LIKE MOTHER LIKE DAUGHTER: MOTHERS' EDUCATION AND INVESTMENT IN DAUGHTERS' EDUCATION IN INDIA

By

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ABSTRACT OF THE DISSERTATION

Like mother like daughter: Mothers' education and investment in daughters' education in India

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Despite years of educational reform and significant increases in overall school enrollment and literacy rates, a substantial gender gap in educational attainment persists in India. One of the biggest obstacles to girls' participation in education is the persistence of gender-based discrimination in parental investment in education. Prior research on the gender gap in parental investment has focused on the description of this social problem. Few studies have examined the role of mothers' education, employment, or pathways between these factors and investment in children's education. Maternal education, which provides women with greater autonomy and decision-making power in the household may be a potential tool to reduce this gender gap. The current study uses two waves of the India Human Development Survey (IHDS) to explore the associations between mothers' education and employment, and investment in children's education, and the pathways through which these relationships may operate. Investment in children's

education is operationalized based on two constructs: children's enrollment in school, and conditional on enrollment, expenditures on children's education. The role of two pathways were explored: mothers' decision-making power and mothers' beliefs in egalitarian gender norms. The current study also investigates whether the relationship between mothers' education and employment, and investment in children's education, differs by child gender, caste, religion, consumption per capita, community beliefs regarding interpersonal violence, and statewide measures of gender empowerment and gender development.

Results indicate that mothers' education is positively associated with children's enrollment in school. Mothers' secondary or higher education is also positively associated with conditional expenditures on children's education. For girls, mothers' higher education was more beneficial for enrollment, whereas for boys, mothers' higher education was more beneficial for conditional expenditures. Neither mothers' decision-making power, nor mothers' beliefs in egalitarian gender norms mediated the associations between mothers' education and employment and investment in children's education. Regional levels of gender equity strengthened the positive relationship between mothers' education and conditional expenditures on girls' education. For enrollment, mothers' education had a larger impact in houses with low consumption whereas for conditional expenditures, mothers' education was more advantageous in households with high rates of consumption. Lastly, children from more disadvantaged religions and castes gained more from their mothers' education than Hindu and upper caste children.

Findings indicate that although mothers' education is beneficial for children's schooling, increases in mothers' education alone cannot transform gender inequalities in conditional expenditures. A public education system that provides tuition-free, quality education, may be most effective in increasing girls' access to quality education. Because parents need to be incentivized to send their girls to school, the current amount of government assistance in education needs to be increased. There is also a need for holistic policy solutions that provide general cash assistance to needy families, target women's employment, and increase social security for older adults to address existing inequalities in parental investment in children's education.

Acknowledgment

I would like to thank all my committee members for supporting me throughout this process and providing me with invaluable guidance. I thank Dr. Nepomnyaschy for always being there for me, encouraging me, and providing feedback on the innumerable drafts of the thesis. This dissertation utilized data from the India Human Development Survey (IHDS). I thank all the individuals who chose to participate in the IHDS surveys. I want to express my gratitude to the IHDS team for creating this valuable resource.

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Chapter 1: Introduction

Motivation

The Indian education system is marked by persistent gender-based inequalities. Although the gap between male and female literacy has decreased from 25 percentage points in 1991 to 17 in 2011, the gender gap continues to be substantial (Ministry of Statistics and Program Implementation, 2017). Despite the recognition of education as a means to achieving larger goals of gender equality and empowerment in both national and international policy documents, the gender gap in education continues to remain a challenge. One of the biggest obstacles to ensuring girls' participation in education is the persistence of norms and ideologies of son preference that leads to gender discrimination in parental investment in education.

Gender discrimination in parental investment in education can occur at two different levels, that of enrolling or retaining a child in school, and conditional on enrollment, the amount of resources that are spent on the education of boys and girls (Azam & Kingdon, 2013). Enrollment alone is not sufficient; parents need to be willing to spend on their child's education to ensure that children get access to quality education. Even when children are enrolled, parents are more likely to pay for private schooling, tuition, and school materials for sons than daughters (Azam & Kingdon, 2013; Kaul, 2018; Saha, 2013; Zimmermann, 2012). In 2007-08, on average, parents spent 25% more on boys' education as compared to girls' education (Saha, 2013). This kind of gender discrimination is in turn reflected in the gap in youth literacy rates, 88% for boys, and 74% for girls, aged 15-24 years in 2008-2012 (UNICEF, 2015).

One way to improve investment in children's, especially girls' education might be through increases in mothers' education and employment. Prior studies have found that improvement in mothers' education, particularly, is associated with increased expenditures on child-focused items (Duncan, 1994) and improvement in children's health and well-being (Vikram, Vanneman, & Desai, 2012). The theory of empowerment further suggests that a mother's increased education and employment may increase her decision-making power in the household, which may allow her to negotiate for more investment in her children's, particularly in daughters' education (Kabeer, 2000b). Based on this framework, we expect that improvements in mothers' status, through their education and employment would lead to increases in investments in children's, especially girls' education, thereby reducing disparities in such investment by child gender. In addition, there is evidence that increased education and employment among mothers changes their beliefs in traditional gender norms (Bryant, 2003; Davis & Greenstein, 2009). Thus, I hypothesize that mothers' education and employment will improve investment in children's, particularly daughters' education, through two potential pathways, either through an increase in mothers' decision-making power in the household, or through an increase in mothers' beliefs in egalitarian gender norms.

While a vast body of work has documented the positive impact of mothers' education on children's health (see Vikram, Vanneman, & Desai, 2012; Chakraborty & Anderson, 2011, in India), few studies have examined associations between mothers' education and investment in children's education. Research on the relationship between mothers' employment and children's school enrollment has been inconclusive

(Kambhampati, 2009; Sundaram, & Vanneman, 2008; Kingdon, 2005), and none has investigated the impact of mothers' employment on conditional expenditures on children's education. Thus, there is little understanding or consensus about the associations of mothers' education and employment and investment in children's education or how these associations may operate. My research aims to address these gaps in the literature by: examining the association between mothers' education and employment and investment in children's, particularly girls' education, and the pathways through which these relationships may operate. In addition, because educational gaps increase as children age and because education becomes more expensive as children age, I will also examine these associations by child age. Further, to account for the role of regional, societal and community norms, I will examine whether these associations differ by community gender norms, regional gender equity levels, per capita household consumption, caste, and religion. This dissertation will contribute to our understanding of gender-based discrimination in educational investment to help improve girls' access to quality education and reduce gender-based gaps in education in India.

Research Questions

This dissertation seeks to answer three research questions:

1. What is the association between mother's education and employment and parental investment in children's education?
    a. Do these associations differ by child gender and by child gender and age?

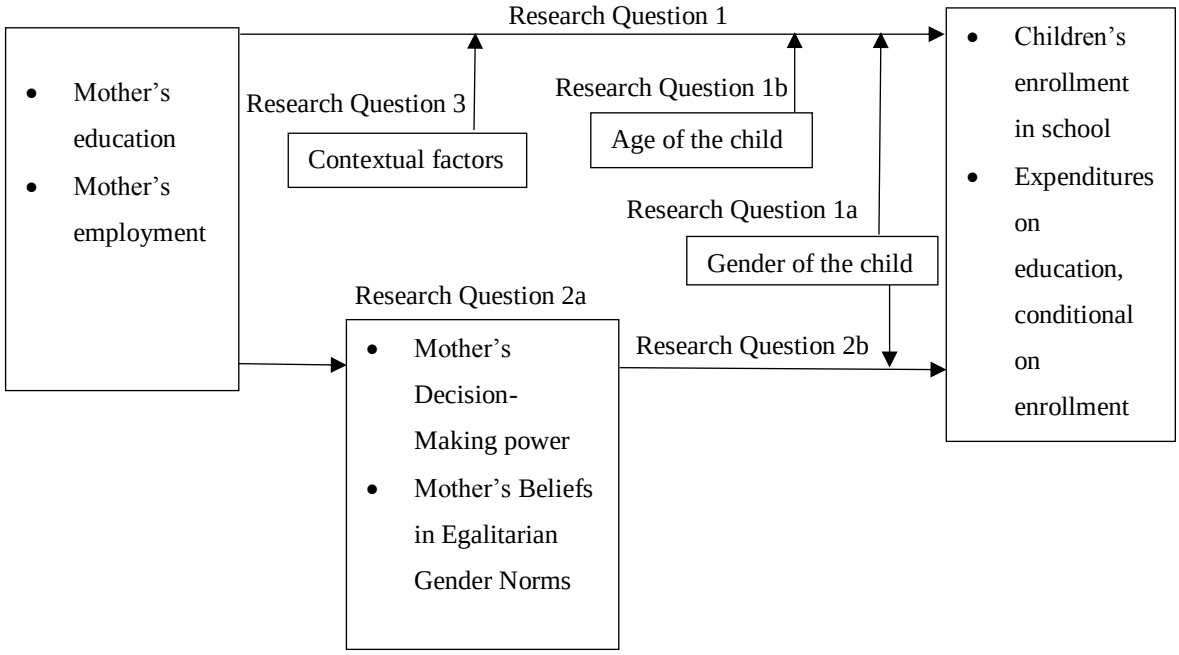
2. Through what pathways might the association between mothers' education and employment and investment in children's education operate? Hypothesized pathways include mothers' decision-making power and beliefs in egalitarian gender norms.

    a. Are mother's decision-making power and beliefs in egalitarian gender norms associated with investment in children's education?

    b. Do these relationships differ by gender of the child?

