



Examining rural maternal gender attitudes over time: Will she belong to another family, anyway?

Peggy Kong, Lehigh University, United States of America.

Yuping Zhang, Lehigh University, United States of America.

Corresponding author: pkong@lehigh.edu

Abstract

Over the last 60 years, egalitarian gender roles have been a prominent component of China's development plan. With changing social and economic policies, there is growing research in both urban and rural areas that suggests the weakening of traditional gender values. But, little research has been focused on examining the change of gender attitudes over time. Using Bourdieu's concept of cultural capital, this paper explores how maternal gender attitudes change over time and also the relationship between maternal gender attitudes and subsequent educational attainment for girls and boys. Drawing from the Gansu Survey of Children and Families (GSCF), a longitudinal survey of parents, teachers, children, principals, and village heads, we compare maternal perceptions of girls and boys in 2000 and 2004 and their children's educational attainment in 2009. Much of the literature in rural China suggests that traditional gender attitudes are static and reinforce traditional gender norms. Our findings suggest that maternal gender attitudes are not fixed and change over time. We find that maternal gender attitudes are not uniform and that there is a relationship between mothers who hold egalitarian gender attitudes and positive educational outcomes for girls.

Keywords: China, rural education, girls' education, gender, maternal attitudes, and educational outcomes

Introduction

China has made remarkable strides in educating girls and boys by realizing the Dakar Framework for Action (UNESCO, 2000) and the Millennium Development Goals (UNESCO, 2015) through increasing access to primary school (Goal 2) and eliminating gender disparities in primary and secondary (Goal 3). Since the promulgation of China's Compulsory Education Law of 1985, girls' access to education has improved in China, but the evidence of gender inequality in educational attainment has been uneven (Hannum & Xie, 1994; Zhou, Moen, & Tuma, 1998; Michelson & Parish, 2000; Hannum 2003, 2005; Connelly & v, 2003; Brown & Park, 2002; Song, Appleton, & Knight, 2006; Zeng, Pang, Zhang, Medina & Rozelle, 2014). Educational attainment is nearly universal for boys and girls at the primary level (Song et al, 2006). In 2014, primary enrollments were identical for boys and girls with net

enrollments for boys and girls both at 99.8 percent (The State Council Information Office of the People's Republic of China, 2015). At the junior high school level, girls comprise 46.7 of the student body and 50 percent at the high school level. A study of rural and urban children between 1990 and 2000, found that children in rural households are disadvantaged compared to children in urban households, especially rural girls (Wu, 2010). A recent meta-analysis of gender equality in China finds that gender inequality in educational attainment still exists in rural areas (Zeng et al, 2014). Gender inequality in education is influenced by culture, socioeconomic status, and by a nation's economic development status.

Much of the literature on gender and education suggest two main barriers to girls' access to education and attainment, home-based and school-based (Stromquist, 1990). These two explanations are often presented as separate and not related (Stromquist, 1990). These barriers are echoed in the education and social stratification research that suggests that the demand for education and the supply of education are the main factors related to educational disparities based on child gender (Buchmann & Hannum, 2001; Stromquist, 1989). Home-based explanations or demand side factors focus on the family factors that inhibit girls' schooling. These include parental attitudes, educational aspirations, a family's socioeconomic level, parental education, family structure and size, and cultural or religious beliefs. A family may consider a daughter's worthiness of receiving education, the returns to the family of educating a daughter, especially if the daughter will marry out and leave the birth family (Bowman & Anderson, 1980). Parental wealth is far more decisive for girls than for boys (Davis, Landry, Peng, & Xiao, 2007). Economists suggest that families may invest less in girls because girls are less likely to find employment and have a lower return to their education (Rosenzweig and Schultz, 1982). The school-based or supply-side barriers include the provision of a schooling environment, teacher attitudes, access to schooling, and quality of schooling experiences for girls and boys.

In the Indian context, Mukhopadhyay and Seymour (1994) identified a tension between education for girls and the preservation of social norms. These norms includes a patrifocal society rooted in rural society that structures family life and beliefs that preference men over women, family decision-making by men, and girls having obligations towards their birth families and their marriage families. The tension Mukhopadhyay and Seymour (1994) describe can be understood in the Chinese context, where educational opportunities for girls are situated within a patrifocal society. However, China as a nation has made great strides to combat the social and economic barriers facing disadvantage rural girls including both the supply of schools and also promoting policies to support gender equality.

In this paper, we take rural Gansu province as a case to investigate if and how maternal gender attitudes change over time and also the relationship between maternal gender attitudes and their children's subsequent educational attainment. Almost half of China's residents still live in rural areas and most urban migrants are from rural areas. Our study begins to disentangle patrilocal, patrilineal, and general gender attitudes to examine how these parental gender attitudes are transmitted to their children as cultural capital and how these attitudes and behaviors may be converted to higher educational attainment levels for girls and boys.

Role of girls and women in traditional rural China

China is a patriarchal society that follows patrilineal and patrilocality practices steeped in Confucian values, which define rural life and reinforce gender roles. The patrilineal system focuses on the male line of descent, which regulates an economic system rooted in inheritance for male descendants and not female descendants. At the same time, the system of patrilocality of marriage means girls leave their natal home and join their husband's home (Honig and Hershatter, 1988; Hooper, 1991). The role of women has been historically confined by patrilineal and patrilocality practices and defined by the Three Obediences: "as an unmarried girl a woman must obey her father and her brothers; as a married woman she must obey her husband; and as a widow she must obey her adult son" (Wolf, 1985). Sons are of the utmost importance because they maintain and carry on the familial lineage (Wolf, 1985). Rural life is ruled by these patriarchal practices and these familial and societal structures are seen as reinforcing attitudes and behaviors that preference a son over a daughter, however little research has been conducted on whether these gender attitudes have changed over time.

Patrilineal and patrilocal systems

Research on gender difference in education in China highlights traditional cultural norms as the root of gender differences in education for girls and boys. China's patrilineal structure rooted in a preference for sons account for these differences (Wolf 1985; Jacka 1997; Honig and Hershatter 1988). The patrilineal and patrilocal practices influence families to hold traditional values that preference sons over daughters, based on both conceived notions of the intrinsic abilities of the male and parental expectations for old age support (Wolf 1985; Honig and Hershatter 1988). There has been extensive fieldwork conducted on parental attitudes and beliefs; however, much of the data were collected in the 1980s and early 1990s (Wolf 1985; Honig and Hershatter 1988). Patrilocal co-residence patterns influence parental attitudes that discriminate against women and encourage parents to make different schooling decisions for their sons and daughters (Li & Tsang, 2003).

Based on the patrilineal and patrilocal systems of society, family survival strategies are contingent upon household economic resources that may disadvantage girls. In resource-constrained households, families may invest in education of their children based on returns to education for the family. In the Chinese context, decisions to advantage boys and send them to school over girls are based on the patrilineal and patrilocal traditional expectation that sons will provide old age support for their families and boys will have an advantage in the labor market over girls (Song et al, 2006). Investment in a son's education provides stability and security for rural families (Hannum, 2003; Li & Lavelly, 2003). Thus, families make the rational choice to preference their son's education over their daughter's education (Hannum & Adams, 2007). Additionally, if rural girls are still doing more of the domestic work in the home, their schooling may be viewed as having a higher opportunity cost (Song, et al, 2006).

