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Abstract

More than 2 decades of economic reforms have brought great improvements in the quality of life for women and girls in China. Despite these improvements, in some areas, cultural values and norms concerning gender roles and traditional family structures still influence the values attached to sons and daughters and create strong incentives for son preference (Croll 2000; Li and Lavelly 2003). The most striking evidence of the priority parents place on sons is demographic: the "missing girls" phenomenon of abnormally masculine sex ratios at birth. This phenomenon has become more extreme in the economic reform period (Banister 2004).

Comments

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Do Mothers in Rural China Practice Gender Equality in Educational Aspirations for Their Children?

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More than 2 decades of economic reforms have brought great improvements in the quality of life for women and girls in China. Despite these improvements, in some areas, cultural values and norms concerning gender roles and traditional family structures still influence the values attached to sons and daughters and create strong incentives for son preference (Croll 2000; Li and Lavelly 2003). The most striking evidence of the priority parents place on sons is demographic: the “missing girls” phenomenon of abnormally masculine sex ratios at birth. This phenomenon has become more extreme in the economic reform period (Banister 2004).

However, whether parents privilege sons over daughters in making educational investments is a different question. Educational differences between girls and boys have become much more subtle in recent years (Hannum 2005; Connelly and Zheng 2007a, 2007b). This trend raises questions about whether traditional attitudes can still be linked to a disadvantage for girls in education. In this article, we focus on a poor rural area in northwestern China and investigate whether the gender attitudes of mothers can be linked to their plans for educating their own children in the future. Using recent longitudinal data from the Gansu Survey of Children and Families (GSCF), a survey of rural 9–12-year-old children, families, and schools in Gansu province, we explore whether mothers’ attitudes toward gender equality and old-age support, their expectations of future returns from children, mothers’ perceptions of a child’s promise for continuing schooling, and the child’s actual school performance are linked with mothers’ educational aspirations for the child, controlling for family characteristics.

Our article proceeds as follows. We begin by reviewing earlier research on educational aspirations and on gender and education in developing countries. We next discuss the cultural and social contexts of rural China and of Gansu in particular. We then provide an overview of our data and proceed with the analyses. We first show descriptive tabulations of mothers’ beliefs and attitudes regarding gender equality and mothers’ anticipated future fi-

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nancial returns from children and of the sample children's school achievements by mothers' educational aspirations for the sample children. We then estimate multivariate models that examine how mothers' attitudes regarding gender equality, together with children's academic promise, relate to maternal educational aspirations for the child net of other family background characteristics. We next test whether mothers' educational aspirations for children predict children's actual school persistence. Finally, we summarize our results and provide a discussion and conclusions.

Framework

Research on Educational Aspirations

Many early studies of educational aspirations were rooted in the status attainment framework (Sewell and Shah 1968; Sewell et al. 1969). In this framework, families are an important social institution through which social stratification occurs. Parents act as role models and provide economic, social, cultural, and intellectual resources to their children; in turn, children aspire to attain comparable socioeconomic positions as adults (Kao and Tienda 1998).

Parental educational aspirations are a key mechanism by which parental socioeconomic status is transmitted to the next generation. However, while proponents of status attainment theory emphasize the role of parental aspirations in motivating youth, other researchers have argued that aspirations are simply a rational assessment of the costs and benefits of future actions. People in different social strata tend to have different perceptions of their chances of educational success, and aspirations are evaluated according to costs and opportunity structures (Alexander and Cook 1979). The critique of aspirations as a rational calculation is more applicable to high school seniors (who are about to transition to college or work) than to primary school children. In the case of young children, parental aspirations represent a motivation toward higher educational outcomes in the future.

A very different conceptualization of parental aspirations has emerged in educational research in developing countries, much of which is grounded in economic frameworks. Decisions about the schooling of children are often conceptualized as elements of family strategies to maximize returns to the family as a unit (Buchmann and Hannum 2001). This work often overlooks how the school performance of a child may affect parental investment in the child's educational outcome. As parents consider whether to invest in a child, it is likely that they consider the degree to which the child will be able to take advantage of educational opportunities. Some research has suggested that parents with limited resources who have more than one child may seek to maximize returns on their investments by focusing on the child who shows the most promise (Stash and Hannum 2001). Hence, parents' educational aspirations for a given child may represent

parents' psychological motivations as well as their rational assessments of the child's future educational attainment.

Research on Gender and Education in Developing Countries

There is a substantial body of literature that considers the disadvantages of girls in educational attainment as compared to boys and the family factors that contribute to differential outcomes of girls versus boys. Much of this research implicitly adopts the family strategy model described above. While girls' disadvantages in educational attainment have declined in many countries, a child's gender continues to shape parental incentives for educating children in some rural developing country settings.¹

Where scarcity dictates careful consideration regarding returns to the family for investments in schooling and where labor markets and family systems have traditionally differentiated the value of such returns in a manner privileging boys, there is a strong incentive for son preference in parents' decisions about their children's schooling (Stromquist 1989). In many rural Asian settings, for example, girls marry out of the family—and even out of the village—and thus families have a survival-based imperative for investing in their sons' but not their daughters' educations.

A second important theme in research on gender inequality in education in developing countries points to the cultural context of rational cost-benefit analyses for households and emphasizes cultural norms and attitudes about appropriate roles of women. In traditional rural settings, where girls are defined primarily as future mothers and wives, prevailing cultural norms about gender and the division of labor within the family may deter investments in girls' education.² These norms and values form the framework through which parents interpret their situation and make "rational" calculations. The traditional family structure serves as the institutional foundation for these gender norms.

Because those parents who subscribe to traditional gender norms are likely to perceive the future returns on educational investment and labor market opportunities differently for boys and girls and also because these parents may ask girls to take up household chores that could inhibit school performance, it is difficult to completely separate explanations that emphasize culture from explanations that focus on rational family strategies. However, one can draw a distinction between discrimination that arises primarily due to economic considerations and discrimination that arises due to a combination of incentives and traditional attitudes. Indeed, several scholars have argued that the combination of traditional gender values and poverty most

¹ Blossfeld and Shavit 1993; King and Hill 1993; Knodel and Jones 1996; Filmer 1999; Schultz 2002; Mahmud and Amin 2006; Rothchild 2006.

² Stromquist 1989; Fuller and Liang 1998; Buchmann 2000.

discourages investment in the education of girls (Stromquist 1989; Filmer 1999).

China Context

From a historical basis in Confucian ideology, traditional Chinese culture placed women at a lower status relative to men (Li and Lavelly 2003). During the socialist period, especially during the Cultural Revolution (1966–76), the Chinese government made significant efforts to raise women’s social status by providing legal guarantees of the equality of women and by encouraging women to participate in social production. At the same time, the official discourse guiding gender relations emphasized equality between women and men, signaled by the well-known slogan “women hold up half of the sky” (Lin 1993; Li and Lavelly 2003).