3. How do contextual factors influence the relationship between mother's education and employment and investment in children's education?

Figure 1: Research Questions



Snapshot of Education in India

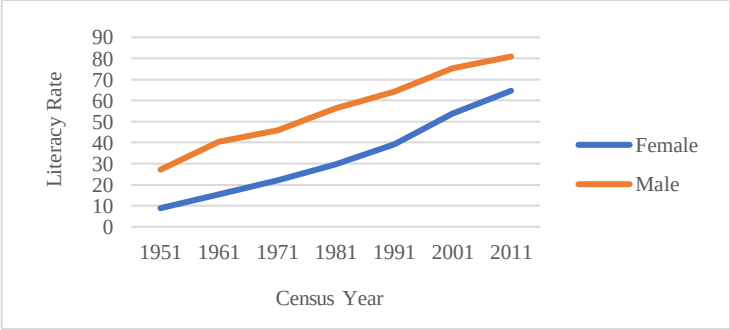
This section provides an overview of basic educational statistics in India focused on the domains of literacy and enrollment rates, school quality, learning achievement,

private schools, cost of education, and returns to education. Because there is often a discrepancy in the data reported by different government and private organizations (Nanwani, 2017), this section includes data from several sources to provide a comprehensive snapshot of the current education situation in India. The different sources of data include the 2011 National Census; the District Information System for Education (DISE); the National Sample Survey; and the Annual Status of Education Report (ASER). The two main sources of data used in this section, the ASER survey and the DISE employ different methodologies which often leads to a discrepancy in the data reported by both surveys. The ASER is a rural household survey that is conducted annually by a non-profit organization across most rural districts in India (ASER Center, 2017). It is the only non-governmental source of information on educational statistics. On the other hand, the DISE, a government initiative, was created to monitor progress under two schemes, the Sarva Shikshan Abhiyan (SSA) and the Right to Education Act (RTE) 2009. School authorities periodically provide information for the DISE.

India's educational achievements are a mixed bag. While there have been improvements in literacy and enrollment rates and school infrastructure, learning achievements continue to be low. The cost of schooling for parents also continues to rise despite numerous policy initiatives to provide free education at the elementary level. Private schools continue to perform better in terms of learning achievements and school infrastructure. In such an environment, parental investment is crucial to ensure that children get access to quality education.

Literacy rates

Figure 2: Gender Gap in Literacy Rates



Source: 2011 Census (MSPI, 2017)

While the total literacy rate has increased from 65% in 2000 to 73% in 2011, literacy rates vary by gender, urban/rural residence, and state. As shown in Figure 2, there is a gap of 14 percentage points between literate males and females (81% for males and 65% for females). However, compared to the 2001 census, women have seen a larger improvement in literacy; 11 percentage points as compared to 6 percentage points for men. The gender gap in literacy rates differs by urban/rural location and state of residence. The gap is higher in rural areas (19 percentage points) than urban areas (10 percentage points). Literacy rates for females grew by 12 percentage points in rural areas and 6 percentage point in urban areas from 2001 to 2011. The gender gap in literacy rates is highest in the north-western state of Rajasthan (27 percentage points) and lowest in the north-eastern state of Meghalaya (3 percentage points) (Ministry of Statistics and Program Implementation [MSPI], 2017).

Private Schooling

Although private schools are much more expensive that government schools, parents often prefer to send their children to private schools if they can afford to do so. Multiple studies have found that parents associate private schools with better school quality and increased opportunities for social mobility, employment opportunities, and marriage prospects (Kingdon, 2007; Muralidharan & Sundararaman, 2015; Srivastava, 2008; Srivastava & Noronha, 2016). The share of private schools has increased substantially since the early 1990s. Private schools that are unaided by the government accounted for 19% of all schools in India in 2015-16. The share of private schools goes up to 26% if we include private schools that receive some aid from the government (National University of Education Planning and Administration, 2016). Scholars have suggested that these rates are often underestimated in official data. Private schools that are not recognized by the government are not included in official statistics (Kingdon, 2007; Nanwani, 2017).

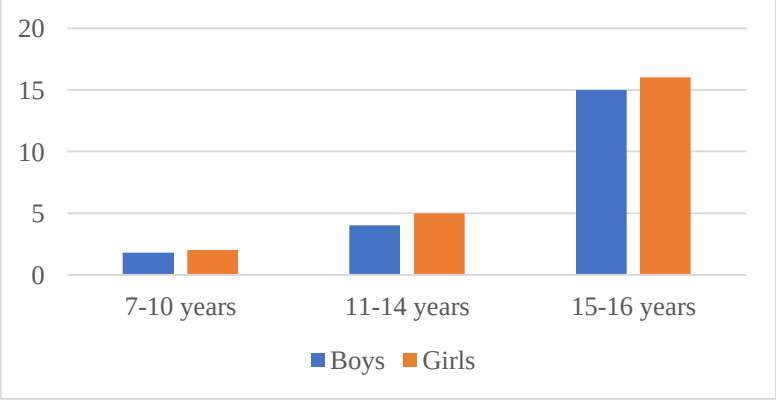
Boys are much more likely to be enrolled in private schools. The gender gap in private school enrollment is about 10 percentage points for all school age children. In rural areas, children are more likely to be enrolled in government schools (65%) largely due to the unavailability and the high cost of private schools (ASER Center, 2017).

Enrollment Rates

Enrollment rates vary by gender, rural/urban location, and age. Girls have marginally lower rates of enrollment as per data from the DISE. The ratio of girls to

boys' enrollment was 0.93 for primary education, 0.95 for secondary education, 0.91 for higher education, and 0.90 for higher secondary & above education for 2015-16. The ASER, which only surveys children in rural areas, recorded high rates of enrollment where 97% of all school aged children (6-14 years) were enrolled in school. Children are more likely to be out of school (never enrolled or dropped out) at higher ages. As shown in Figure 3, in 2016, the rates of enrollment for 7-10 years were high and only 1.8% of boys and 2% of girls were out of school, whereas in the 11-14 age group, 4% of boys and 5% of girls were out of school, and in the 15-16 age group, 15% of boys and 16% girls were out of school. Rates of enrollment for girls also differed by state. More than 8% of girls (11-14 years) were out of school in Madhya Pradesh, Rajasthan, and Uttar Pradesh (ASER Centre, 2017).

Figure 3: Percentage of out of school children in rural areas



Source: 2016 ASER survey (ASER Centre, 2017)

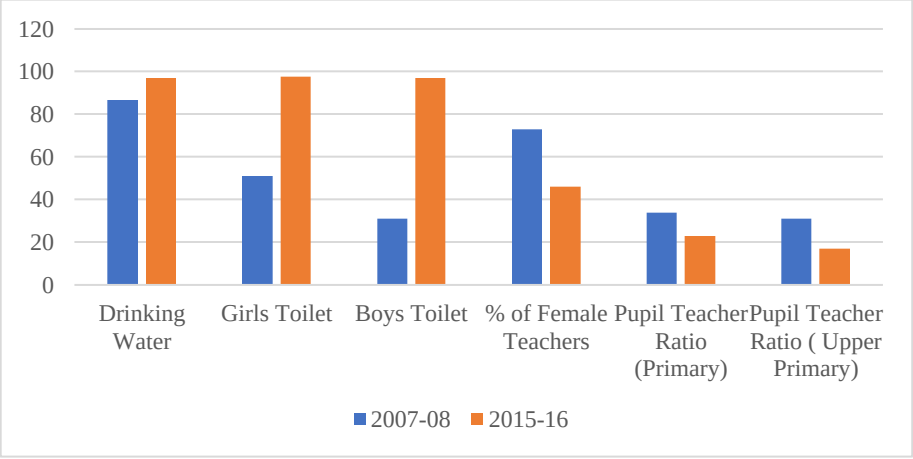
The NSS 71st Round in 2014 asked participants (aged 5-29 years) why they had dropped out of schools. Never enrolled individuals were also asked why they did not enroll in school. The most commonly cited reasons were similar among the drop outs and

the never enrolled. For men, the two most commonly cited reasons were disinterest in education and financial constraints. For women, engagement in domestic activities and disinterest in education were the most commonly cited reasons (MSPI, 2017).