A study of rural families in Gansu province found that family gender attitudes are complex and changing (Hannum, Kong, & Zhang, 2009). Few families believe girls are less capable or less worthy of investment in education and families invest similar levels towards education for girls and boys. In the home, girls are more frequently asked to perform household chores, but performing household chores is not associated with lower educational attainment. Rural parents expect future support

from their sons more than their daughters and perceive better returns to schooling for their sons' future earnings than their daughters' (ibid). However, there is limited research on parental gender attitudes over time. We address this gap in the literature by specifically examining parental expectations and gender attitudes at two points in time to understand if maternal gender attitudes and expectations differently impact girl and boy children.

Constraints on rural girls' educational opportunities

Scholars have found that family wealth, mother's educational level, and mother's educational expectations are important factors for the educational opportunities of girls. Family wealth is the most critical issue for girls (Davis et al, 2007) and girls' education is sensitive to household wealth, meaning more household wealth is related to positive educational outcomes for girls (Deng, Huang, Jin, & Sherraden, 2014; Hannum, 2003; Li and Tsang, 2003). Mothers are important for children's schooling, particularly for girls. Mother's education is associated with their children's higher school enrollment and higher household spending on education (Song et al., 2006). More educated mothers and fathers are associated with more egalitarian gender attitudes (Shu, 2004). Maternal educational aspirations are an important factor of children's educational attainment and a measure of parental investment in their children's education (Zhang, Kao, & Hannum, 2007). A study of four counties in Gansu and Hebei provinces found that parents in rural areas typically held higher educational expectations for their sons than their daughters (Li and Tsang, 2003). In this paper, we include these important factors to better understand dimensions beyond resources, traditional values, and family strategies.

China's role in changing gender inequality

The founding of the People's Republic of China in 1949 ushered in a socialist revolution that included combating patriarchy and upholding egalitarian gender ideals (Hu & Scott, 2016). During the Cultural Revolution and Great Leap Forward (1967-1977), Confucian ideals, particularly traditional values steeped in patriarchy were heavily criticized. More recently, the one-child policy of 1979, more strictly enforced in urban areas, has started to shift gender attitudes of old-age support for parents (Tsui & Rich, 2002). In the last forty years, as China has transitioned from a planned economy to a market-oriented economy, the household has become an important part of financing education. Some of the economic burden of financing education has shifted from the government to families. With the burden of schooling decisions falling to families and the need for parents to rely on sons for old age support, girls are caught in the tension described by Mukhopadhyay and Seymour (1994). At the same time, China has expanded educational access and improved opportunities for girls in both urban and rural areas. However, as part of decollectivization in rural areas, small village and township enterprises have emerged and offer economic opportunities for young women with limited education (Li, 2004). These opportunities offer temporary employment and may artificially inflate the opportunities available for young women until they marry, which could impact the perceived returns to schooling for girls. Equality of educational opportunities for girls and boys is part of China's

commitment and guarantee of equal rights and opportunities for girls and boys (The State Council Information Office of the People's Republic of China, 2015). Concepts about gender equality have been included in schools, teaching methods, teacher training, and some course offerings (The State Council Information Office of the People's Republic of China, 2015). Over the last 60 years, China has promoted gender equality and expanded educational opportunities for girls and women. However, there is still a gap in schooling opportunities between urban and rural areas and between girls and boys, although it is shrinking.

Theoretical Framework

Rural women are often blamed for continuing to reproduce traditional norms, but few studies investigate gender attitudes of rural women and whether rural women hold traditional son preference attitudes or if they hold more egalitarian attitudes. Our study focuses on mother's gender attitudes and whether these gender attitudes change over time. Then, we connect mother's gender attitudes with their children's educational outcomes.

Using Bourdieu's (1990) concept of cultural capital, which includes linguistic and cultural competencies, we investigate how mother's gender attitudes and educational expectations are related to the educational outcomes of their children. Maternal gender attitudes are important as they transmit cultural capital and shape the disposition (*habitus*) of their girl and boy children. Maternal gender attitudes can be understood as traditional, emphasizing a son preference, or egalitarian, not emphasizing a son preference. Then, when these maternal gender attitudes align with the linguistic and cultural competencies in schools and wider society the capital is legitimated. Given China's emphasis of gender equality in society and schools, maternal gender attitudes that are more egalitarian would align with these linguistic and cultural competencies of society.

Our research questions are: 1) Are there changes to maternal gender attitudes over time for girls and boys?; 2) Do these changes influence later educational attainment of boys and girls differently?; and 3) Is there a mediating effect of mother's educational expectation between changes in maternal gender attitudes and their children's later educational attainment?

We examine maternal gender attitudes, whether holding egalitarian or non-egalitarian attitudes, over time to understand how mother's gender attitudes influence the academic outcomes of their children. We examine general gender attitudes and then focus in on specific gender attitudes related to patrilocal and patrilineal gender attitudes.

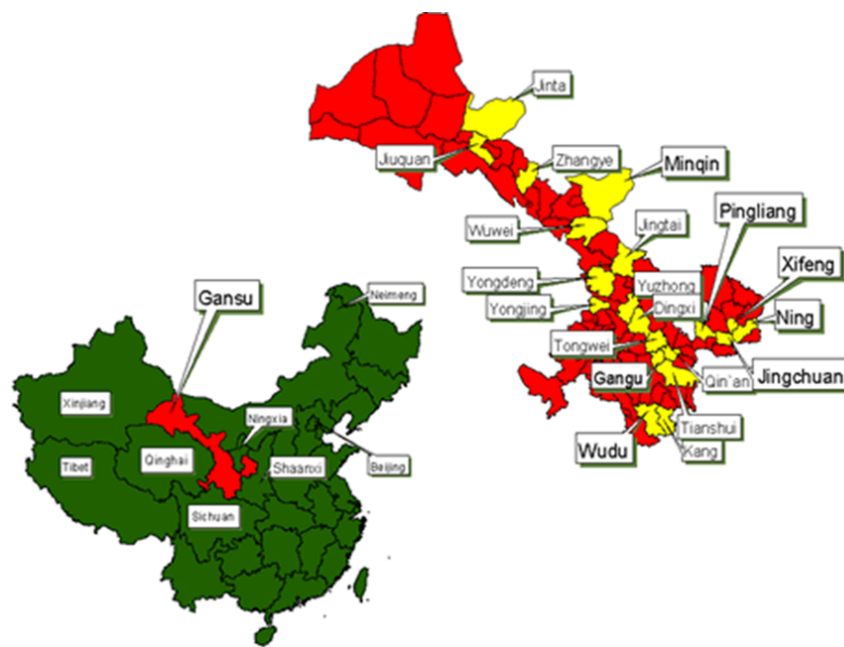
Data and Methods

Data

To examine the impact of maternal gender attitudes and changes over time, we draw our data from the Gansu Survey of Children and Families (GSCF). The GSCF is a longitudinal dataset that includes a representative sample of 2000 rural children in Gansu Province, China. The sample was drawn using