Studies of girls’ disadvantage in basic education show that there were rapid improvements during the Cultural Revolution period, that such progress slowed in the early years of market transition, and that it subsequently resumed (Hannum and Xie 1994; Zhou et al. 1998). China has now reached almost universal elementary school enrollment, and the gender gap at the secondary level is very small. In 2000, the national gross enrollment ratio at the secondary level was 66 percent for males and 64 percent for females (UNESCO Institute for Statistics 2006). In many parts of China, especially in urban China, gender differences in educational attainment are now fairly small. In a study of one large city in China, Ming Tsui and Lynne Rich (2002) found that, among single-child families, there was no gender difference in parents’ educational aspirations and educational spending for their sons and daughters.

However, the patrilineal family structures that characterize many rural areas reinforce a traditional norm that parents should rely on their sons for old-age support. Parents may see their investment in their sons’ education as long-term insurance (Hannum 2003; Li and Lavelly 2003). Many scholars have argued that the confluence of poverty with traditional norms of dependence on sons for old-age support and rising educational costs gives parents stronger incentives to aspire to higher educational attainments for sons than for daughters. Girls may be at elevated risk of leaving school when costs rise and resources are constrained (Hannum 2003, 2005; Li and Lavelly 2003).

However, in the educational stratification literature in China, there are few empirical studies of parents’ gender attitudes and how these attitudes influence family decisions on children’s education. One study in rural north-west China found that most mothers in rural settings actually express egalitarian attitudes about girls’ right to education and their abilities and that girls compare well with boys in their school performance and engagement (Hannum and Kong 2002). This study offers a mixed picture of egalitarian

attitudes among most mothers together with the persistence of traditions that may eventually detract from girls' schooling.

Besides gender norms and family factors, the child's school performance is also recognized as an important factor in determining education attainment in rural China. Very often, lower scores in entrance exams lead to higher fees for sending children further in school. Previous studies have suggested that girls have to show more promise in order to remain in school: academically weak girls are more likely to drop out in primary school, while most boys continue on to junior high schools (Brown and Park 2002; Zheng et al. 2002). Yet, no research in rural China has looked at how parents form educational plans regarding their children based on children's academic performance.³

A focus on mothers is especially appropriate in the context of rural China because, in most families, it is primarily the mothers who are the child-care providers. This is especially true in rural Gansu, where many of the fathers are full-time or part-time labor migrants; many spend at least some time away from the villages in which their wives and children live (Brown 2003). It is the mother who remains at home, taking care of the family and working on the land. Mothers are the ones who play an important role in socializing the children into gender roles. A mother's educational aspirations for her child may have an impact on the child's school persistence and not be just a proxy of family educational plans for the children. More important, a mother's educational aspirations for her child may influence parenting practices at home. In this way, the mother has a great deal of influence on her children's schooling through the daily emotional support and normative discipline she provides.

Hypotheses

In this study, we test whether mothers' gender attitudes, expectation of future returns from children, and evaluation of the sample children's promise in continuing schooling are linked to educational aspirations for children. We hypothesize that mothers' gender attitudes may be closely linked to educational aspirations for sons or daughters:

HYPOTHESIS 1. Maternal educational aspirations for sampled boys and girls are more similar among mothers who hold egalitarian gender attitudes than among mothers who do not.

While mothers express egalitarian gender attitudes in general, they still have to face the reality of limited economic resources in the present and concerns for their old-age support in the future. Economic incentives that encourage valuing sons over daughters may affect the educational decision making of mothers, especially when family financial resources are scarce. This situation leads to our next hypothesis.

³ See Brown (2006) on determinants of investing in children in rural Gansu.

HYPOTHESIS 2. The difference in maternal aspirations between mothers of sample boys and mothers of sample girls is greater among mothers who believe that parents should rely on sons for old-age support.

Besides maternal gender attitudes and opinions about old-age support, how much financial help the mother expects to receive in the future from all of her children may also be linked to her educational aspirations for a given child (the sampled child). Also, a mother's anticipation of future returns to a daughter's education could influence the formation of her future plans for her daughter. For example, the concentration of women in agricultural work could influence a mother's perception of different returns to educating her sons and daughters.⁴ To test this notion, we posit the following two hypotheses:

HYPOTHESIS 3. The greater the future financial help mothers expect from their children, the higher their educational aspirations for sample children.

HYPOTHESIS 4. The difference in aspirations between boys's mothers and girls' mothers is heightened among mothers who believe that there is a gender difference in future returns to schooling.

A key piece of this study lies in investigating whether the mother's evaluation of her child's promise in schooling is a factor that influences her educational aspirations for the child. We will test the following hypothesis:

HYPOTHESIS 5. Mothers' educational aspirations respond to sample children's engagement with schooling and their previous school achievement.

Finally, to investigate the usefulness of maternal educational aspirations as an analytic focus, we test whether maternal educational aspirations for sample children in 2000 matter for children's enrollment status in 2004.

To take into consideration the impact of economic constraints and the dilution of family resources among siblings, we also consider whether these relationships persist net of family socioeconomic background and sibship structure.

Data and Methods

Data

The GSCF data come from Gansu province, one of China's inland provinces with a large rural population. The GSCF consists of a sample of 2,000 rural children aged 9–12 in the year 2000. A multistage cluster sampling approach was used, with random selection procedures at each stage: first counties, then townships, then villages, and, finally, children were selected. At the final stage, 20 children were sampled from all 9–12-year-old children in each of the 100 selected village. Only one child per household was selected. There are also linkable secondary samples of sample children's mothers and

⁴ Parish and Willis 1993; Summerfield 1994; Michelson and Parish 2000.

teachers, school administrators, and village leaders. A follow-up wave of data collection occurred in 2004. These materials provide rich information on the social, material, and cultural resources that are available for the child at home, at school, and in the community. The longitudinal data make it possible to investigate the target child's mother's educational aspirations for her child and the target child's actual school attainment 4 years later.⁵ We conduct our analysis of aspirations using the first-wave data and the analysis of enrollment using both the first- and second-wave data. After eliminating all cases with missing data, 1,687 cases are used in the analysis.

Measures

Other than wealth measures, which came from a household questionnaire that was usually answered by the father, our analyses focus primarily on data collected from the mother. Each mother completed a questionnaire about her educational aspirations for her child, her attitudes toward gender and education, and her expectations of returns from all of her children in the future. The questionnaire also covered each mother's evaluation of the sampled child's well-being and school performance. All of the above measures are from the first wave of the survey. The measure of the child's current schooling status is from the second-wave household questionnaire. Table 1 presents descriptions of the measures used in our subsequent analyses.

Mothers' educational aspirations.—Our primary outcome measure is mothers' educational aspirations for the sample children. Each mother answered the following question about the sample child: "What is the highest level of education you think your child can achieve?" On the whole, mothers' aspirations were extremely high: 27 percent of mothers aspired for sample children to graduate from college.