School Quality

Different education policies have targeted school quality and infrastructure over the last decade. However, as shown in Figure 4, there has been mixed improvement in school quality. Areas of improvement include provisions for drinking water, midday meals, separate toilets for boys and girls, and pupil teacher ratios. One area that lacked progress was the percentage of female teachers, which is especially important for retaining girls in school in rural areas. Further, different sources of data provide different assessments of the level of improvement in various domains of school quality.

Figure 4: Trends in school quality using data from DISE



Source: School Education in India 2015-26 (NEUPA, 2016)

As per the DISE (NEUPA, 2016), almost all schools (97%) have provisions for drinking water, and separate toilets for boys and girls. There has been an improvement in

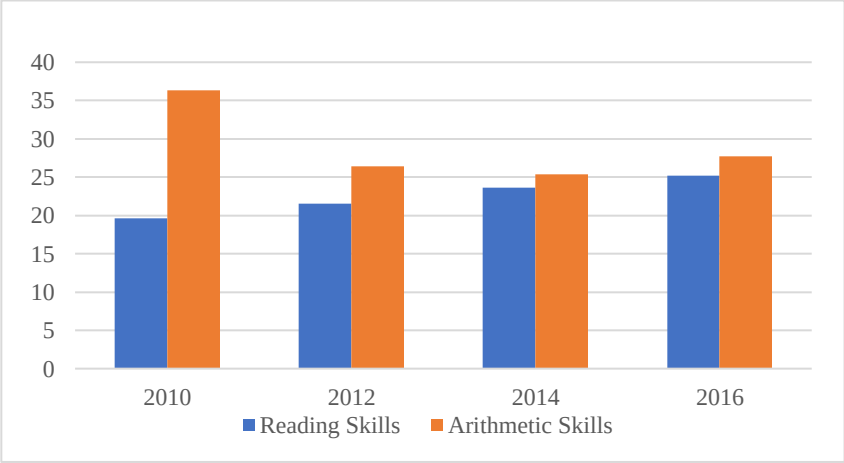
the average pupil teacher ratio at both the primary and upper primary levels. The average pupil teacher ratio at primary level was 34 in 2007-08 and 23 in 2015-16. This ratio also improved for the upper primary level from 31 in 2007-08 to 17 in 2015-16. Both the pupil teacher ratios meet the standards set forth in the RTE, 2009. However, there was a decline in the proportion of female teachers in 2015-16 (46%) from 2007-08 (73%). Information on these indicators were available only for 2015-16. Mid-day meals, the government's flagship scheme, were served at 98% of the government aided elementary schools. Most schools had a library (83%) and a playground (61%) and employed teachers who were adequately trained. Seventy-four percent of teachers had a minimum of a graduate degree and 80% were professionally trained (NEUPA, 2016).

The results from the ASER survey in rural areas provide less favorable results. In 2016, 87% of schools had provided mid-day meals (85% in 2014) when the survey team visited the school. Far fewer schools had drinking water and functioning girls' toilets. Only 74% of schools had facility for drinking water as compared to 73% in 2014. Although there was an increase in the number of schools that had girls' toilets that were unlocked and useable from 33% in 2014 to 62% in 2016, the figures for usable girls' toilets are much lower than the estimates provided by the DISE. Lastly, estimates for teacher pupil ratio were also lower in the ASER report. Only 53% of elementary schools complied with norms for pupil teacher ratio as per the RTE, 2009 (ASER Centre, 2017).

Learning achievement in primary education

There is mixed evidence on improvement in learning achievement. While the ASER survey shows that children's reading skills have improved in the last four years, arithmetic skills have declined over time. Conversely, the National Assessment Survey (NAS) 2012-13 (National Council of Education Research and Training, 2014) provides a higher estimate for both reading and arithmetic skills. Both surveys indicate that learning achievement differs by state of residence, and type of school. The discrepancy in the rates between the ASER survey and the NAS can be attributed to differences in methodology. The NAS assesses grade-level competencies and the performance of children relative to their peers whereas the ASER tests basic reading and arithmetic skills. It should also be noted that ASER only surveys children in rural areas whereas the NAS also includes urban areas (ASER Centre, 2017; National Council of Education Research and Training, 2014).

Figure 5: Trends in learning achievement 2012-2016 for both government and private schools



Source: 2016 ASER survey (ASER Centre, 2017)

The ASER survey conducts learning achievement tests in rural areas. As shown in Figure 5, the survey found that only 25% of children in the third standard were able to read second standard level text in 2016. Although these figures seem very low, there has been an improvement over time, as only 20% of children in the third standard were able to read second grade level texts in 2010. As opposed to reading skills, the rates for arithmetic skills have declined over time. Only 28% of children in the third grade can perform subtraction as compared to 36% in 2012 (ASER Centre, 2017). There is significant variation in learning outcomes across states. For example, 47% of students in Himachal Pradesh in the third grade can read a second-grade level textbook whereas only 16% of students can do so in Jharkhand. Students in Haryana, Himachal Pradesh, Kerala, West Bengal have the highest learning levels for both reading and arithmetic (ASER Centre, 2017). Learning achievement also differs by type of school. Children in private schools had higher scores on tests for reading skills (38%) as compared to those in government schools (19%). Similarly, a higher proportion of students (44%) enrolled in private schools were able to perform subtraction as compared to children in government (20%) schools. Although children in private schools have better learning outcomes, this may be a result of selection, as children of higher income parents are only able to afford private school.

The National Assessment Survey (NAS) 2012-13 provides higher estimates of learning achievement. According to NAS, 69% of students in the third grade could do addition, 65% could do subtraction, and 57% could do division in the third grade in all government schools (including aided government schools). The national average for

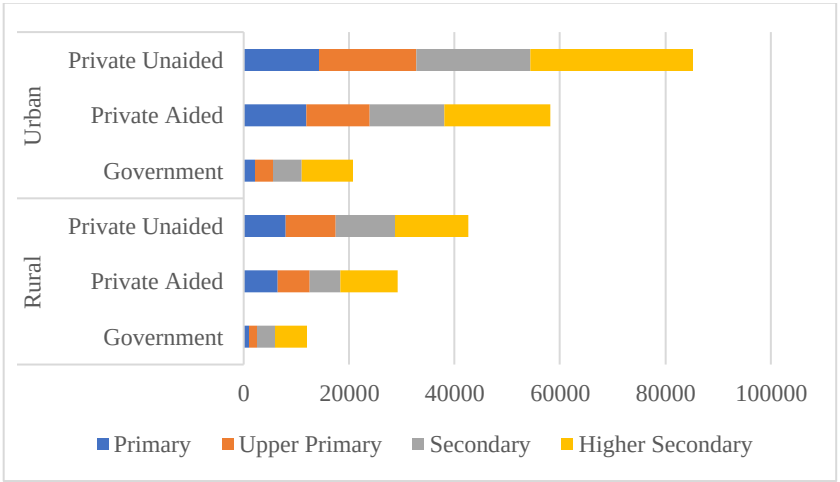
language was 257 (scale from 0 to 500). Southern states like Tamil Nadu, Kerala, Karnataka and Northeastern states such as Manipur, Mizoram and Tripura secured the highest scores whereas the states of Punjab, Haryana, Bihar, Chhattisgarh, Uttar Pradesh, had the lowest scores (National Council of Education Research and Training, 2014).

Cost of schooling

While policies mandate free elementary education, parents still invest a considerable amount of resources to retain their children in school. The cost of schooling differs by type of school, rural/urban location, state of residence, and level of education. Under the Sarva Shikshan Abhiyan (SSA) and the Right to Education Act (RTE), government schools are required to provide free elementary education to children aged 6-14 years. Additionally, girls, children of Schedule Caste (SC) and Schedule Tribe (ST) families, and children who live in households below the poverty line are provided free uniforms. Girls are also provided free textbooks (Ministry of Human Resource Development, 2017). Private schools that receive government funds are also mandated to provide tuition free elementary education (Kingdon, 2007). However, states need to create legislation to implement these policy mandates. Tilak (1996) conducted an exhaustive survey of the cost of free elementary education and found that over one-third of states did not implement the mandates of the National Policy on Education (NPE) 1992. And among the states that created legislation to provide free education, many states chose to provide free education only for four or five years, and not eight years as mandated by the NPE.

Although policy initiatives are geared towards providing tuition free elementary education, tuition fees are a small fraction of costs incurred for schooling. Tilak (1996) found that households spend on a variety of fees such as examination, admission, gym, library, and other fees in addition to tuition fees, to be able to access elementary education. A similar trend was noted by Srivastava & Noronha (2016), who found that households in a slum community in Delhi, on average, spent a total of Rs.1533 annually, or 1.9% of their daily wage rate, on their child's elementary education in government schools that did not charge any tuition fees. This figure includes expenditure on transport, books, uniform, private tuition, and tuition fees where applicable. The RTE mandates 25% reservation in private schools for tuition free education for children living in extreme poverty. Students who were enrolled in private schools through this reservation provision under the RTE were exempt from paying tuition fees, but these households still spent Rs. 13,304 annually, or 17% of their daily wage, to access these private schools (Srivastava & Noronha, 2016).