a multi-stage cluster design, with random selection at each level, from county, township to village. At the final stage, 20 children were sampled from each of the 100 selected villages, using the complete list of all children who were 9-12 years old in the village. The first wave of data was collected in year 2000, then 3 subsequent waves through 2009. There are also linkable secondary samples of sample children's mothers and their homeroom teachers. This study uses mostly data collected in 2000 and 2004 from the child, mother, and homeroom teacher questionnaires. The educational attainment is from 2009 sample child, now youth, questionnaire. Considering that our main goal is to investigate the impact of changes in maternal gender attitude on children's later educational attainment, we limit our analytical sample to those who were enrolled in school in wave 2 (2004) and participated in the 2009 survey. When the first wave of data was collected in 2000, almost all the sample children were in school. In wave 2 (2004), about 16% of the original sample had dropped out of school. After eliminating missing in all measures, 1530 cases are included in our analyses. Figure 1 presents the geographic location of the GSCF research site.

Figure 1. Map of Gansu Province China



Measures

Educational outcome

We use children's later educational attainment as our educational outcome measure. Children's later educational attainment is the total years of schooling attained by the target child in 2009. This

information is obtained from the GSCF 2009 youth questionnaire, which includes the youth's educational history up until 2009.

Maternal gender attitudes and changes over time

To examine patrilocal and patrilineal maternal gender attitudes, we focus on four aspects of mother's specific gender attitudes: their opinions related to their expectations of future support from their children (Parents should rely on sons for support in their old age; Sending girls to school is useless since they will get married and leave home); and their attitudes related to women's position at home (Important decisions at home should be made by men). To answer the above statements, mothers responded whether they disagree, have no opinion, or agree. We also use maternal responses to the question that taps into their opinions on gender discrimination in the labor market (Does education influence a son's future income more than a daughter's future income?). Mothers selected either agree or disagree to the above question. All the above items were included verbatim in both wave 1 and wave 2 of the mother questionnaires.

To answer the research question whether changes in earlier maternal gender attitudes may influence children's later educational attainment, we created a set of scales that measure the changes of maternal gender attitudes from wave 1 to wave 2. For each specific gender attitude measure described above, we created a change over time scale with 5 indicators: (1) holding least egalitarian attitude at both times; (2) becoming less egalitarian over time; (3) remaining neutral ("no opinion") at both times; (4) becoming more egalitarian over time; and (5) holding most egalitarian attitudes at both times. The scale for changes in maternal opinion about gender discrimination in the labor market has 4 indicators: (1) agree at both times; (2) change from disagree to agree; (3) change from agree to disagree; and (4) disagree at both times. The construction of the scales as such reflects the consideration that both the direction of change and the level at which mothers remain constant in their attitudes matter.

To fully capture mother's gender attitude, as China's efforts to promote gender equality, we also created a scale that reflects mother's attitude on general gender equality, using mothers' answers of whether they disagree, have no opinion, or agree with the following four statements: If they work hard, girls can do as well as boys in school; Girls should enjoy the same educational opportunities as boys; Given equal opportunities, women can achieve the same as men; and Parents should encourage girls to think as independently as boys. All the above items are included verbatim in both wave 1 and wave 2 of the mother questionnaires. The scale was created by adding mothers' answers together, one scale for each wave.

Maternal educational expectation

Maternal educational expectations were captured by maternal responses to the question "what is the highest level of schooling you think your child can attain?" There are four possible responses: to complete primary school, to complete junior high school, to complete senior high school, and to go to college or beyond. In our analyses, maternal educational expectations are translated into number of years to complete each level of schooling.

Family characteristics

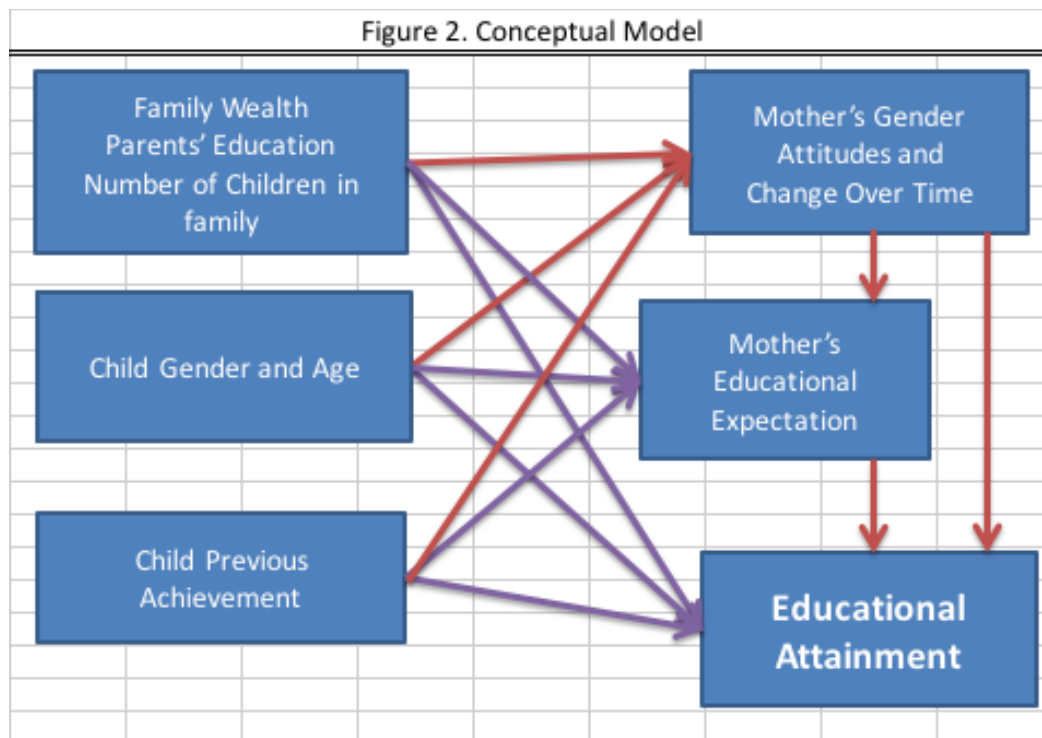
For family background, we use father's and mother's education level (years of formal schooling completed), family wealth, and total number of children in the family. Family wealth is the total value of all durable goods and equipment owned by the family. In rural settings, family wealth is a more stable measure of family economic situation than income, as most sample families are engaged in agriculture. In our multivariate analyses, logged term of family wealth is used.

Child characteristics

We include in our analyses child gender (with girls coded as 1, boys as 0) and child age. We also include children's academic achievement in wave 2, as measured by their end of semester grades in mathematics and Chinese. These grades are on a 100-point scale, as reported by the child's homeroom teacher.