Mothers' attitudes.—We first consider mothers' beliefs regarding gender equality in general, including mothers' attitudes about the rights of girls to education, the capabilities of girls, the equality of women in society in general, and the equal socialization of children at home.⁶ We then consider mothers' attitudes toward old-age support. This concept is tapped by first asking if the mother agrees that parents should rely on sons for old-age support. The questionnaire then asked a more extreme question of whether the mother

⁵ The Gansu survey is unique in providing measures of children's, mothers', and teachers' perceptions on many aspects of children's schooling, and life in general, in addition to conventional measures of children's family socioeconomic situation, distribution of resources among children within household, and school input that are often used in educational stratification research. This information makes it possible to investigate the social context in which the child lives and the child's experience within school, both of which are of vital importance for understanding educational stratification in China today. The subjective interpretations of these target children allow researchers to bring the voices of children into educational research, something that is often lacking in the existing literature. For a detailed description of the data, see Hannum and Park (2002).

⁶ The Hannum and Kong (2002) study found that mothers actually hold fairly egalitarian gender attitudes on girls' rights to education and ability in schooling. Also, girls are doing as well as boys in school performance.

TABLE 1
DEFINITIONS OF VARIABLES USED IN THE ANALYSIS

Variable	Definition
Mother's educational aspirations	"What is the highest level of education you think your child can achieve?"
Gender equality factor	Factor analysis of four questions: "Girls can do as well as boys if they study hard." "Daughters should enjoy the same educational opportunities as sons." "Women can achieve as much as men can." "Parents should encourage girls to have their own opinions, as boys do."
Old-age support	"Parents should rely on sons for old-age support."
Education of daughters	"There is no use educating daughters since they will marry out of the family."
Future returns from children	"How much financial aid do you expect from your children?"
Future returns to education	"Education influences boys' future income more than it does that of girls'."
Child's engagement in school	"The child enjoys schooling."
Child's schooling status	Whether the child is currently in school (2004)
Child's academic achievement	Math grades from the previous year in 100 points: A = 90–100, B = 80–89, C = 70–79, D = 60–69, F = 59 or below
Mother's education	Years of formal schooling the mother ever had
Father absence	Father away from home for at least 6 months in the previous year
Family wealth	Total value of house, equipment, and durable goods
Sibship composition	Total number of children in the household Number of elder brothers Number of elder sisters Number of younger brothers Number of younger sisters

agreed that sending a daughter to school was useless since daughters marry out of the family. We also look at the amount of financial help that mothers expect to receive from children in the future. Finally, we examine whether mothers perceive different returns to schooling for daughters and sons due to anticipated gender discrimination in the labor market. This measure comes from mothers' responses to a specific question about whether education influences boys' and girls' future incomes differently. In order to streamline measures of mothers' attitudes, we created a miniscale of mothers' attitudes on gender equality in general by adding four measures together, based on the result of exploratory factor analysis.⁷

Children's promise in schooling.—We measure mothers' perceptions of their children's promise in schooling in two ways: whether the mother thinks that her child enjoys school and the child's math grade from the previous semester, the latter measured on a 100-point scale. In our bivariate analyses, we recoded child's math grade into five categories, ranging from A to F (E not used). Given that the grade was reported prior to the mother's report

⁷ We ran a factor analysis of all measures of the mother's attitudes. This scale was selected based on a factor with an eigenvalue greater than one. There are four items in the miniscale for the mother's gender attitudes (Cronbach's $\alpha = 0.60$). The scale ranges from 6 to 12.

of her educational aspirations for the child, it is likely that the mother used the grade as a signal of the child's academic promise.

Family background measures.—As measures of family socioeconomic status, we consider mothers' years of schooling, whether fathers are absent from the home, family wealth, and sibship composition. Mothers' education is measured in years of formal schooling. A father is considered as absent from home if he was away from home for at least 6 months during the year before the survey. In rural Gansu, many males migrate to cities for temporary jobs as an important means of obtaining cash income for their families. This measure of father absence serves as a proxy of the father working elsewhere as a migrant worker.

In settings where many people do not have access to much cash income, family wealth is a more reliable measure of the socioeconomic status of the household than income. In addition, income from farming varies greatly from year to year. From the household questionnaire, we have detailed information about family property and assets. Measures include housing, farm machines and other productive equipment, and household durable goods. Family wealth is calculated as a sum of the value of these possessions. For our analyses, we employ wealth quintiles in order to capture the possible nonlinearity of this measure and its effects on educational aspirations and child's school status in 2004.

The measures of family characteristics also include sibship structure. We use the numbers of elder and younger brothers and sisters separately to test how sibship composition relates to mothers' aspirations and children's enrollment status. Family background measures are used as control variables in the multivariate analysis.

Children's schooling status.—This is a measure of whether the child is currently enrolled in school. We obtained this information from the second-wave survey in 2004, 4 years after the first wave of data was collected. The child's current enrollment status comes from the household questionnaire in wave 2. For most households, the father completed this part of the questionnaire.

Methods

Our first set of models disentangles the relationships between mothers' gender attitudes, mothers' evaluation of children's promise in schooling, and mothers' educational aspirations for children, controlling for family background characteristics. We then test whether mothers' aspirations can help predict the child's school persistence. For both models, we report robust standard errors using generalized estimating equations (GEE) estimation that corrects for cluster dependency.⁸ For both analyses, we estimate nested models

⁸ We also examined a model that included fixed effects for village of residence, using PROC GENMOD in SAS. A Hausman test showed that there were no significant differences between fixed-effects and random-effects coefficients. The robust standard errors reported in the analysis are obtained by using GEE estimates that take into account correlations among the observations.

for the pooled sample and then estimate the full model separately for boys and girls.

Analysis

Descriptive results.—Table 2 presents descriptive tabulations of family characteristics and child's school performance in wave 1 (2000). Fifty-two percent of the children in the sample are boys. The average age of the sample children is about 11 years. On average, mothers in rural Gansu have very limited formal schooling: the average is only about 4 years. On average, the boys' mothers have a little more education than do the girls' mothers. Mothers' education is highly correlated with maternal educational aspirations for children: mothers who have more education themselves tend to have higher aspirations for children (our calculations, not shown). For example, those mothers who aspire for their child to complete simply primary school on average have only about 2 years of schooling. In contrast, 71 percent of the mothers who have college aspirations for their child at least graduated from junior high school themselves.