Figure 6: Average Expenditure per Student by Education Level and Location



Source: NSS 2014 (MOSPI, 2015)

School fees differed by type of school and rural/urban location. As shown in Figure 6, the cost of education was considerably higher in private schools for all levels of education. The average annual expenditure for primary education per student was Rs. 965 for government schools, Rs. 6452 for private aided schools, and Rs. 7907 for private unaided schools in rural areas. In contrast, annual expenditures were much higher in urban areas at Rs. 2149 for government schools, Rs. 1181 for private aided schools, and Rs. 14242 for private unaided schools. These estimates include the total annual expenditure on course fees, books, uniforms, materials, and cost of transport (Ministry of Statistics and Program Implementation, 2015).

Returns to Education

Rates of return to education vary across different levels of education, castes, religions, and rural/urban locations. Mohapatra & Luckert (2012) examine returns at five different education levels: primary, middle, secondary, higher secondary, and graduate-university. They find that the average daily wage increases with an increase in education even after controlling for factors such as belonging to a lower or backward caste, being Muslim, living in a rural area etc. The mean daily wage for illiterate individuals is Rs. 95 for men and Rs. 54 for women. The wage rate is almost three times higher for individuals with a college degree at Rs. 292 for men and Rs. 242 for women (Mohapatra & Luckert, 2012).

This section provided an overview of the education sector in India. While there has been an increase in enrollment rates for both boys and girls, the proportion of out of school children at higher ages continues to be substantial. Further, a higher proportion of girls than boys are out of school at higher age groups. The cost of schooling is also substantial despite policy initiatives to provide free elementary education. While private schools are more expensive than government schools, they provide better facilities. Children have better learning outcomes in private schools, although this may be a result of selection, as only children of parents with higher incomes can afford to go to these schools. Owing to a lack of quality public education, parental investment becomes crucial to ensure children's access to quality education.

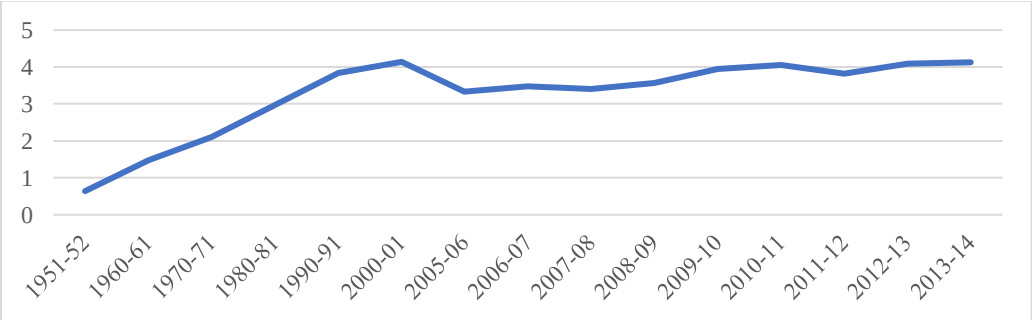
Education Policy Background

This section provides an overview of elementary education policies in India to provide a background for this project. Although the first education policy proposed the creation of a public education system, subsequent policies did not take any steps towards establishing such a tuition free common education system. The lack of a public education system along with insufficient funding for education are two major issues that plague education policy in India. Consequently, while India has made considerable progress in increasing the enrollment rate since the 1950s, a 100% gross enrollment rate has not yet been achieved.

Post-independence in 1947, education was not a top priority and India did not have an education policy until 1968. The first education commission (EC) was set up in the mid-1960s and adopted an equality of quality approach. The commission

recommended an increase in the availability of free lower and upper primary schools that would provide education of uniform quality to all citizens. This expansion was supposed to be funded by the State, however there was no clarity on the share of funding between the central and state governments. There was also a move to bring all public and private schools into a common neighborhood-based education system. Although the commission provided the vision for a public system, Bhatty (2014) has criticized the commission for not developing a programmatic plan to achieve the creation of a common neighborhood system of education. The EC also made suggestions for affirmative action for marginalized groups that included tuition free education and scholarships (Bhatty, 2014; Velaskar, 2010). Lastly, the EC recommended that India spend 6% of its GDP on education (Minsitry of Education, 1966). As Figure 7 shows, that goal has not yet been achieved. While the expenditure on education steadily increased from 0.64% of the GDP in 1951-52 to 4.14% of the GDP in 2000-01, expenditure has stagnated at approximately 4% of the GDP in the last decade (Mehrotra, 2012; Nanwani, 2017).

Figure 7: Expenditure on Education as % of GDP



Source: Ministry of Human Resource Development (2017)

The first education policy was crafted in 1968. The recommendations of the EC were not fully incorporated into this policy. For starters, there was no plan to create a public education system although equality of educational opportunity was stated as the central goal of the policy. The policy called for the creation of programs to not only ensure enrollment but also to promote the retention of children in schools. Girls' education was stressed as a means for social transformation. The 1968 education policy called for intensive efforts to increase educational opportunities for backward classes, tribal people, and the disabled. The foundation for a 10+2+3 uniform educational structure was laid in this policy which mandated 10 years of primary and secondary education, two years of higher secondary education, and three years of college education (Minsitry of Human Resource Development, 1968). One of the major drawbacks of the policy is that the document only lays out the basic goals that need to be achieved to advance education. The policy did not introduce specific programs or schemes, organizational, or financial structures to achieve the goals stated in the policy document (Bhatty, 2014). For example, the policy states that "strenuous efforts should be made…to provide free and compulsory education for all children up to the age of 14" (Minsitry of Human Resource Development, 1968). However, there is no programmatic plan laid out to achieve this goal of universalization of elementary education. The 1968 education policy relied on state governments to create their own plans and programs to achieve the goals laid out in the policy, instead of creating a uniform scheme that would be implemented by all state governments.

In 1986, the National Policy on Education (NPE) was released which was further amended in 1992. This iteration of education policy provided a major push to providing free and compulsory education to all children up to fourteen years of age. The policy focused on the expansion of primary schools because data from the 1978-79 All India Education Surveys (AIES) indicated that many villages lacked primary schools and approximately one-third of all primary schools only had one teacher. Further, close to 60% of children had dropped out of primary schools and 75% had dropped out in the upper primary stage. The NPE acknowledged that there was a drive for rapid expansion of schools without adequate provisions for funding that adversely affected the quality of education provided in elementary schools. Accordingly, the NPE had three main goals of improving the quality of education and ensuring universal enrollment and retention of children aged up to 14 years. Funding was a critical issue as policy makers acknowledged that the targets for universal elementary education set forth in the education policy in 1968 were not achieved due to a lack of funds. Although the 1986 NPE aimed for the retention of all children up to the age of fourteen in school, policy makers revised that goal in 1992 saying that a more realistic goal is to focus on retaining all children in school for at least five years up to the age of 11 years (Ministry of Human Resource Development, 1992). Nevertheless, the NPE was a marked improvement on the first education policy as it contained specific goals and objectives. One of the main initiatives of the policy was Operation Blackboard that prescribed minimum standards of infrastructure for all primary schools in the country. The NPE established minimum levels of learning and created incentives for enrollment (such as free uniforms, textbooks,

scholarships) to girls in families living below the poverty line, and children belonging to backward castes, classes and tribal children (Ministry of Human Resource Development, 1992).

A shortfall of funds hampered the implementation of the NPE. Only 3.84% of the GDP (Figure 2) was allotted to finance this phase of the education policy in 1990-91 which was insufficient for the ambitious expansion proposed in the policy document (Bhatty, 2014; Velaskar, 2010). Although funding had increased from 2.98% of the GDP in 1980-81 to 3.84% of the GDP in 1990-91, funding for education was still below the mark of 6% of GDP that was recommended by the EC in 1966. A major drawback of the NPE was that there was no move to create a public education system, which had been initially proposed by both the EC and the first education policy in 1968. Nevertheless, the NPE did have a positive impact; enrollment increased from 71% to 83% for boys and 55% to 75% for girls aged 6-10 years between 1993-1999 as per data from the National Family Health Surveys (NFHS) conducted in both years (Kingdon, 2007).

Although there was an increase in enrollment rates after the NPE, India had still not achieved universal elementary education by 2001. The Government of India launched the Sarva Shikshan Abhiyan (SSA) in 2002 to achieve the Millennium Development Goal of universal elementary education for all in India by 2010 (Bhatty, 2014; Praveen Jha, 2016; Kingdon, 2007). This centrally funded scheme had four main objectives: universal access and retention for elementary education, infrastructure development (new schools, upgrading facilities in existing schools), increasing availability of quality education (additional teachers, teacher training, school material), and promoting equality in

education (increasing incentives, alternate schools). The SSA set up an organizational structure for the implementation of the scheme. The District Information System for Education (DISE) was established at the same time for monitoring the progress made under the SSA. School administrators are required to periodically report educational data into the DISE (Ministry of Human Resource Development, 1994).