Analytical Approach

We conduct our analyses in three steps. First, we provide descriptive analyses to reveal whether maternal gender attitudes change over time. Second, we use structural equation modeling (SEM) to test simultaneously (1) the influence of family and child characteristics on changes in maternal gender attitudes; (2) the impact of changes in maternal gender attitudes, together with family and child characteristics on children's later educational attainment; and (3) the mediating effect of maternal educational expectation between changes in gender attitudes and later attainment. The red arrows are the focus of this study while we also include the factors that are conventionally considered, as the purple arrows. Figure 2 presents our conceptual model for SEM analysis. Finally, we run a set of ordinary least squares (OLS) regression to separately test the impact of each scale of attitude changes on attainment. The interaction terms between child gender and maternal attitude change scales directly tests whether change in maternal gender attitudes may have different impacts on boys' and girls' later educational attainment. We use village random effect for all OLS models to take into consideration the village contextual factors.



Results

Descriptive Analysis

Table 1 presents descriptive child and family characteristic measures including educational outcomes by gender. In 2009, the year of the survey, all children in the sample should have at least completed senior high school. In our sample, children have on average about 10.6 years of schooling. Here we see the significant gender gap in educational attainment; with boys on average have about .26 years more schooling than girls. However, if we look at their early academic achievement, girls were doing as well as boys in math, and even outperform boys in Chinese language.

Girls comprise about 45% of our analytic sample. The average age of children in our sample is 15 years old in wave 2. Parents in rural Gansu have limited education themselves, with fathers having on average about 7 years of schooling, and only about 4 years for mothers. It is worth noticing that girls on average have significantly more siblings than boys. This may reflect a gender preference where rural families may have more children until they have a boy child.

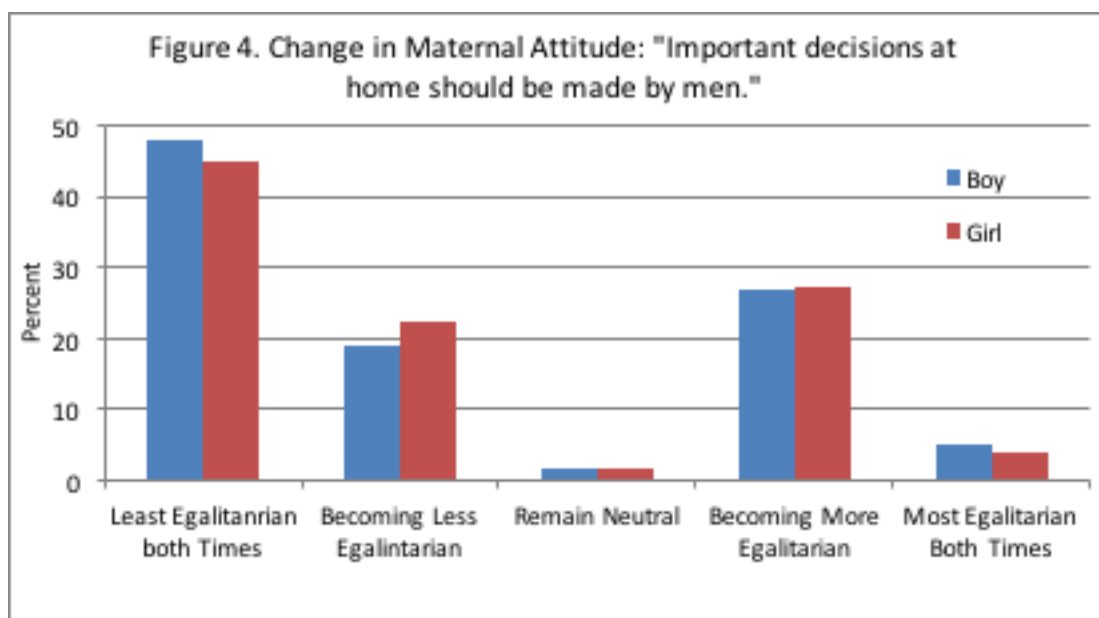
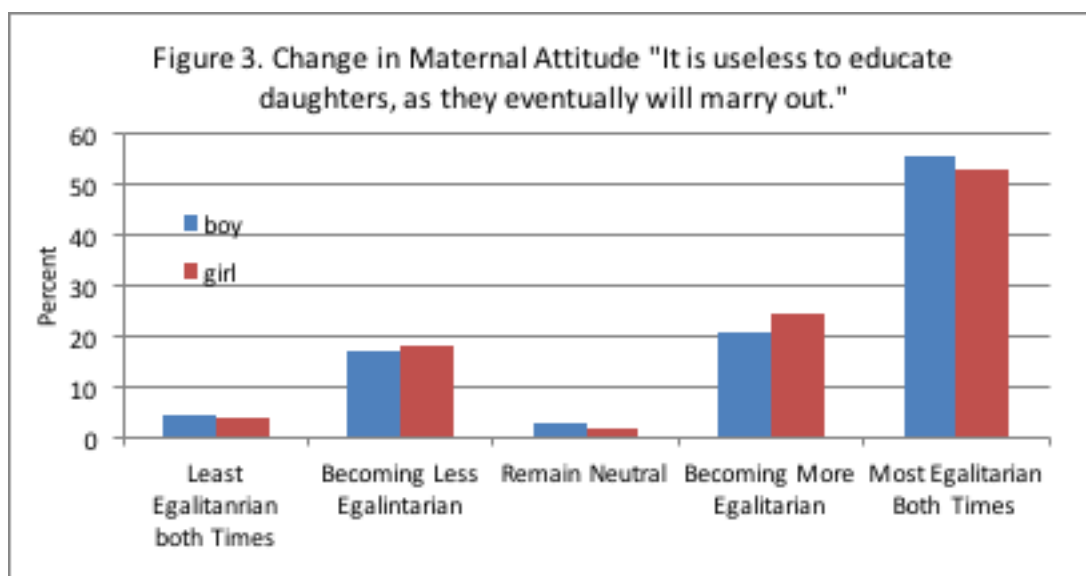
Table 1. Child and Family Background Characteristics by Gender				
	Total	Boy	Girl	
Girl (%)	44.71			
Educational Attainment (year)	10.596	10.760	10.393	***
	(2.097)	(2.066)	(2.118)	
Math Grade	72.262	72.248	72.281	
	(16.757)	(16.951)	(16.526)	
Chinese Grade	72.325	71.605	73.215	***
	(18.535)	(18.903)	(18.043)	
Age	14.950	14.982	14.911	
	(1.134)	(1.157)	(1.105)	
Family Wealth (Logged)	9.641	9.680	9.592	**
	(0.914)	(0.888)	(0.945)	
Father's Education	7.232	7.294	7.155	
	(3.441)	(3.358)	(3.543)	
Mother's Education	4.357	4.423	4.275	
	(3.470)	(3.492)	(3.445)	
Number of Children	2.328	2.228	2.452	***
	(0.701)	(0.652)	(0.739)	
Number of Observation	1530	846	684	

Table 2 includes descriptives of the maternal gender attitude scales and maternal educational expectations for their children in both 2000 and 2004. These general gender attitude scales range from 6 to 12 with mothers expressing very egalitarian attitudes on average. Mothers believe that boys and girls should have the same educational opportunities, girls are as capable as boys to do well in school, girls should think independently as boys do, and women's capability to achieve as much as men do in society given the same opportunities. There is no significant difference between mothers who belong to the generation that grew up during China's socialist period, when gender equality was very much emphasized in official media. Mothers' egalitarian responses to these general statements on gender equality may reflect how they were brought up. Maternal educational expectations have on average increased over time. On average, mothers expect their children to attain higher than a senior high school education. These high educational expectation levels may reflect the fact that most children have reached middle school therefore, parents are more confident that their children will continue onto higher levels of education. When examined by child gender, we see a difference in mothers' educational expectations between boys and girls. However, the significant gender difference still exists at wave 2, though the gap is smaller compared with that in wave 1.

