are based on a separate OLS regression with minutes of time with the child per day spent on the activity specified in the column heading as the dependent variable. Robust standard errors clustered on family are in parentheses.**p<0.01, *p<0.05, †p<0.1.

Appendix Table 5 Estimates of Son-Preference in Parental Quality Time with Children Aged 6 – 17 Years

	Physical care	Reading	Playing	Talking	Home work	Eating
Panel 1: East and South Asian Origin						
Male child*Father	-1.2	-0.1	2.0	-0.2	1.5	0.7
	(1.0)	(0.2)	(1.8)	(0.3)	(1.8)	(1.4)
Male child *Mother	-2.5†	-0.5	0.6	-0.2	-1.2	0.4
	(1.4)	(0.5)	(0.6)	(0.5)	(1.3)	(1.6)
Mean of dependent variable	16.41	2.899	9.464	3.227	10.93	49.59
N	507	507	507	507	507	507
Panel 2: U.S. Native (3rd or higher generation)						
Male child*Father	0.9**	0.1	1.2**	-0.1	0.4	0.9**
	(0.2)	(0.1)	(0.4)	(0.1)	(0.2)	(0.3)
Male child *Mother	-1.2**	-0.2	-0.2	-0.1	0.0	-1.0**
	(0.4)	(0.1)	(0.2)	(0.2)	(0.2)	(0.3)
Mean of dependent variable	19.81	1.302	7.452	3.514	5.057	37.22
N	16,763	16,763	16,763	16,763	16,763	16,763
Panel 3: Latin American Origin						
Male child*Father	1.9	0.0	0.7	0.1	0.5	0.8
	(1.2)	(0.0)	(0.4)	(0.1)	(0.4)	(0.5)
Male child *Mother	-2.6**	-0.2	-0.6	-0.5*	0.7	-1.3*
	(0.9)	(0.2)	(0.6)	(0.2)	(0.7)	(0.6)
Mean of dependent variable	16.83	1.116	7.736	2.680	6.040	46.38
N	2,925	2,925	2,925	2,925	2,925	2,925
Panel 4: European Origin						
Male child*Father	1.0	-0.4	2.7†	0.4	2.4	-0.5
	(0.8)	(0.3)	(1.5)	(0.2)	(1.5)	(1.3)
Male child *Mother	-0.7	-0.5	0.3	-1.2*	-0.5	0.1
	(1.3)	(0.5)	(0.4)	(0.5)	(0.8)	(1.2)
Mean of dependent variable	19.16	1.480	8.234	3.979	6.824	43.60
N	1,071	1,071	1,071	1,071	1,071	1,071
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	Yes	Yes	Yes	Yes	Yes	Yes
Previous & subsequent birth interval	Yes	Yes	Yes	Yes	Yes	Yes
Family Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in the top two rows of each column in a panel are based on a separate OLS regression with minutes of time with the child per day spent on the activity specified in the column heading as the dependent variable. Robust standard errors clustered on family are in parentheses.**p<0.01, *p<0.05, †p<0.1.

Appendix Table 6 Estimates of the Association between Parental Time with Children Aged 0 – 5 Years and Years in the US, among East and South Asian First Generation Immigrant Families

	Total time			Quality time		
	(1)	(2)	(3)	(1)	(2)	(3)
Mother	141.0**	131.7**		71.6**	64.9**	
	(39.3)	(39.5)		(22.3)	(22.0)	
Male child*Father	40.3	29.7	15.9	-3.7	-10.3	11.7
	(44.1)	(44.0)	(40.2)	(18.2)	(18.4)	(20.2)
Male child *Mother	7.6	13.2	48.8	18.7	24.5	23.7
	(30.3)	(30.3)	(41.2)	(21.4)	(21.4)	(21.5)
Years in the US	-2.5	-2.6		-0.1	-0.2	
	(1.6)	(1.6)		(0.7)	(0.7)	
Years in the US*Mother	1.8	2.6		1.0	1.5	
	(2.3)	(2.2)		(1.3)	(1.3)	
Years in the US*Male Child	-2.3	-1.7	-1.7	-0.0	0.2	-1.2
	(2.4)	(2.4)	(3.4)	(1.0)	(1.0)	(1.6)
Years in the US*Mother*Male Child	3.5	2.6	1.3	0.6	-0.1	1.9
	(3.1)	(3.0)	(4.0)	(1.8)	(1.7)	(2.0)
Mean dependent variable (in minutes)	421.6	421.6	391.2	185.0	185.0	197.2
N	891	891	200	891	891	200
Controls:						
Age	Yes	Yes	Yes	Yes	Yes	Yes
Birth order	No	Yes	Yes	No	Yes	Yes
Previous and subsequent birth interval	No	Yes	Yes	No	Yes	Yes
Family Fixed Effects	No	No	Yes	No	No	Yes

Note: Data on parent's time with each child in the family are obtained from the time diary of one parent (father or mother) per family. Figures in each column are based on a separate OLS regression with minutes of total time with the child per day (or quality time per day) as the dependent variable. Robust standard errors clustered on family are in parentheses. **p<0.01, *p<0.05, †p<0.1