There is no significant gender difference in family wealth or in whether the father is absent from home. It is likely that most of the absent fathers

TABLE 2
DESCRIPTIVE STATISTICS OF FAMILY BACKGROUND CHARACTERISTICS AND CHILD'S ACADEMIC ACHIEVEMENT BY CHILD'S GENDER

	Boy		Girl	
	Mean	Standard Deviation	Mean	Standard Deviation
Child's individual characteristics:				
Gender (%)	52.40		47.59	
Age (in years)	11.03	1.10	11.04	1.09
Family socioeconomic status:				
Mother's education (in years)**	4.30		3.97	
Father absence (%)	8.82		7.47	
Family wealth (in RMB yuan)	15,156	17,105	14,184	16,623
Sibship structure:				
Number of children	2.22	.67	2.44	.76
Number of elder brothers***	.22	.42	.34	.53
Number of elder sisters***	.54	.76	.31	.59
Number of younger brothers***	.23	.43	.51	.53
Number of younger sisters***	.23	.44	.29	.54
Child's academic achievement (in math):				
Average grade of sample	74.19	14.47	74.39	14.18
A average (%)	10.75		11.44	
B average (%)	19.57		16.92	
C average (%)	28.17		29.10	
D average (%)	23.53		26.49	
F average (%)	17.99		16.04	
Child's schooling status (2004):				
currently in school (**)	88.86		84.49	
N	884		803	

** $p < .05$ in *T*-test of gender differences in means or proportions.

*** $p < .001$ in *T*-test of gender differences in means or proportions.

were away working as migrant laborers. Sibship composition does show significant differences between boys and girls. On average, boys have significantly fewer siblings than girls. Boys are more likely than girls to have elder sisters, while girls are more likely to have younger brothers. These patterns suggest that parents often have more children if their earlier children are girls in order to have at least one son. This difference reflects son preference in childbearing that is still prevalent in rural Gansu. As Hannum and Kong (2002, 19) point out, the sex ratio of boys to girls at birth in Gansu was 124.17/100 in 1997, a dramatic increase from the 110.38/100 for the 1990 census.

Girls enjoy the same educational achievement as boys. If mothers formed their educational aspirations based on a rational evaluation of the promise of educational success manifested by their children, mothers should report similar educational aspirations for girls as compared to boys.

Most of the children were at elementary school age when the first wave of data was collected in 2000, and almost all the children were in school. Four years later (wave 2), 13 percent of the children had dropped out of school. This is also when most of them had reached the age for junior high school. We start to see a significant gender difference in child's school persistence, with 11 percent of the boys and 15 percent of the girls being out of school. In other words, the risk of being out of school is about 39 percent higher for girls as compared with boys. This result is consistent with previous findings that, with almost universal enrollment of children at elementary school level, gender disparity only becomes a problem at higher levels, when the cost of schooling rises.⁹

Table 3 presents data for mothers' aspirations for children, mothers' gender attitudes, and mothers' evaluation of the children's promise. There is a significant gender difference in mothers' educational aspirations. About 25 percent of the girls' mothers aspire for the daughter to obtain a college education, while about 30 percent of the boys' mothers hold similar aspirations. Approximately 37 percent of the mothers aspire for their daughters to graduate from senior high school, as compared to 46 percent of boys' mothers. Thirty-one percent of the girls' mothers will be satisfied if their daughters can graduate from junior high school, while only 21 percent of the boys' mothers express the same aspiration.

To consider the factors that are associated with this gender difference in mothers' educational aspirations, we first examine mothers' attitudes on gender equality in general. About 90 percent of the mothers agree with the egalitarian statements on abilities of women in society, a girl's right to education, and the capability of girls in school. Slightly fewer mothers (83 percent) agree on the equal socialization of sons and daughters at home ("Par-

⁹ Hannum and Park 2002; Zheng et al. 2002; Brown 2003; Hannum 2003.

TABLE 3
DESCRIPTIVE STATISTICS OF MOTHER'S ATTITUDES (%) BY CHILD'S GENDER

	Boy	Girl
Educational aspirations for child:***		
Graduate from elementary school	3.3	6.0
Graduate from junior high	20.8	31.0
Graduate from senior high	46.3	37.5
Graduate from college and above	29.6	25.5
Gender equality:		
Girls can do as well as boys at school:		
Disagree	1.2	.5
No opinion	8.9	8.7
Agree	89.8	90.8
Women can achieve as much as men do:		
Disagree	1.6	2.6
No opinion	9.2	8.5
Agree	89.3	88.9
Daughters should enjoy same educational opportunities:		
Disagree	2.0	1.5
No opinion	7.9	7.9
Agree	90.1	90.7
Parents should encourage girls to have their own opinion:		
Disagree	2.3	2.2
No opinion	14.5	14.3
Agree	83.3	83.4
Old-age support:		
Parents should rely on sons for old-age support:		
Disagree	23.1	24.2
No opinion	19.2	21.4
Agree	57.7	54.4
No use to educate daughters since they will marry out:		
Disagree	69.8	66.6
No opinion	14.0	15.1
Agree	16.2	18.3
Future returns from children (amount of financial aid expected from children):		
A lot	19.5	17.2
Some	66.3	65.9
Very little	14.3	16.9
Future returns to education (education influences boys' future income more than girls' [% yes])**	48.8	44.0
Child's engagement in school (child enjoys school [%]):		
Never	4.2	3.4
Sometimes	48.2	45.7
Always	47.6	50.9
N	884	803

** $p < .05$ in χ^2 test of association with gender.

*** $p < .001$ in χ^2 test of association with gender.

ents should encourage girls to have their own opinions, as boys do"). These results suggest that, at least in principle, rural Gansu women hold egalitarian ideals. However, there are still about 10 percent of mothers who do not actively believe that girls should enjoy the same educational opportunities as boys.

When asked about their anticipation of future support from their children, about 58 percent of the boys' mothers and 54 percent of the girls' mothers agree that parents should rely on sons for old-age support, and

about 18 percent of the girls' mothers and 16 percent of the boys' mothers agree with the most extreme statement that it is a waste to educate daughters since they are going to marry out of the family. Thus, while mothers in general profess extremely egalitarian beliefs about gender equity, many mothers expect to rely on sons for financial support in their old age.¹⁰

As for future returns from children, about 20 percent of the boys' mothers and 17 percent of the girls' mothers expect substantial financial help from their children in the future. About 49 percent of boys' mothers and 44 percent of girls' mothers anticipate better returns in the future labor market for boys than for girls. There is no gender difference in the mother's evaluation of the child's engagement in schooling. About half of all the mothers report that their child always enjoys schooling.

These attitudes are clearly linked to the mothers' aspirations for their children. The gender disparity in the mothers' aspirations for boys and girls is most pronounced for those mothers who disagree or do not actively agree with egalitarian statements. Figure 1 presents a plot of mothers' college aspirations for sample children by mothers' response to the statement that "Given the same opportunities, women can achieve as much as men can" by child's gender.

Among mothers who agree with the statement, there is little difference in the educational aspirations of mothers of boys and girls. Among mothers who do not actively agree and those who disagree, the difference between girls' mothers and boys' mothers is as large as 19 percent. Twenty-nine percent of the boys' mothers in this group aspire for their sons to go to college, while only 10 percent of the girls' mothers have the same aspirations. Comparing the percent of mothers holding college aspirations for girls by their attitudes to the statement, we see a notable difference. Mothers who actively agree with the statement are 2.2 times as likely to hold college aspirations for their daughters as compared with mothers who do not actively agree with the statement. The result is consistent when we link mothers' college aspirations for sample children with mothers' opinions regarding gender equity in educational opportunities (our calculations, not shown).

These results show that girls benefit from having mothers with egalitarian gender attitudes; such attitudes translate to mothers' aspirations for girls being similar to mothers' aspirations for boys. This pattern is consistent with our first hypothesis that mothers' attitudes on gender in general are associated with educational aspirations for children.