Next, we examine in detail changes in mothers' responses to statements that are more closely related to their real concerns in real life living in a patrilocal and patrilineal community. Here we see more differences among mothers and changes over time.

Table 2. Maternal General Gender Attitude Scales and Educational Expectations				
	Total	Boy	Girl	
	Maternal General Gender Attitude Scales			
Wave 1	11.484	11.475	11.495	
	(1.007)	(1.006)	(1.009)	
Wave 2	11.456	11.476	11.431	
	(1.120)	(1.105)	(1.140)	
	Mother Educational Expectation			
Wave 1	12.142	12.378	11.849	***
	(2.797)	(2.714)	(2.873)	
Wave 2	13.303	13.455	13.116	***
	(2.623)	(2.579)	(2.666)	
Note: N=1530				

We present figures that show the changes of maternal attitudes over time by child gender. (The chi-square tests show that child gender is not significantly associated with changes in all measures of maternal gender attitudes.) Quite different from mothers' expression of egalitarian general gender attitudes, here we see more diverse answers and changes over time. Figure 3 shows the changes over time in mothers' responses to the statement about patrilocal practice, "it is useless to educate daughters, as they eventually will marry out." A little more than half of the mothers express their disagreement at both times to this rather extreme statement that reflects the traditional view, while only about 4% of mothers agree at both times. There are also changes in mothers' responses: about 20% of the mothers express more egalitarian responses at wave 2 than in wave 1; but another 18% of the mothers change in the opposite direction. However, mothers responded quite differently to the patrilineal statement "Important decisions at home should be made by men." Only less than 5% of all mothers disagree with such a statement at both time points, while almost half of them agree at both times. About 27% of the mothers become more egalitarian in their responses, while about 20% express less egalitarian attitudes. Overall, we can see in Figure 4 when it comes to women's position at home, many mothers still hold the traditional idea that a man should be the one who make decisions at home.



Figures 5 and 6 show changes in maternal gender attitudes about expectations of future support and their perceived labor market outcomes. Figure 5 illustrates changes in mothers' response to the statement that parents should rely on their sons for old-age support. At both time points, about 30% of mothers believe they should depend on their sons for old-age support, while only about 8% of the mothers disagree with this perspective. We also see many changes, a little more than 30% of the mothers express more egalitarian attitudes in wave 2 than in wave 1, while about 25% of the mothers change towards less egalitarian responses.

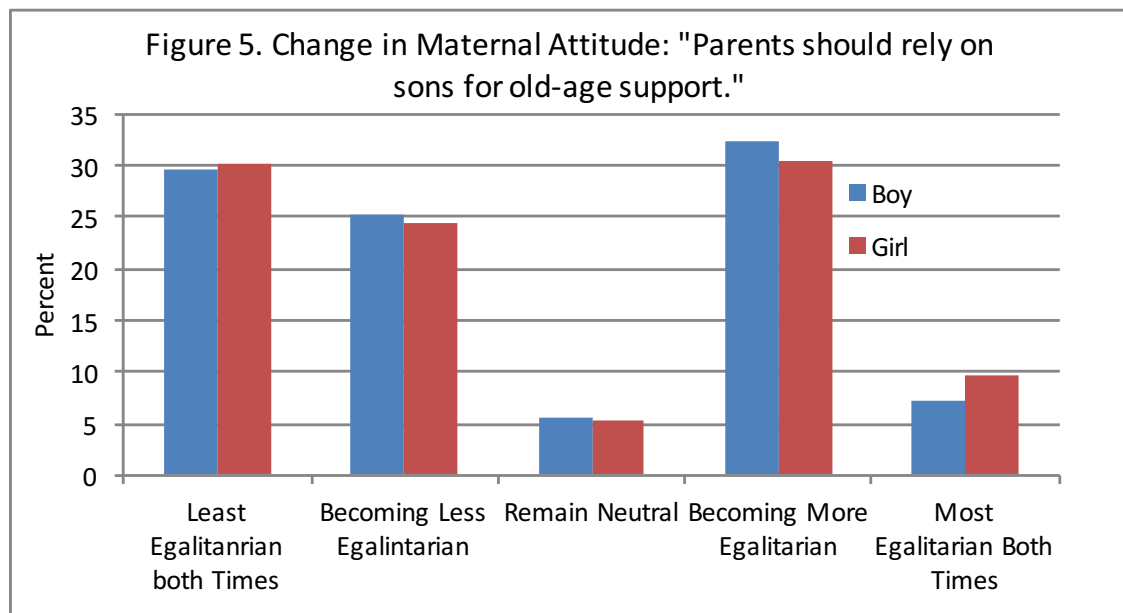
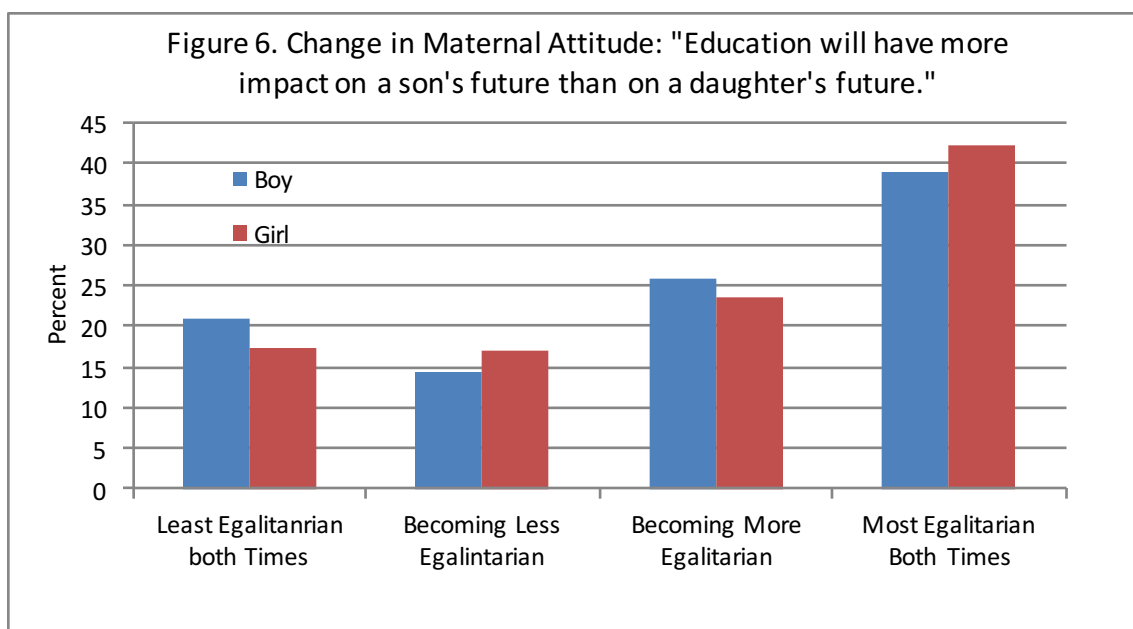