The SSA policy makers acknowledged that government schools were not able to provide quality education. Despite this finding, the SSA did not aim to create a common education system that could provide quality education to all children. Instead, under one of the provisions of the SSA, the central government set up model schools that diverted from its aim to provide quality education for all, especially among poorer populations. These model schools were supposed to target meritorious children and were well funded at the expense of many government schools that could not provide quality education due to a lack of funds. Expenditures in one type of model school that exclusively caters to the children of central government employees are three times that of the average government school (Bhatty, 2014). Even today, the majority of the Sarva Shikshan Abhiyan (SSA) funds are allotted to model schools under the Right to Education Act, 2009 (Nanwani, 2016).

One year after the creation of the SSA, the Supreme Court established education as a fundamental right for children aged 6-14 years in 2002. As a result, in 2009, the State passed the Right to Education Act (RTE) which states that every child, 6-14 years, shall have the right to a free and compulsory education until the completion of elementary education. The RTE includes provisions to improve access to quality education, by

establishing norms for pupil-teacher ratios, minimum infrastructure for every school, and a provision reserving 25% of seats in private schools for children experiencing poverty. The Act mandated that there should be a school in every neighborhood (1 km for primary, 3 km for upper primary). A School Management Committee is proposed for all schools (except unaided private schools) that includes all stakeholders, including parents, to monitor the progress of the school (Bhatty, 2014).

Parents were introduced as a new category in the RTE Act; they were now morally duty bound to send their children to school to achieve the state's goal of universal elementary education. The Act also reclassified incentives such as free school uniforms, textbooks, scholarships, etc. as entitlements, and not incentives. Parents, as consumers, are supposed to choose schools and educational entitlements for their children (Maithreyi & Sriprakash, 2018).

The RTE is not very different from the SSA or other education policies. Increasing physical access to school and school quality has come at the expense of providing quality education to all as a public good (Bhatty, 2014; Mehrotra, 2012; Velaskar, 2010). The provision for 25% reservation in private schools is seen by many as entrenching the divide between public and private schooling instead of focusing on the creation of a public education system (Bhatty, 2014; Mehrotra, 2012). The RTE does not include any mechanism to ensure that private schools are complying with the reservation norm (Nanwani, 2017). There is no fundamental shift in the way that the issue of under-enrollment or drop outs have been addressed in the RTE. For example, there are no provisions for publicity or outreach to increase the awareness of RTE, especially among

marginalized groups (Bhatty, 2014). In addition, funding continues to be an issue and both the SSA and the RTE have faced a severe lack of funds (Bhatty, 2014; Praveen Jha & Parvati, 2010; Mehrotra, 2012; Tilak, 2012). This is evident from the stagnation of the expenditure on education at 4% of the GDP since 2000-2001 (Figure 7). While enrollment rates have improved over time, universal elementary education and retention remains a distant goal. The 2011 Census indicated that 20% of children 6-13 years were out of school, whereas data from the 2014 DISE and the National Sample Survey 2014 showed out of school rates between 8% and 10% respectively (UNESCO Institute for Statistics, 2016).

Lack of adequate funding and the absence of a public education system are the two biggest flaws in education policy in India. The advent of neoliberal policies and the consequent cuts in public expenditures, increases in public-private partnerships, a myopic focus on minimum levels of learning, and the reliance on the private sector has transformed the education system into a marketplace. In the absence of a public education system, the quality of education provided to children is increasingly dependent on the parents. Multiple education policies have sought to achieve universal education for children up to the age of fourteen without any provisions to track children to ensure that they are getting enrolled in schools. With the RTE, the state went a step further to absolve itself of any responsibility. The RTE has put the burden of choosing schools and accessing educational entitlements solely on parents. In such an environment, parental investment in education is crucial for children to access quality education.

Conceptual Framework

This section discusses the multidisciplinary theoretical frameworks through which mothers' education and employment may affect parental investment in children's education, and the pathways through which these relationships may occur. The two pathways explored in this study include mothers' decision-making power and mothers' beliefs in egalitarian gender norms.

Theories of Parental Investment

Theories of parental investment in children's education include the theory of human capital (Becker & Tomes, 1976), and the resources dilution hypothesis (Blake, 1989; Downey, 1995). The human capital perspective contends that parents view children as investments and they make decisions on expenditure by evaluating future returns on investment. Parental investment is influenced by the academic performance of the child and the number of additional claimants to familial assets (Becker, & Tomes, 1976). Similarly, the resource dilution hypothesis emphasizes the number of siblings among whom resources must be divided. The larger the family, the less resources, interactional or economic, that can be given to any one child (Downey, 1995).

Alderman & King (1998) further the human capital perspective and posit that parents invest differently in the education of their sons and daughters either because of differences in expected market returns or personal preferences, or a combination of the two. This includes a cost-benefit analysis of sending children to school in a situation where boys and girls perform equally. Costs include differences in school fees, or uniforms, or any other educational expense including the opportunity cost of child's

labor, which often differs by gender. Girls, for example, are often responsible for the care of younger children in the household making their household labor more valuable than that of boys. In the labor market, women receive lower wages than men which leads to a reduced rate of return from the market for investment in education (Jensen, 2012; Kingdon & Theopold, 2008). Expected transfers from children also influence parents' preferences. In India, girls move to their marital homes after marriage whereas boys continue to live in their natal homes. Investing in boys ensures that parents will be cared for in their old age. Sociocultural norms also prevent parents from relying on their daughters in their old age (Alderman & King, 1998). Theories of parental investment in education suggest that parents are likely to invest more in boys' education as compared to girls' education.

Pathways

This section presents several potential pathways through which mothers' education and employment may operate to affect investment in girls' education.

Household resources. An increase in mothers' education and employment may lead to an increase in household resources in three different ways. First, mothers' education and employment may increase their own contributions to the household income thereby increasing household resources. Second, this increase in household resources could also come through assortative mating, whereby more educated women form unions with more educated men, who in turn bring in more resources to the household (Becker, 1973). Third, mothers' education and employment could also improve the uptake of government aid thereby increasing the quantum of resources available for educational

expenditure. This increase in household resources could result in an increase in parental investment in education. However, as per the theories of parental investment in the previous section, parents would still be more likely to invest the bulk of these resources in their male children owing to higher returns on investment. It is therefore not necessary that an increase in household resources results in an equitable or even increased expenditure on girls' education. Although mothers' education and employment would result in an increase in the budget share of education at the household level, it does not necessarily predict an increased or equitable investment in daughters' education.

Decision-making power. Economic theories of parental investment largely conceptualize gender inequality as the result of a household optimization system that confers lower economic worth to women than men (Alderman & King, 1998; Becker & Tomes, 1976). The share of expenditure on every household member depends on their contribution to the household and their fallback options, in case of a conflict over distribution of resources. Here, women's lack of authority over household decisions would be a result of her lower productivity and material contribution to the household, as well as her lack of outside opportunities. In such a scenario, mothers' education and employment would increase her contribution to the household income. It would also improve her fallback position. This would in turn increase her decision-making power in the household, making it possible for her to have control over resources that can be allocated as per her preferences (Glick & Sahn, 2000; Song, Appleton, & Knight, 2006). Educated mothers may prefer to educate their children because they are aware of the benefits of education, leading to an increase in parental investment in children's

education (Glick & Sahn, 2000; Tansel, 2002). This conceptualization highlights the importance of economic factors in explaining gains in women's decision-making power at the household level, which in turn leads to increases in parental investment in children's education.

The theory of empowerment provides another conceptualization of this relationship between mothers' education and employment and decision-making power, particularly for girl children. Empowerment is defined as a process of change wherein individuals who were previously denied choice gain the ability to make strategic life choices. In this model, the power to choose is comprised of three interrelated dimensions: resources (pre-conditions), agency (process), and achievements (outcomes) (Kabeer, 2000b). *Resources* include not only material resources but also human and social resources that increase an individual's capacity to make choices. *Agency* refers to an individual's capacity to both determine and exercise strategic life choices. *Achievements* refer to outcomes or choices that were made in the process of empowerment. These outcomes must be evaluated in relation to probable alternatives as empowerment is concerned with the development of critical consciousness wherein individuals are able to conceive of alternative choices and modes of living that do not conform to the social order.

Mother's education and employment can be conceptualized as resources in Kabeer's (2000b) theory of empowerment which may lead to an increase in mothers' agency, conceptualized as mothers' decision-making power, in this study. Taken together, we can hypothesize a process of empowerment wherein an increase in mothers'

education and employment (*pre-conditions*) may lead to an increase in mothers' decision-making power (*process*) that may in turn lead to an equitable or increase in investment in daughters' education (*outcome*). An increased or equitable investment in daughters' education would be a non-normative outcome making it possible to conceptualize this process as a process of empowerment.