We further test whether mothers' opinions on traditional norms of relying

¹⁰ In auxiliary analyses, we examine mothers' views on the statement that it is a waste to educate daughters by family wealth. Holding this view is clearly connected with family economic situation. Fifty-three percent of girls' mothers who agree with the statement are from the poorest families (the bottom two quintiles of family wealth), while only about 12 percent of those who agree with this statement are from the top quintile in family wealth. Patrilineal marriage structure influences mothers' attitudes on old-age support most among the poor.

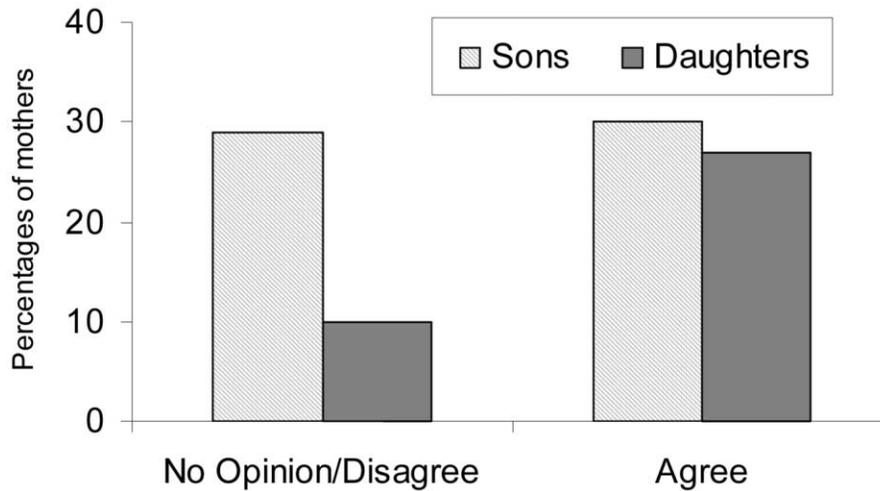


FIG. 1.—Percentage of mothers with college aspirations for child by attitude of mother toward women's potential. Difference in proportion between mothers of sons and mothers of daughters is significant at the .05 level by a *t*-test.

on sons for old-age support are associated with educational aspirations for children. Figure 2 displays mothers' college aspirations for children by response to the statement "It is no use educating daughters since they will marry out of the family" by child's gender. Although a majority of the mothers disagreed with this rather extreme statement, about one out of five of the mothers agreed with it. Mothers who disagreed with the statement were substantially more likely to have college aspirations for their daughters than mothers who agreed with the statement.

Figure 3 examines the relationship between mother's college aspirations for her child and her expectations for future economic return from all of her children. Mothers who expect more financial support from all of their children in the future have higher college aspirations for the sample children. Among mothers of boys who expect little aid from their children in the future, 28 percent hold college aspirations, as compared with 34 percent among mothers who expect more help in the future. For mothers of sampled girls, this difference is as large as 15 percent. Figure 3 shows that mother's educational aspirations are directly linked to expectations for financial support from all of her children in her old age; moreover, mothers' expectations for future support from children have more of an influence with regard to girls than boys.

Figure 4 links mothers' educational aspirations with children's math grade by child's gender. Mothers' college aspirations are closely tied to children's school achievement. However, in all achievement groups, there is a gender difference that favors boys. This gender gap is most striking among those mothers whose child has a math grade achievement of B. (Among this group,

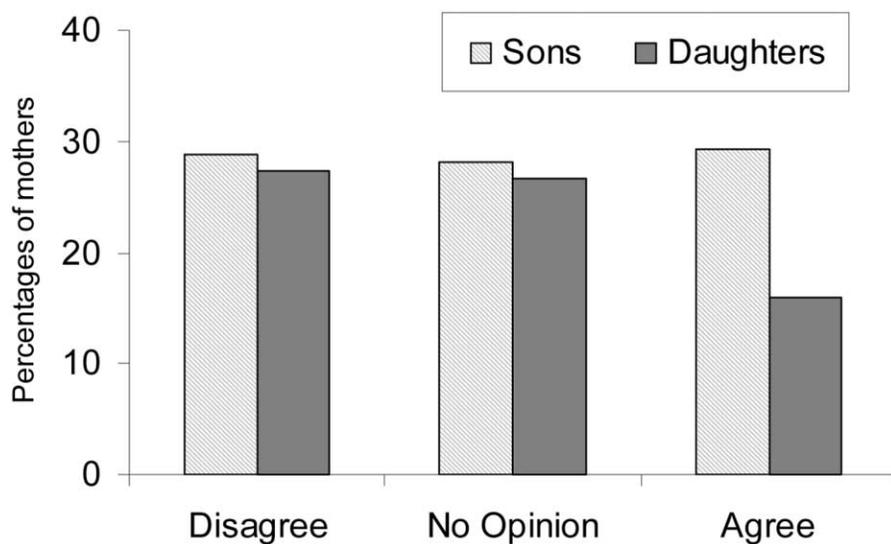


FIG. 2.—Percentage of mothers with college aspirations for child on view on “wastefulness” of daughter’s education. Difference between mothers of sons and mothers of daughters is significant at the .05 level by a χ^2 test. Difference in proportion agreeing is significant at the .05 level by a *t*-test.

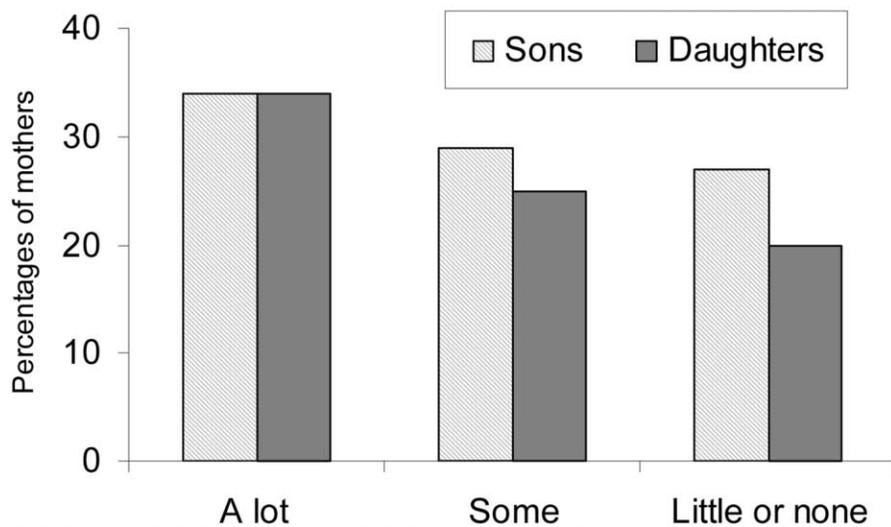


FIG. 3.—Percentage of mothers with college aspirations for child by expected future support. Difference between mothers of son and mothers of daughters is significant at the .05 level by a χ^2 test.