Figure 6 shows changes in how mothers perceive gender discrimination in the labor market by responding to the statement that education has more impact on sons' future income than daughters' future income. About 40% of mothers disagree with the above statement at both times. However, there are about 21% of boys' mothers and 17% of girls' mothers believe there is gender discrimination in the labor market at both times. From wave 1 to wave 2, about 25% of mothers changed their responses from agree to disagree, while another 15% of mothers changed in the opposite direction from disagree to agree.



The above descriptive results indicate that there are changes in maternal gender attitudes. Though on average mothers are holding egalitarian general gender attitudes at both time points, they have different opinions on some more specific measures. More mothers still hold onto the traditional norms grounded in patrilocal and patrilineal practices that one has to depend on a son for old age support, and that men should be the decision maker in the home. We also see that some mothers have changed their attitudes about these two measures over time. While some have abandoned the patriarchal notion, some have actually embraced more of the traditional gender attitude. It is also worth mentioning that these more conservative changes happen in maternal gender attitudes that relate to patrilineal and patrilocal practices over concerns of future support and their perceptions of returns to schooling in labor market. Thus, creating a tension for families on whether to support their daughters within the patrilineal and patrilocal structures.

Multivariate Analysis

SEM Model

Next we turn to multivariate analyses. Using SEM approach, we examine simultaneously factors associated with changes in mothers' gender attitudes, the impact of such changes on children's later educational attainment, as well as the mediating effect of mothers' educational expectations between the two. In the four equations with the attitude change scales as the endogenous variables, we include child and family characteristic measures. In the equation with mothers' educational expectations as the outcome, we also add in both waves of maternal general gender attitude scales. Finally, in the equation with child educational attainment as the outcome we also include mothers' educational expectations, along with all the other variables in the educational expectations equation. We allow the correlation among the error terms of all the endogenous variables. The specified model yields an almost perfect model fit, with CFI=1.000, TLI=1.000, and RMSEA=0.000. The model explains 32% of overall variance in the outcomes.

We present SEM analysis results in two tables. Table 3 presents the part where scales of change in maternal gender attitudes are the dependent variables in the models. In these models the independent variables include family wealth, parental education, number of children in family, child's gender, age, and their previous academic achievement. The results show that changes in mothers' gender attitudes are not associated with child gender. Across all four models, what is most striking is the impact of mothers' education level on their change of gender attitudes. Better-educated mothers are more likely to improve their gender attitudes over time or express egalitarian attitudes at both times. Father's education also shows a significant impact on mother's change on the scales about educating daughters and family decision-making. However, the magnitudes of mother and father's education on changes of mother's gender attitude are quite small. Number of children in family is negatively associated with changes in mother's attitudes, except in model 1.

Table 3. SEM Results (1): Change in Maternal Gender Attitude									
		Change in Attitude on Educating Daughters		Change in Attitude on Old-age Support		Change in Attitude on Decision Making at Home		Change in Attitude on Impact of Education for Child Future	
		Coef.	p.	Coef.	p.	Coef.	p.	Coef.	p.
Child Characteristics									
	Female	0.001	0.982	0.069	0.333	0.048	0.501	0.103	0.083
	Age	-0.024	0.404	-0.024	0.445	0.021	0.492	-0.028	0.272
	Math Grade	0.008	0.000	0.003	0.267	-0.003	0.172	0.003	0.160
	Chinese Grade	-0.001	0.491	0.000	0.832	0.001	0.566	0.001	0.586
Family Background									
	Father Education	0.045	0.000	0.010	0.345	0.010	0.369	0.017	0.064
	Mother Education	0.042	0.000	0.061	0.000	0.034	0.002	0.017	0.060
	Family Wealth (logged)	0.021	0.563	0.028	0.470	-0.008	0.844	0.013	0.695
	Number of Children	0.011	0.817	-0.162	0.002	-0.139	0.007	-0.098	0.021
Note: N=1530									

Next we present in Table 4 the second part of the SEM results, with mothers' educational expectations (Model 1) and children' later educational attainment (Model 2) as a dependent variable separately. We include in the models the four scales of changes in mothers' gender attitude as our main variable of interest. We also include family and child characteristic measures in the model. Finally, mothers' educational expectations are added to the attainment model.

Table 4. SEM Results (2): Mother's Educational Expectations and Child Attainment					
		Mother Expectation		Child Attainment	
		Coef.	p.	Coef.	p.
Mother Gender Attitude Change Scale					
	Educating Daughters	0.078	0.169	0.121	0.003
	Old Age Support	0.142	0.004	0.020	0.574
	Decision Making at Home	0.087	0.070	0.033	0.335
	Impact of Education on Child Future	0.005	0.929	0.031	0.450
Child Characteristics					
	Female	-0.267	0.040	-0.249	0.008
	Age	0.236	0.000	0.479	0.000
	Math Grade	0.017	0.000	0.013	0.000
	Chinese Grade	0.003	0.459	0.004	0.157
Family Background					
	Father Education	0.095	0.000	0.087	0.000
	Mother Education	0.035	0.089	0.079	0.000
	Family Wealth (logged)	0.253	0.000	0.225	0.000
	Number of Children	-0.134	0.151	-0.026	0.700
Mother's Educational Expectation				0.153	0.000
Note: N=1530					

From the results in model 1, we see that two measures of early changes in mothers' specific gender attitudes have significant positive association with mothers' educational expectations. Mothers have higher expectations for their children's schooling when they believe less in the notion that they have to depend on their sons for old age support or they become more egalitarian in their attitude concerning whether only men should make important decisions at home, controlling for their general gender attitude scales and family and children's characteristics. Consistent with previous research, wealthier and better educated parents have higher educational expectations. Also, mothers have higher expectations for children who have better grades in math. However, controlling for all measures in the model, mothers still express lower educational expectations for girls than for boys.

Finally, model 2 presents the results of the last step in the SEM model, with children's later educational attainment as the dependent variable. Children benefit significantly in their schooling when their mothers change and express egalitarian responses to the patrilocal notion that it is useless to educate daughters since they would eventually marry out. As in previous studies, mothers' early educational expectations is a strong predictor of children's later school attainment. This model indicates that changes in maternal gender attitudes influence children's later educational attainment directly, as well as indirectly through mother's educational expectations. This addresses our research question that mother's expectations does have a mediating effect between change in maternal gender attitudes and a child's later educational attainment. Children from families with better economic conditions and with better educated parents stay in school longer. Girls on average receive less schooling than boys, holding constant of all other factors in the model.