Once we see an increase in mothers' decision-making power (either through the economic or empowerment theory approach) mothers could then redirect resources under their control to ensure an equitable or an increased investment in girls' education. Prior research suggests that women are more averse to inequality than men (Croson & Gneezy, 2009; Davis & Greenstein, 2009; Song, Appleton, & Knight, 2006), in which case, mothers may be more inclined towards an equitable allocation of resources between children. In addition, studies have found that daughters' gain more from their mothers' education than their fathers' education, also suggesting that mothers may prefer to allocate resources more equitably than do fathers (Davis & Greenstein, 2009; Duflo, 2012; Glick & Sahn, 2000; Smits & Hoşgör, 2006; Song et al., 2006). These theories and empirical studies suggest that mothers' education and employment, by increasing their decision-making power in the household, may either lead to an equitable or increased investment in daughters' education.

Beliefs in egalitarian gender norms. A different pathway would be that mothers' education and employment increases their beliefs in egalitarian gender norms and this results in an increase in investment in daughters' education. Exposure-based theories indicate that individuals develop gender egalitarian beliefs though their experience with

gender egalitarian situations, beliefs, and ideals (Bolzendahl & Myers, 2004; Davis & Greenstein, 2009). Higher levels of education may expose mothers to different ideas and worldviews, and this exposure may change mothers' beliefs in gender norms, especially regarding marriage and the distribution of power in households (Bourne & Walker, 1991). Mothers' employment can also be hypothesized to have a similar exposure effect where women interact with other female workers who can become role models for envisioning alternate work and family roles (Klein, 1994). As cultural and gender norms, and traditional family structures influence the value attached to sons and daughters, changes in mothers' beliefs in stereotypical gender norms may be more beneficial for girls' outcomes, especially in India where son preference is more prevalent (Das Gupta et al., 2003). For example, a study in China, where son preference is also prevalent, found that mothers with gender egalitarian attitudes were more likely to have similar educational aspirations for both girls and boys, as compared to mothers with more traditional gender attitudes who had higher educational aspirations for their boys (Zhang, Kao, & Hannum, 2007). Both education and employment may increase mothers' gender-egalitarian attitudes and norms that could in turn change their preferences for allocation of resources towards their daughters.

Contextual Factors

This dissertation focuses on the Indian context where gender equity varies across households and regions as kinship relations differ based on religion, caste, and region (Kambhampati, 2009). The theory of empowerment highlights the importance of these contextual factors and argues that any assessment of empowerment needs to be located

within a specific context, otherwise one would not be able to assess any transformations, even if they have occurred. To be able to do this, we need to take account of social and economic structures in which households are embedded, as decision-making power, choice, and gender-based discrimination are located in the values and norms of one's socioeconomic context (Kabeer, 2000b). Gender inequality is not limited to the household and is the product of a complex relationship between different forms of inequality in society (Rahman & Rao, 2004).

Gender differentials in education have been linked to kinship norms, marriage practices, and regional levels of gender equity in India. Dyson & Moore's (1983) landmark study investigated marriage practices in North and South India and found differences in both female autonomy and demographic outcomes between the two regions. In Northern India, patrilocal marriages are more common, where a couple moves to the residence of the groom's family after marriage. In Southern India, endogamous marriages are more common, and women often marry within the same village, region, or family. Marriage practices in Southern India are associated with higher levels of female autonomy, higher female-male sex ratios, and lower gender gaps in infant mortality (Dyson & Moore, 1983). Recent studies have built on Dyson & Moore's (1983) framework and have linked norms of patrilocal marriages and states' low performance on a gender equity index to higher levels of gender inequality in educational outcomes (Kambhampati, 2009; Rammohan & Vu, 2017; Sundaram & Vanneman, 2008). These studies suggest that regional differences in gender equity may influence the relationship

between mothers' education and employment and parental investment in children's education, particularly for girl children.

Caste and religious membership may also influence the relationship between mothers' education and employment and parental investment in children's education. Caste and religion are two axes of social stratification in India. Lower caste individuals including Adivasis, Dalits, or Scheduled Castes (SC) and Muslims are disadvantaged, have lower status, educational attainment, employment, and are confined to occupations that are stigmatized and low-paying (Ministry of Statistics and Program Implementation, 2015). The majority of Adivasis live in remote areas and often speak in dialects that are different from the state's official language. Teachers often discriminate against Adivasi, Dalit, and Muslim children (Desai & Kulkarni, 2008; Drèze & Kingdon, 2001). Because caste and religion impact educational attainment, it is probable that these two factors may also influence the relationship between mothers' education and employment and parental investment in children's education. The gender gap in literacy is larger among lower castes and Muslims than upper and forward caste Hindus which suggests that there may be gender differences in the relationship between caste, religion, mothers' education, employment, and parental investment in children's education. It is probable that increases in lower caste or Muslim mothers' education and employment would benefit girls more than boys as differences in educational attainment by religion are amplified by gender. Based on the theory of empowerment, and findings from prior studies, contextual factors such as the gender equity level of a region, social class, caste, and religious membership,

may all affect the relationship between mothers' education and employment and investment in children's education.

Age

The relationship between mothers' education and employment and parental investment in children's education may also differ by child age. The cost of education increases as children get older (Ministry of Statistics and Program Implementation, 2015) which influences the amount of resources parents have to spend on their children's education. Prior studies on gender discrimination in both household and parental expenditure on education have found differences in expenditures by child's age (Azam & Kingdon, 2013; Lancaster, Maitra, & Ray, 2008). Gender differences in enrollment were more prevalent at higher ages, whereas gender differences in conditional expenditures were more common at lower ages (Azam & Kingdon, 2013), suggesting that the relationship between mothers' education and employment and parental investment in education may differ by child age and gender.

This dissertation examines the relationship between mothers' education and employment and parental investment in children's, particularly daughters' education. Increases in mothers' education and employment, may lead to an increase in mothers' decision-making power or mothers' beliefs in egalitarian gender norms. This increased decision-making power or beliefs in egalitarian gender norms could reduce gender-based discrimination in parental investment in children's education.

Chapter 2: Literature Review

This section provides an overview of studies that have examined gender bias in parental investment in children's education in India. It includes studies that have investigated the role of mothers' education and employment in such differential investment in education and the potential pathways through which these relationships might work.

Gender Bias in Parental Investment in Children's Education

A number of studies have documented gender-based discrimination in parental investment in children's education in India. These studies have consistently found that household expenditure on education is significantly lower for girls than for boys (Azam & Kingdon, 2013; Bhatkal, 2017; Chaudhuri & Roy, 2006; Kaul, 2018; Lancaster et al., 2008; Saha, 2013; Sahoo, 2016; Zimmermann, 2012). Gender bias in parental investment in education is generally measured in a two-step process (Kingdon, 2005). First, parents make decisions about enrollment and retention of sons and daughters in school. Second, conditional on enrollment, parents make decisions about the amount of resources to spend on their sons' and daughters' schooling. Such conditional expenditures include private tuition, books, uniforms, transportation, and any other education-related expenses (Azam, & Kingdon, 2013).

Although overall investment in children's education is linked to household income (Kingdon, 2005; Saha, 2013), poverty itself is not the main driver of differential parental investment. Saha (2013) finds evidence of gender bias in parental investment in both middle and higher expenditure classes, yet no gender bias in expenditures among

households in the lowest expenditure category, as expenditures on education in these cases are negligible. This suggests that poverty is not the only driver of differential investment.

A number of sociocultural norms, practices, and kinship systems in India, including that of patrilocal marriage and dowry suggest an overall preference for sons (Das Gupta et al., 2003). Such preferences lead to sex-selective abortions, infanticides, and the neglect of young daughters, which in turn leads to low female to male sex ratios. States which have the lowest female to male sex ratios in the country, such as Bihar, Rajasthan, Madhya Pradesh and Uttar Pradesh, also have the highest levels of discrimination in parental expenditure on education (Azam & Kingdon, 2013; Kingdon, 2005; Saha, 2013). This evidence suggests that son preference may be one of the drivers of gender-based discrimination in parental investment in children's education.

Mothers' Education and Differential Investment in Children's Education

Only two studies have examined the role of parental education in differential investment in both school enrollment and expenditures, conditional on enrollment. One study examined the role of fathers' education and found a positive association with expenditures on children's education (Saha, 2013). Another study examined the association of both mothers' and fathers' education on school enrollment alone and found that parental education had a significant effect only on girls' and not boys' school enrollment. Further, mothers' education had a larger effect on girls' enrollment as compared to fathers' education (Kingdon, 2005). Another study examined the association between parental education and the share of household resources spent on education, but

did not directly examine gender bias in educational investment (Chaudhuri & Roy, 2006). They found that increases in parental education, especially that of mothers, was associated with an increase in the budget share of household expenditure on education. No studies, to my knowledge, have explicitly examined the association of mother's education with conditional expenditures on children's education and whether this association differed by the gender of the child.