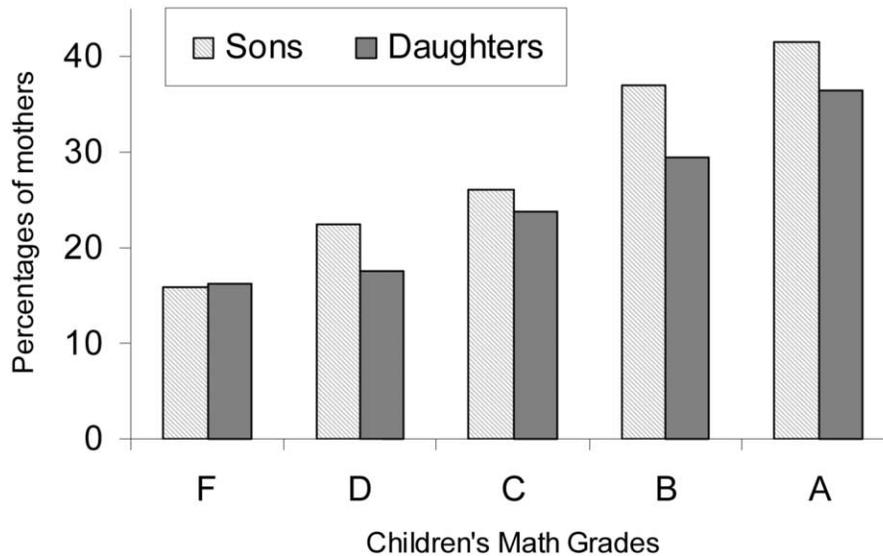


FIG. 4.—Percentage of mothers with college aspirations for child by child's school grade. Difference between mothers of sons and mothers of daughters is significant by a χ^2 test.

boys' mothers are significantly more likely to hold college aspirations for them as compared with girls' mothers.) When boys' achievement goes up from C to B, mothers' college aspiration goes up from 26 percent to 37 percent. However, there is only a 5 percent difference for girls between these two groups. Girls have to be in the very top group for their mothers to form similar educational aspirations as those for boys who are in the B group. Among the middle three achievement groups, which include 81 percent of all children in the sample, there is a significant gender difference in the mothers' educational aspirations in every group.

From the above discussion, we can see that mothers' attitudes on women's potential in society and the wastefulness of educating daughters, as well as mothers' anticipation of future returns from children, are all closely associated with mothers' educational aspirations for sample children. Those mothers whose attitudes are the least egalitarian exhibit the largest gender gap in their educational aspirations for their children. Mothers' educational aspirations are rational relative to the child's school achievement, but, at comparable performance levels, the mothers of sons report higher aspirations than do mothers of daughters.

Multivariate analysis.—Table 4 presents our results from logistic GEE analysis of mother's educational aspirations for her child. For this part of the analysis, we recode mother's aspirations into two categories: finish junior high

TABLE 4
LOGISTIC REGRESSIONS ON MOTHER'S' EDUCATIONAL ASPIRATIONS FOR CHILD (Odds Ratio)

	Model 1	Model 2	Model 3	Model 4	Boys	Girls
Child's individual characteristics:						
Female	.54*** (.11)	.53*** (.11)	.49*** (.11)	.50*** (.13)		
Age	1.05 (.05)	1.08 (.05)	1.09 (.06)	1.07 (.06)	1.15 (.08)	1.03 (.07)
Mother's gender attitudes:						
Gender equality factor		1.22*** (.06)	1.24*** (.06)	1.25*** (.06)	1.14 (.08)	1.33*** (.08)
Relying on sons:						
Disagree (reference)		. . . .	. . . .	. . . .	. . . .	. . . .
No opinion		1.53 (.24)	1.58 (.24)	1.5 (.24)	1.53 (.30)	1.62 (.29)
Agree		.75 (.18)	.76 (.18)	.79 (.18)	.6 (.27)	.90 (.18)
No use educating daughters:						
Disagree (reference)		. . . .	. . . .	. . . .	. . . .	. . . .
No opinion		.79 (.27)	.83 (.27)	.92 (.27)	.65 (.29)	1.1 (.33)
Agree		.76 (.19)	.77 (.19)	.82 (.19)	.98 (.30)	.73 (.23)
Returns from children:						
Little (reference)		. . . .	. . . .	. . . .	. . . .	. . . .
Some		1.62** (.16)	1.65** (.17)	1.63** (.17)	1.77** (.26)	1.60** (.23)
A lot		2.15*** (.22)	2.11*** (.22)	2.09*** (.23)	1.87** (.31)	2.35** (.30)
Returns to education		1.22 (.12)	1.20 (.12)	1.14 (.12)	.99 (.18)	1.28 (.16)
Children's promise in schooling:						
Child's engagement in school			1.44** (.12)	1.51** (.13)	1.95*** (.17)	1.20 (.17)
Math grade			1.024*** (.005)	1.022*** (.005)	1.029*** (.007)	1.025** (.007)
Family socioeconomic status:						
Mother's education				1.04** (.02)	1.07** (.03)	1.02 (.03)
Father absence				1.46 (.21)	1.83 (.33)	1.14 (.30)
Wealth:						
1st quintile (reference)				. . . .	. . . .	. . . .
2nd quintile				1.42 (.20)	1.45 (.25)	1.44 (.27)
3rd quintile				1.30 (.21)	1.29 (.29)	1.36 (.27)
4th quintile				1.70** (.20)	1.87** (.29)	1.60 (.26)
5th quintile				1.79** (.21)	1.88** (.27)	1.67 (.28)
Sibship composition:						
Elder brother				.93 (.14)	.86 (.22)	1.02 (.17)
Elder sister				.93 (.09)	1.06 (.12)	.75 (.16)
Younger brother				.96 (.15)	.72 (.21)	1.20 (.18)
Younger sister				.80 (.12)	.73 (.18)	.80 (.15)
Max-rescaled R^2	.03	.08	.13	.14	.17	.11
N	1,658	1,658	1,658	1,658	868	790

NOTE.—Standard errors are in parentheses.

** $p < .05$.

*** $p < .001$.

school or below and finish senior high school or above. All models control for the child's age.¹¹

Model 1 only includes a measure of the child's gender. There is a highly significant gender effect on mother's educational aspirations. Mothers of sons are 1.8 times as likely ($1/0.54$) as mothers of daughters to have higher educational aspirations for their child.

In Model 2, we add mothers' general gender attitudes, mothers' attitudes toward old-age support, and mothers' anticipation of future returns from children. Mothers' gender attitudes are significantly associated with mothers' educational aspirations. Each additional unit increase in the egalitarian gender attitudes scale is associated with a 22 percent increase in the odds of having higher educational aspirations. Mothers' aspirations are also closely tied with anticipation of future financial help from children. Mothers who expect a great deal of help from children are two times as likely to have higher aspirations for their sampled child as mothers who expect little future help from their children. These results support our first and third hypotheses that mothers' egalitarian gender attitudes and mothers' anticipation of a greater amount of future support are linked to higher educational aspirations for children.