OLS Model

In order to further test the impact of early changes in mothers' gender attitudes on their children's later educational attainment, we ran a set of OLS models, with each of the change scales included in a separate model. To answer the question whether changes in mothers' attitude have different impacts for boys' and girls' educational attainment, we include in each model an interaction term of the change scale and child gender. All models include all the measures of child characteristics and family background, similar to the SEM educational attainment model. Considering that village contextual factors may influence children's schooling, we use village random effect for all OLS models. The results are presented in Table 5.

Model 1 includes the maternal gender attitude scale that measures the changes in mothers' attitude towards the notion that it is useless to educate daughters since they would eventually marry out. Boys benefit significantly when their mothers' responses improve over time, and girls benefit in the same manner. In this model, we do not see gender difference in educational attainment when holding all other measures constant. After all, only about four percent of mothers agree with such an extreme statement at both time points.

Model 2 tests the changes in mothers' attitude regarding patrilineal practice, by focusing on who should make important decisions at home. Among children with mothers who believe that only men should make decisions at both times, girls receive on average about half a year less schooling than boys, and this gender difference is significant. Changes in mothers' gender attitude has no effect on boys' later schooling, while it shows a positive impact on girls' education as mothers' attitude become more egalitarian (significant at the 0.1 level).

Model 3 tests the impact of changes in mothers' attitude about expected returns to girls' and boys' schooling. Here we see the same pattern as in model 2. Changes in mothers' attitude have no effect on boys' schooling, while it has positive impact on girls' education, though it is only marginally significant. Among children whose mothers believe at both times that returns from education for girls is less than boys in the future labor market, girls receive almost 0.7 year less schooling than boys. Model 4 shows the effect of maternal gender attitude about whether they should rely on their sons for old age support. Again, changes in mothers' gender attitude do not show significant effect for children. The negative impact is mostly among children with mothers who believe they should depend on their sons for future support at both time points. Among these children, girls have on average half a year less schooling than boys.

Table 5. Educational Attainment: Village Random Effects					
		(1)	(2)	(3)	(4)
Girl		-0.327	-0.490***	-0.668***	-0.447**
		(-1.032)	(-2.745)	(-2.607)	(-2.222)
Maternal Gender Attitude Change Scale					
	Girls would marry out	0.112**			
		(2.128)			
	Men should make decisions		0.000		
			(0.010)		
	Education impact sons' future more than daughters'			0.006	
				(0.114)	
	One depends on son for old-age support				0.028
					(0.607)
Girl*Change Scale		0.021	0.115*	0.148*	0.079
		(0.288)	(1.693)	(1.795)	(1.180)
Maternal General Gender Attitudes					
		-0.019	0.021	0.013	0.018
		(-0.415)	(0.464)	(0.301)	(0.409)
Note: *** p<0.01, ** p<0.05, * p<0.1					
Models also control for child characteristics and family background					

These OLS models clearly show that gender differences in educational attainment are more severe among children who have mothers that hold the least egalitarian attitudes at both time points, as indicated by the significant negative coefficients of the main gender effects. Girls do benefit from the improvement of their mothers' gender attitudes, especially when it comes to maternal beliefs about decision making at home, and their understanding of female disadvantage in returns to schooling in the future labor market. The results also echo the same pattern as in the SEM attainment model that children benefit from better economic conditions, better educated parents, mothers who hold higher educational expectations, and better early achievement in school.

Conclusion and Discussion

China is an interesting case for investigating how gender attitudes can change, as China has promoted gender equality in policies for nearly sixty years and recently expanded educational access for girls and boys. However, educational barriers still exist between urban and rural areas. With roughly 50% of families still residing in rural areas where patrilineal and patrilocal structures exist, this study offers insight into changing maternal gender attitudes and cultural capital in the home for children. We examine general maternal gender attitudes as well as maternal gender attitudes related to patrilocal and patrilineal practices to understand if maternal gender attitudes change over time. Moreover, we link maternal gender attitudes with children's subsequent educational attainment.

We find that over time, general maternal gender attitudes about girls having equal educational and work opportunities as boys, supporting girls as independent thinkers, and the capability of girls become more egalitarian with little difference between boys and girls. When we move to more specific maternal gender attitudes focused on patrilineal and patrilocal systems we find that

maternal gender attitudes become both more egalitarian in both times and less egalitarian in both times. Over 50% of mothers express egalitarian attitudes regarding patrilocal practice of girls marrying out of their natal family, meaning that these mothers support girls' education, even though they will marry out. When it comes to decision making in the home, reflecting patrilineal practices, nearly 50% of mothers believe men should make decisions in the home in both time periods. When it comes to provision of old-age support by sons, nearly 30% of mothers in both time periods believe they should rely on sons. However, nearly 30% of mothers in both time periods became more egalitarian in their outlook, but also nearly 25% became less egalitarian. Unfortunately, we do not know what prompts the direction of the change. Finally, in terms of the returns to education for girls and boys, over 55% of mothers either became more egalitarian or held egalitarian attitudes in both time periods.

Maternal gender attitudes that are part of mother's everyday lives and tied to patrilineal and patrilocal society remain strong. Both girls and boys benefit with improved maternal attitudes towards educating girls, even though they will marry out. The patrilineal and patrilocal maternal gender attitudes regarding the importance of son's providing old-age support and that men should make important decisions in the home disadvantages girls. Girls who have mothers who believe they need to depend on boys for old age support receive on average half a year less of schooling than boys. Similarly, daughters of mothers that believe that men can only make decisions at both points in time receive on average half a year less schooling than boys. The mediating effect of maternal gender attitudes on children's educational attainment is important.

In resource-constrained rural environments, family education level, family wealth and maternal educational expectations play an important role in children's educational attainment. Similar to Shu (2004), we find the importance of mother's educational level for children's subsequent educational attainment. However, mothers still express lower educational expectations for girls than boys in 2004. For girls, having a mother who expresses more egalitarian gender attitudes and high educational expectations is very beneficial to their future educational attainment. Future studies could consider interventions to improve maternal educational expectations, including the impact on both their boy and girl children. Few resources are needed to hold high educational expectations.

Our study draws from longitudinal data and finds that maternal gender attitudes change over time. This is an important finding that suggests that rural maternal gender attitudes are not fixed and disrupts the uniform conception that all rural mothers have the same traditional gender attitudes. However, we do not know what prompts the change in maternal gender attitudes and suggest future studies investigate this aspect of maternal gender attitudes. In addition, our findings suggest that mothers express overall egalitarian general attitudes over time. Given China's efforts to promote gender equality over the last 60 years, our findings suggest mothers who hold egalitarian gender attitudes may raise children with the cultural capital that aligns with societal gender values.