Mother's Employment and Differential Investment in Children's Education

No studies, to my knowledge, have examined the associations of mothers' employment with expenditures on children's education, conditional on enrollment. This section focuses instead on studies that have investigated the relationship between mother's employment and children's school enrollment in India. Prior research has found a positive (Afridi, Mukhopadhyay, & Sahoo, 2012) and mixed associations (Kambhampati, 2009) between mothers' employment and children's educational outcomes. Additionally, there is no consensus in the literature on the impact of mothers' employment on gender bias in school enrollment, specifically the enrollment of girls. Studies have found positive (Afridi, Mukhopadhyay, & Sahoo, 2012), negative (Kingdon, 2005; Rammohan & Vu, 2017; Sundaram & Vanneman, 2008), and mixed (Kambhampati, 2009) associations between mothers' labor force participation and girls' enrollment in school. Different findings across studies are due to differences in methodologies, datasets, and the unexamined roles of household income and regional gender equity levels, which may influence the relationship between mothers' employment and girls' school enrollment.

Kingdon (2005), using data from a household survey conducted in 1995 in one district in Northern India, found a negative relationship between mothers' employment and girls' school enrollment. Mothers' employment was not significantly associated with boys' enrollment in school. She proposes two scenarios that can explain these findings: either girls are forced to drop out and work at home because their mothers are working, or mothers from poor families are the ones who work, and they may not be able to afford education. In either of these scenarios, poverty may be the actual determinant of enrollment and not mothers' employment per se. Kambhampati (2009), using data from the nationally representative National Sample Survey (NSS) of 1993, finds that while mothers' wage contributions increased the probability of schooling for all children, it also increased the likelihood of girls' participation in the labor market. This relationship was not statistically significant for boys. Additionally, these relationships differed based on the gender equity level of the region in which the household was located (Kambhampati, 2009). Kingdon's (2005) study uses data from only one district in Northern India and this limits the generalizability of her findings across the country. This might also explain the lack of agreement with the findings of Kambhampati (2009) who uses national level data. Also, the results from these studies may no longer reflect the relationship between mothers' employment and girls' school enrollment today, given that the data they both used is more than twenty years old. All the studies reported in this section used cross sectional data where mothers' employment and children's enrollment in school are measured contemporaneously. Reverse causality might be an issue, where mothers had to seek employment to finance the education of their children. Overall, there is no

consensus on the relationship between mothers' employment and girls' school enrollment in India, and no evidence on the associations between mothers' employment and conditional expenditures on children's education. In addition, these studies point to the importance of considering the role of factors other than employment, such as poverty and regional gender equity levels, when estimating the associations between mothers' employment and differential investment in children's education.

Pathways between Mothers' Education and Employment and Children's Education

This dissertation explores two potential pathways through which mothers' education and employment may impact investment in children's education: mothers' decision-making power in the household, and her beliefs in egalitarian gender norms. While no studies have directly examined the role of these potential pathways in explaining the associations between maternal education and employment and differential investment in children's education, there is literature on the different pieces of these relationships. The first section below will focus on studies that have examined the role of women's education and employment on their decision-making power; and on the role of women's decision-making power in investments in children's education. The second section will focus on studies that have examined the role of women's education and employment in their beliefs in egalitarian gender norms. No studies, to my knowledge, have investigated the role of women's beliefs in egalitarian gender norms and parental investment in children's education.

Decision-making power. This section reviews literature on the relationship between mothers' education and employment and decision-making power in the

household. It also reviews literature on the relationship between mothers' decision-making power and children's, especially daughters', education.

Mothers' education and decision-making power. Researchers use a variety of phrases to describe the process by which individuals make strategic life choices based on their own needs, desires, and goals. These phrases include autonomy, decision-making power, and empowerment. The use of a phrase depends on the authors' beliefs regarding conceptual distinctions and measurement issues. This dissertation, for example, utilizes the phrase decision-making power, as it is best suited to the measures that are available in the dataset that will be utilized for analyses. This review includes studies that have examined autonomy, decision-making power, and empowerment as they are interrelated concepts.

Prior studies have found that educated women have more decision-making power, autonomy (Acharya, Bell, Simkhada, Van Teijlingen, & Regmi, 2010; Bloom, Wypij, & Das Gupta, 2001) and empowerment (Allendorf, 2007) in their households. Most studies conceptualize decision-making power, autonomy or empowerment as having a set of individual elements. These typically include the degree of involvement in decision-making in the household in different domains, freedom of movement and association, and in some cases, freedom from domestic violence. Studies either measure these components through a discrete number of questions or through the creation of a scale (Sandberg & Rafail, 2013). Subaiya, & Vanneman (2016) for example, used a scale to measure the extent to which women make decisions alone regarding major purchases in the family, the number of children to have, child's health and child's marriage. They found that

educated women had more decision-making power in their households. Additionally, they tested the relationship between education and decision-making power using both cross-sectional and longitudinal data and found a positive relationship in both instances. In a survey of women's decision-making power in twenty-three countries, education had a positive relationship with women's abilities to make individual decisions regarding health care and expenditure on daily needs items in about half of the countries (16-17) included in the study (Kishor & Subaiya, 2008). In general, education increases women's decision-making power, although the effect may vary for different domains of decision-making power tested by different studies.

Mothers' employment and decision-making power. Studies have largely found a positive relationship between women's employment and their autonomy or decision-making power. Working women have better control over finances (Basu & Basu, 1991), decision-making power (Basu & Basu, 1991; Bloom et al., 2001; Subaiya & Vanneman, 2016) and higher freedom of movement (Bloom et al., 2001) than women who were not working. Compared to women who were unemployed, working mothers had more decision-making powers regarding their child's education, health issues in the household, family disputes (Kumar & Maral, 2015), and child's health (Basu & Basu, 1991). Overall, mothers who participate in the labor market tend to have more decision-making power in their households.

Decision-making power and children's education. Research on the role of women's decision-making power and children's education has been very rare. However, there is a larger body of research conducted in the fields of public health and demography

that has examined the role of mothers' education in child health. While the exact nature of the pathway from mothers' education to child health outcomes is widely debated (Hobcraft, 1993; Vikram et al., 2012), mothers' autonomy has been found to have a positive impact on child's stunting (Shroff, Griffiths, Adair, Suchindran, & Bentley, 2009), child mortality, especially that of girls (Adhikari & Sawangdee, 2011; Bourne & Walker, 1991), use of antenatal care and safe delivery practices (Bloom et al., 2001), immunization (Malhotra, Malhotra, Ostbye, & Subramanian, 2014), child's weight (Allendorf, 2007; Chakraborty & Anderson, 2011) and feeding practices and infant growth (Shroff et al., 2011) in India and Nepal. The positive relationship between mothers' autonomy and improved child health suggests that there may also be a similarly positive relationship between mothers' autonomy and differential parental investment in children's education.

A single study tested the impact of mother's autonomy on children's schooling and employment in the labor market and found mixed results depending upon the poverty level of the household (Kambhampati, 2009). The author found that higher levels of mother's autonomy, operationalized as her education relative to her husband's education, lowers the likelihood of both boys' and girls' school enrollment in households above the poverty line (by 24 and 20 percentage points respectively), but found no significant effect among households below the poverty line. A smaller differential between mothers' and fathers' education or relative wage contribution signifies higher autonomy for mothers. Conversely, mother's autonomy, operationalized as her relative wage contribution, lowers the probability of enrollment of both boys and girls in households below the

poverty line whereas it increases the probability of enrollment of girls in households above the poverty line. (Kambhampati, 2009). These findings are a puzzle and point to the importance of considering the role of household economic status in these associations. More importantly, these findings highlight a potential limitation of relying on the difference in mothers' and fathers' education and earnings, as the sole measure of autonomy which may not be capturing this nuanced and complex construct.

***Beliefs in Egalitarian Gender Norms*.** This section reviews literature on the relationship between mothers' education and employment and their beliefs in traditional gender norms. No studies, to my knowledge, have investigated the relationship between beliefs in traditional gender norms and parental investment in children' education and this relationship remains unexplored.

Education and beliefs in egalitarian gender norms. In the previous section, a number of studies found that mothers' decision-making power was beneficial for children's health (Allendorf, 2007; Shroff et al., 2009). However, studies have shown that educated mothers may be more effective at discriminating against their daughters, if they prefer sons. For example, one study found excess mortality for second and later born daughters of more educated mothers in Punjab, a state in Northern India (Das Gupta, 1983) and another study found that educated mothers are more likely to opt for sex-selective abortions (Jha et al., 2011). Educated mothers were less likely to hospitalize their daughters as compared to their sons (Bhan et al., 2005). A qualitative study based on in-depth interviews with sixty-five immigrant Indian women across the U.S. reported having sex-selective abortions either because they themselves endorsed norms of son

preference or they faced family abuse and pressure to bear sons (Puri, Adams, Ivey, & Nachtigall, 2011).