We find that mothers' responses to whether parents should rely on sons for old-age support and whether educating girls is a waste are not significantly associated with mothers' aspirations for sample children. We also find that mothers' views on how future labor market returns from education differ for boys and girls are not significantly associated with mothers' educational aspirations for sample children. These results are in direct contrast to our hypotheses that mother's holding traditional norms on old-age support and mother's anticipation of gender discrimination in the labor market would be associated with educational aspirations for children.

Model 3 adds measures of mothers' evaluation of children's engagement in schooling and children's math grades from the previous semester. Mothers' evaluation of whether the child enjoys school is recoded into two categories: always enjoys school and sometimes or never enjoys school. Mothers who believe that the child always enjoys schooling are 1.4 times as likely to have higher aspirations as mothers who believe that the child does not. Children's school performance is a strong predictor of mothers' educational aspirations, as we have seen in the descriptive analysis (though, of course, causality could go in both directions). Mothers are 50 percent more likely to have higher aspirations if the child's grade increases by 20 points. Consistent with our hypotheses, we find that mothers are rational in forming their aspirations based on children's

¹¹ We also ran the same set of models on the subsample of households that have both boys and girls. The results are the same as those of the full sample as to the significance of variables and the pseudo *R*-square. However, in those households with both boys and girls, the impact of the child's school achievements on the mother's aspirations becomes stronger, especially for boys.

school achievement in the previous year. However, mothers' gender attitudes and mothers' expected future return from all of her children remain significantly associated with educational aspirations after controlling for children's engagement in schooling and children's achievement.

In the full model, we add family characteristics. Adding family background measures does not alter the patterns reported for earlier models. Thus, maternal attitudes and child's achievement are not simply proxies for socioeconomic status. Family background measures also have influences of their own. Mothers from families that are in the top two quintiles of family wealth have higher aspirations as compared with mothers from the poorest quintile, which is consistent with results from many previous studies showing that poverty is a major constraint for rural children's schooling. Those mothers with more education are more likely to have higher educational aspirations for their children.

Finally, we ran the full model separately for boys and girls. In the separate models, different factors influence a mother's aspirations for boys and for girls. First, mothers' attitudes matter for daughters but not for sons. For boys, mothers' gender attitudes in general are not significantly associated with mother's educational aspirations for children. For girls, mothers' gender attitudes are significantly linked to their educational aspirations for the child, controlling for other factors. This result further supports the cultural argument that gender attitudes independently influence girls' schooling.

Second, mothers' evaluation of the children's engagement in school also works differently for boys and girls. Boys' mothers who believe that their sons are engaged in school have twice the odds of having higher educational aspirations compared to boys' mothers who believe that their sons are not engaged in school. However, there is no comparable association for girls.

Our results also show that family wealth has no significant effect on mothers' aspirations for daughters. However, for those boys who come from families in the top two quintiles of family wealth, the odds of their mothers holding higher educational aspirations for them are significantly higher than for boys from the poorest families (those in the lowest wealth quintile), controlling for other factors. Mothers' education has a significant effect on mothers' aspirations for sons but not for aspirations for daughters, though many previous studies have concluded that mothers' education has a greater effect on a daughter's schooling. To further test this result, we repeated the analysis by putting in family characteristics first and then adding in mother's attitudinal measures (results not shown). Mothers' education was significantly associated with mothers' aspirations for daughters without attitudinal measures in the model. This effect disappeared when mothers' attitudes were added. This difference in the two model specifications suggests that the effect of mother's education on aspirations for daughter's educational attainment may emerge through mothers' gender attitudes and norms: mothers with

more education are less likely to hold on to traditional gender norms that are linked to lower educational aspirations. This is consistent with a previous finding that education has a strong empowerment effect for women (Shu 2004).

Whether or not children have brothers or sisters does not significantly influence mothers' educational aspirations in the boys' or girls' models, controlling for other factors. Finally, we note that our full model cannot fully account for gender differences in mother's educational aspirations: mothers of girls still have lower aspirations for the child than do mothers of boys. Further research is needed to identify additional factors that matter for maternal educational aspirations for children.

The final part of our analysis tests our hypothesis that mothers' educational aspirations influence children's actual school persistence, using longitudinal data from the GSCF. In 2000, when the first-wave data were collected, 98 percent of the children were enrolled. We use school persistence to refer to those children who were in school in 2000 and were still in school in 2004. A small number of children may have already finished junior high school in 2004, when the second wave of data was collected. Since the main goal of this article is to test the effect of the mother's gender attitudes and educational aspirations on her child's continuation of schooling, including senior high school, these children are included in the analysis. For this part of the analysis, we limited the sample to those children who were in school in 2000. After eliminating those with missing data, 1,574 cases are used.

The outcome variable for this part of the analysis is child's enrollment in 2004. We use mothers' educational aspirations from the first-wave data as the main predictor, along with children's school achievement and family characteristics from the first wave. All models control for children's age. Again, we run nested models for the whole sample and then run the full model separately for boys and girls. Since only about 5 percent of the mothers hold elementary school aspirations, we collapse junior high school and below into one category, and we use this as a reference category. The other two categories are for senior high school and college aspirations, respectively.

Table 5 presents the results of logistic regression on children's enrollment status. The first model includes only child's gender. There is a significant gender effect on children's school persistence. Boys are about 1.5 (1/0.68) times as likely as girls to stay in school when no other factors are considered other than their age.

Model 2 shows the result when mothers' aspirations is added into the model. The effect of mother's aspirations on child's school persistence is highly significant. If the mother holds senior high school aspirations or college aspirations, the odds for her child to stay in school are, respectively, 1.9 and 2.6 times those of children whose mothers only hold junior high

TABLE 5
LOGISTIC REGRESSION ON CHILDREN'S SCHOOLING STATUS (Odds Ratio)

	Model 1	Model 2	Model 3	Model 4	Boys	Girls
Child's individual characteristics:						
Female	.68** (.16)	.78 (.17)	.70** (.17)	.71 (.19)		
Age	.41*** (.09)	.38*** (.09)	.39*** (.09)	.38*** (.10)	.43*** (.14)	.34*** (.14)
Mother's aspirations:						
Junior high school or below (reference)						
Senior high school		1.92*** (.19)	2.17*** (.20)	2.06*** (.20)	2.24*** (.31)	2.13*** (.27)
College		2.60*** (.23)	2.29*** (.23)	2.14*** (.24)	2.48*** (.35)	2.13** (.33)
Child's school achievement:						
Math grade			1.023*** (.006)	1.023*** (.007)	1.010 (.009)	1.028*** (.010)
Family's socioeconomic status:						
Mother's education				1.07** (.03)	1.00 (.04)	1.15*** (.04)
Father absence				1.95 (.39)	1.06 (.52)	4.10** (.65)
Wealth (1st quintile is reference):						
2nd quintile				1.06 (.25)	1.6 (.35)	.70 (.37)
3rd quintile				1.29 (.26)	2.14** (.38)	.77 (.39)
4th quintile				1.72 (.28)	2.93*** (.41)	.9 (.40)
5th quintile				1.92** (.31)	4.70 *** (.49)	.77 (.44)
Sibship composition:						
Elder brother				1.16 (.21)	1.26 (.34)	1.18 (.28)
Elder sister				1.43** (.15)	1.55 (.23)	1.3 (.22)
Younger brother				1.00 (.20)	1.32 (.32)	1.12 (.28)
Younger sister				1.20 (.19)	1.23 (.33)	1.30 (.24)
Max-rescaled R^2	.15	.19	.20	.23	.20	.28
N	1,574	1,574	1,574	1,574	813	761

NOTE.—Standard errors are in parentheses.