Maternal gender attitudes and educational expectations are important in supporting the educational outcomes for girls. By closely examining maternal gender attitudes that are rooted in patrilocal and patrilineal practices, we find that maternal gender attitudes have different impacts for girls and boys. Girls of parents who hold more egalitarian attitudes perform better, suggesting that maternal

gender attitudes may be a home cultural capital that aligns with societal norms. Mothers who believe that men should make the decisions in the home and that sons are needed for old-age support disadvantages girls' later educational attainment. At the same time, we find that mother's educational expectations can mediate maternal gender attitudes and children's subsequent educational attainment. For girls, this is important because mothers who hold less egalitarian attitudes, but high educational expectations can positively impact their daughter's educational attainment. Further study into how to change maternal gender attitudes is needed, but could be a powerful non-resource heavy way to improve girls' educational opportunities. At the same time, we acknowledge the tension that exists for families, the desire to support the education of their girl children, but also being constrained by incentives that advantage boys. Finally, our findings suggest that patrilineal and patrilocal practices continue to challenge the educational opportunities for girls, as they will belong to another family anyway. Given the entrenched patriarchy system in China, the changing maternal gender attitudes is definitely a positive change for rural girls and women. However, patrilineal and patrilocal practices disadvantage girls' education and will need to be addressed directly.

References

- Bourdieu, P. (1990). *In other words: Essays towards a reflexive sociology*. Cambridge, UK: Polity Press.
- Bowman, M. J., & Anderson, C.A. (1980). The participation of women in education in the Third World. *Comparative and International Education*, 24(2), 513-532.
- Brown, P., & Park, A. (2002). Education and poverty in rural China. *Economics of Education Review*, 21(6), 523-541.
- Buchmann, C., & Hannum, E. (2001). Education and stratification in development countries: A review of theories and research. *Annual Review of Sociology*, 27, 77-102.
- Connelly, R., & Zheng, Z. (2003). Determinants of school enrollment and completion of 10 to 18 year olds in China. *Economics of Education Review*, 22, 379-88.
- Davis, D., Landry, P., Peng, Y., & Xiao, J. (2007). Gendered pathways to rural schooling: The interplay of wealth and local institutions. *The China Quarterly*, 189, 60-82.
- Deng, S., Huang, J., Jin, M., & Sherraden, M. (2014). Household assets, school enrollment, and parental aspirations for children's education in rural China: Does gender matter? *International Journal of Social Welfare*, 23, 185-194.
- Hannum, E. (2003). Poverty and basic education in rural China: Communities, households, and girls' and boys' enrollment. *Comparative Education Review*, 47(2), 141-159.
- Hannum, E. (2005). Market transition, educational disparities, and family strategies in rural China: New evidence on gender stratification and development. *Demography*, 42(2), 275-299.
- Hannum, E., & Adams, J. (2007). Girls in Gansu, China: Expectations and aspiration for secondary schooling. In M. Lewis & M. Lockheed (eds.), *Exclusion, gender, and education: Case studies from the developing world* (pp.71-98). Washington, DC: Center for Global Development.

- Hannum, E., Kong, P., & Zhang, Y. (2009). Family source of educational gender inequality in rural China: A critical assessment. *International Journal of Educational Development*, 29, 474-486.
- Hannum, E., & Xie, Y. (1994). Trends in educational gender inequality in China: 1949-1985. *Research in Social Stratification and Mobility*, 13, 73-98.
- Honig, E., & Hershatter, G. (1988). *Personal voices: Chinese women in the 1980's*. Palo Alto, CA: Stanford University Press.
- Hooper, B. (1991). Gender and education. In I. Epstein (ed.), *Chinese education problems, policies, and prospects* (pp.352-374). New York, NY: Garland.
- Hu, Y., & Scott, J. (2016). Family and gender values in China: Generational, geographic, and gender differences. *Journal of Family Issues*, 37(9), 1267-1293.
- Jacka, T. (1997). *Women's work in rural China: Change and continuity in an era of reform*. Cambridge, UK: Cambridge University Press.
- Li, J., & Lavelly, W. (2003). Village context, women's status, and son preference among rural Chinese women. *Rural Sociology*, 68, 87-106.
- Li, D. (2004). Gender inequality in education in rural China. In Jie, T., Zheng, B.J., & Mow, S. (ed.), *Holding up half the sky: Chinese women past, present, and future*. New York, NY: Feminist Press.
- Li, D., & Tsang, M.C. (2003). Household decisions and gender inequality in education in rural China. *China: An International Journal*, 1(2), 224-248.
- Michelson, E., & William P. (2000). Gender differentials in economic success: Rural China in 1991. In B. Entwisle & G. Henderson (eds.), *Re-drawing boundaries: Work, households, and gender in China* (pp.134-156). Berkeley, CA: University of California Press.
- Mukhopadhyay, C. C., & Seymour, S. (1994). *Women, education, and family structure in India*. New Delhi, India: India Institute of Social Sciences.
- Rosenzweig, M., & Schultz, T.P. (1982). Market opportunities, genetic endowments and intra-family resource distribution: Child survival in rural India. *American Economic Review*, 72(4), 803-815.
- Shu, X. (2004). Education and gender egalitarianism: The case of China. *Sociology of Education*, 77, 311-336.
- Song, L., Appleton, S., & Knight, J. (2006). Why do girls in rural China have lower school enrollment? *World Development*, 34(9), 1639-1653.
- Stromquist, N. (1989). Determinants of educational participation and achievement of women in the third world: A review of the evidence and a theoretical critique. *Review of Educational Research*, 59, 143-183.
- Stromquist, N. (1990). Gender inequality in education: Accounting for women's subordination. *British Journal of Sociology of Education*, 11(2), 137-153.
- The State Council Information Office of the People's Republic of China (2015). *Gender equality and women's development in China* [White paper]. Retrieved (07/18/18), from (<http://www.scio.gov.cn/zfbps/ndhf/2015/Document/1449894/1449894.htm>)
- Tsui, M., & Rich, L. (2002). The only child and educational opportunity for girls in urban China. *Gender and Society*, 16(1): 74-92.
- UNESCO. (2000). *Dakar Framework for Action*. UNESCO, Paris.
- UNESCO. (2015). *The Millennium Development Goals Report 2015*. UNESCO, Paris.

- Wolf, M. (1985). *Revolution postponed: Women in contemporary China*. Palo Alto, CA: Stanford University Press.
- Wu, X. (2010). Economic transition, school expansion, and educational inequality in China, 1990-2000. *Research in Social Stratification and Mobility*, 28, 91-108.
- Zeng, J., Pang, X., Zhang, L., Medina, A., & Rozelle, S. (2014). Gender inequality in education in China: A meta-regression analysis. *Contemporary Economic Policy*, 32(3), 474-491.
- Zhang, Y., Kao, G., & Hannum, E. (2007). Do mothers in rural China practice gender equality in educational aspirations for their children? *Comparative Education Review*, 51(2), 131-157.
- Zhou, X., Moen, P., & Tuma, N. B. (1998). Educational stratification in urban China: 1949-1994. *Sociology of Education*, 71(3), 199-222.