** $p < .05$.

*** $p < .001$.

or below aspirations. When taking into consideration mothers' aspirations, children's gender no longer has a significant effect on school persistence.

In Model 3, we add child's school achievement. The effect of mothers' aspirations remains highly significant, with only slightly lower magnitudes. Child's previous math achievement is also a strong predictor of child's school persistence 4 years later. Children whose math grades are 20 points higher experience a 46 percent increase in the odds that they persist in school, as compared to their lower-achieving counterparts. Children's previous school achievement not only influences the mothers' aspirations for the child but also predicts the child's actual school persistence.

In the full model, we add in family characteristics, including mothers' education, fathers' absence, family wealth, and sibship structure. The strong effect of mother's aspirations remains. Mothers' education and being in the top two quintiles of family wealth have significant effects on children's school persistence. Having elder sisters in the family increases the odds of the child staying in school.

Finally, we ran the full model for boys and girls separately. The effect of mother's aspirations is similar for boys and girls. However, there are clear differences in other factors that influence school persistence for boys and girls. Boys' previous school achievements does not significantly predict future school attainment. For boys, family economic situation matters most. Compared to boys from the poorest families, boys in the wealthiest fifth of the sample are 4.7 times as likely to be in school, holding other factors constant. It seems that families keep their sons in school as long as they can afford to do so, regardless of their previous school achievement. The effect of having elder sisters on boys' school persistence is marginally significant ($p = .055$). Having one elder sister increases the boy's odds of staying in school by 55 percent. This may indirectly reflect the fact that those families who continue to have children until they have a son are more likely to keep the boy in school.

However, the situation for girls is just the opposite. Family economic situation, as measured by family wealth, has no effect on girls' school persistence. This finding runs counter to many previous findings that poverty has a negative effect on girls' schooling in rural settings. We checked our finding by rerunning the model for boys and girls separately with only measures of family wealth. The results are the same: family wealth alone does not directly predict a girl's school persistence.¹² However, absent fathers are associated with a dramatic increase in the odds of staying in school for girls, though this variable shows no significant effect on boys' school persistence. In our context, many of these fathers are migrant workers. An additional

¹² We further checked this finding by using measures of family expenditure; the results remained the same.

source of cash may be vital for paying school fees, and fathers may migrate with this need in mind.¹³

Mothers' education is another strong predictor of a girl's school persistence, though it has no significant effect on a boy's school persistence. This finding shows that mothers have a strong influence on their daughters' schooling, both through their aspirations for their daughters and through their own education. Besides mothers' influence, grades matter for whether girls stay in school. This is consistent with previous findings that girls have to show academic promise earlier in order to remain in school.

Another factor that influences a child's school persistence is the child's age. Children who are older are less likely to persist in school. This reflects the fact that in rural China, with almost universal enrollment at the primary school level, differences in school attainment along the lines of family socioeconomic situation and gender become more apparent as children age.

Conclusion

Summary

This article has investigated the prevalence of son preference in the mothers' educational aspirations for children and the impact of mothers' aspirations on children's school persistence, using a unique longitudinal survey from rural northwest China. Our findings suggest that mothers' gender attitudes are closely linked to educational aspirations for daughters. Gender bias in the mothers' aspirations is more pronounced among those mothers who hold traditional gender values. Moreover, mothers of boys respond more strongly to the child's engagement in school when forming their educational aspirations for the child than do mothers of girls. We find that mothers' educational aspirations for children conditions subsequent school persistence. Moreover, differences in maternal aspirations help explain gender differences in subsequent enrollment. For a boy, what matters most for his school persistence is the family's economic situation; in contrast, grades matter for girls. Girls benefit both from mothers' higher aspirations and from mothers' own education.

Discussion and Conclusions

Existing research on children's schooling in developing countries has focused on the outcomes of parental decisions: children's enrollment and attainment. Research on parental educational decisions for girls and boys has emphasized rational economic strategies for maximizing returns on in-

¹³ Usually fathers who do migrant work earn more money than fathers who stay at home, especially if this is the only source of cash income for the family. The extra cash income may make it possible for the family to pay school fees for the children. The results indicate that daughters may especially benefit from this. It may be the case that for a boy the family is willing to make extra efforts to keep the child in school even if there is no extra income (e.g., the family may borrow money), while a girl may be more likely to drop out of school if there is no such extra income.

vestments in children, as well as the disadvantage faced by girls in societies with patrilineal family structures. Using a case from rural Gansu China, this article examines the formation of educational plans of mothers and the effect of mothers' aspirations on their children's actual school persistence several years later. Our main findings suggest that mothers' attitudes about gender equality are closely tied to their educational aspirations for their children. Moreover, mothers' aspirations have a strong impact on their children's school persistence, controlling for other family characteristics.

These findings highlight the role of culture in conditioning rational strategies for families. A dominant patrilineal family structure links sons to their families of origin and serves as the social foundation for cultural norms, which, under economic constraints, make it less rational for families to invest in the education of daughters as compared with the education of sons. Consistent with this point, findings show that gender bias in aspirations is most pronounced among mothers who hold traditional gender values. While most mothers believe in the importance of education for their daughters' future, most are also concerned about their own future as senior citizens.

Mothers forming their educational aspirations for children also take into account the children's engagement at school and the children's school performance. However, the impact of a child's aptitude on maternal aspirations is different for girls and boys. Mothers hold higher aspirations for boys whom they think are engaged in schooling, but this is not the case for girls.

When it comes to actual school persistence, while both boys and girls benefit from the mother's high educational aspirations, boys benefit greatly from a family's better economic situation. Families are more forgiving of boys' performance at school. Regardless of their achievements, families keep boys in school so long as there are resources to do so. We were surprised to find that the family's economic situation does not directly affect girls' school persistence. Possible influences on a girl's school persistence, however, are the mother's own educational attainment and the mother's educational aspirations for her daughter.

Our finding that a girl's higher school achievement is important for predicting her later school persistence is consistent with the results of previous research (Brown and Park 2002; Zheng et al. 2002). However, scholars have not addressed how a mother's aspirations overall and egalitarian attitudes among mothers affect school persistence. Future researchers should explore whether the relationships between a mother's attitudes, her educational aspirations for her child, and the child's school persistence are similar in regions with higher levels of economic development. These results suggest the need for research on gender inequality in rural China (and possibly in other developing societies in Asia) to move beyond arguments that simply rely on poverty as an explanatory factor in understanding gender differences in educational outcomes.

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