Although some mothers may endorse norms of son preference, there is evidence to suggest that mothers' education can alter these beliefs in traditional gender norms. Studies have found that education leads to a change in women's beliefs in traditional gender roles and attitudes (Bryant, 2003; Davis & Greenstein, 2009; Tallichet & Willits, 1986). These changes may be driven by exposure, through education, experiences, and socialization, to ideals and situations consistent with gender egalitarian norms; and this exposure will lead to the subsequent development of more egalitarian beliefs (Davis & Greenstein, 2009). Multiple studies have found that exposure through increased education leads to an increase in women's beliefs in gender egalitarianism (Bolzendahl & Myers, 2004; Corrigall & Konrad, 2007). Overall, research conducted in the U.S. suggests that being educated makes women more likely to endorse beliefs in egalitarian gender norms.

Employment and beliefs in egalitarian gender norms. Studies have found that women's labor force participation is associated with an increase in their beliefs in egalitarian gender norms (Bolzendahl & Myers 2004; Corrigall & Konrad 2007). As with education, exposure is also thought to explain the link between employment and women's beliefs in gender egalitarianism (Bolzendahl & Myers, 2004; Cunningham, 2005; Davis & Greenstein, 2009; Moore & Vanneman, 2003). Employment, for example, provides women with financial independence, confidence, and different role models, which can help them conceptualize and realize alternate modalities of family and work lives that are gender egalitarian (Klein, 1984). In general, a body of research conducted in

the U.S. finds that women's employment can increase their beliefs in egalitarian gender norms.

Beliefs in egalitarian gender norms and children's education. No studies, to my knowledge, have empirically tested the relationship between mothers' beliefs in traditional gender norms and children's educational outcomes.

Gaps in Knowledge

This literature review highlights several gaps in the prior literature on mothers' education and employment and parental investment in children's education.

Lack of research. None of the studies on parental investment in children's education (Azam & Kingdon, 2013; Bhatkal, 2017; Himaz, 2010; Kingdon, 2005; Saha, 2013) have examined either the role of mothers' education or employment in expenditures on children's education, conditional on enrollment, or how this relationship differs by the gender or age of the child. Second, studies which have examined the role of parental (either fathers' or the highest education of a parent's) education (Chaudhuri & Roy, 2006; Lancaster et al., 2008; Saha, 2013) in investment in children's education have not explored the potential pathways through which these relationships may operate. Lastly, studies have not yet explored the role of either mothers' decision-making power, or beliefs in egalitarian gender norms, in parental investment in children's' education.

Design. First, there is no consensus in the literature on the role of mothers' employment and children's school enrollment. This can be partly attributed to regional variations in the relationship between mothers' employment and school enrollment, as

found by Kambhampati (2009). No studies other than Kambhampati (2009) have explored the role of regional factors in explaining this relationship. All the studies that explored the relationship between mothers' employment and children's school enrollment also used cross-sectional data. There may be an issue of reverse causality here, where mothers had to seek employment to finance the education of their children. This issue remains unaddressed. Additionally, with the exception of one study (Afridi et al., 2012), all the studies that explored the relationship between mothers' employment and school enrollment used data that is more than 20 years old (Kambhampati, 2009; Kingdon, 2005; Sundaram & Vanneman, 2008). The findings of these studies therefore may no longer be valid, because of the rapid economic and social changes that have taken place in India over the last several decades (Jensen, 2012). Second, findings on the relationship between mothers' education and children's school enrollment are inconclusive because the single study that examined this relationship used data from only one district in Northern India thereby limiting the generalization of the study's findings (Kingdon, 2005). Further, the data for that study were also collected more than twenty years ago.

Measures. The findings on the relationship between mothers' autonomy and children's school enrollment are inconclusive. This may be because the single study that examined this relationship used the differential between fathers' and mothers' education and earnings as a proxy for maternal autonomy (Kambhampati, 2009). This proxy might be an incomplete measure of this nuanced construct. Second, the single study that explored the relationship between mothers' education and children's school enrollment did not explore the relationship between mothers' education and conditional

expenditures. The impact of mothers' education on conditional expenditures might be different from the impact on children's school enrollment.

Contribution of the proposed study

This study fills a gap in the literature by addressing the limitations of existing studies discussed in the previous section. First, this dissertation will be the first study to examine the role of maternal education and employment in conditional expenditures on children's education. Second, and most importantly it will also test whether these relationships differ by the gender of the child. Third, this study will also examine differences in the relationship between mothers' education and employment and investment in children's education by child age. Fourth, this dissertation will test for two potential pathways through which maternal education and employment may influence gender bias in parental investment in education. The two potential pathways include mothers' decision-making power and their beliefs in egalitarian gender norms. Fifth, this dissertation will examine how contextual factors such as regional gender equity levels, community beliefs regarding interpersonal violence, per capita consumption, caste, and religion influence the relationship between maternal education and employment and parental investment in children's education. Sixth, this dissertation uses a nationally representative, longitudinal dataset that allows for the measurement of mothers' employment prior to the measurement of children' school enrollment thereby addressing any concerns regarding reverse causality. Lastly, the dataset that will be utilized for this project includes detailed information on mothers' decision-making power in multiple domains of everyday life, which is ideal for the proposed analyses.

Chapter 3: Method

This section describes the shared methodology, sample, and measures for all research questions. Because certain aspects of the methodology differ by research question, subsequent chapters will describe the sample, measures, and analytic strategy used to answer each research question. These chapters will also provide the results for each question.

Data

The India Human Development Survey (IHDS) is the primary dataset for this project. The child is the unit of observation for all research questions. The India Human Development Survey (IHDS) is a nationally representative, two-wave panel survey conducted in all states and union territories in India apart from the small island territories of Andaman Nicobar and Lakshadweep (Desai & Vanneman, 2012; Desai, Vanneman, & National Council of Applied Economic Research, 2005). It is the product of a collaboration between the University of Maryland and the National Council of Applied Economic Research (NCAER), New Delhi

The IHDS aims to capture the processes of change that Indian households are undergoing in today's rapidly changing economic landscape. The survey seeks to document interrelated aspects of development to develop a nuanced understanding of the impact of the economy on individuals and families. The IHDS provides information on health, education, employment, economic status, marriage, fertility, and gender relations (Desai, Vanneman, & National Council of Applied Economic Research, 2008).

IHDS-I and IHDS-II provide information at the individual, household, and community levels. At the individual level, information regarding respondents' health, education, employment, income, marriage, fertility, height and weight (only for children and mothers of children under the age of 5 and 8-11 years) are found either in the household or the education and health survey. Apart from these two surveys, assessments were conducted to provide information on reading, writing, and arithmetic knowledge of children aged 8-11 years (Desai et al., 2008).

The household survey was typically administered to the head of the household whereas the health and education survey was typically administered to the wife of the head of the household or any other ever-married woman aged 15-49 years. Information on household consumption and expenditures, remittances, social network and organizational memberships, assets, confidence in institutions, farming practices, household businesses, debt, and participation in government schemes are contained in the household survey.

There are three kinds of surveys that provide information at the community level: school, village, and primary health facility surveys. In every village and urban primary sampling unit, both a government and private school are surveyed to gather information regarding the infrastructure of the school, composition of students and teachers, mid-day meal availability and functioning of the school. The village survey provides information at the village level including information on infrastructure, socioeconomic conditions, and employment practices. Lastly, the primary medical health facility survey has information on infrastructure, medicine availability, staff composition and functioning of

a government and private health facility that can be accessed for treatment of a minor medical condition.

Data collection for the first wave (IHDS-I) began in 2004 and was completed a year later. The sample for IHDS-I can be broadly divided into two main categories. The first contains re-interviews of 13,900 rural households that were interviewed in 1994-95 for the Human Development Profile of India (HDPI) study conducted by NCAER. The second sub-sample consists of 27,654 new households resulting in a total sample of 41,554 households for IHDS-I (Desai et al., 2008).

The HDPI had a sample of 33,230 rural households. Less than half of the total sample of the HDPI were re-interviewed for the IHDS-I. The HDPI employed a stratified sampling design. Therefore, a random sample could not be drawn for re-interviews for IHDS. To address this issue, the original listings were updated and villages from these listings were randomly ranked within each district and households were sampled within each stratum according to this ranking scheme. The original sample was stratified based on religion, caste, occupation and landholding size. Replacement households were selected for each stratum for each district when original respondents could not be identified (Desai et al., 2008).

In addition to replacement households, the sample for IHDS-I includes a refresher sample from HDPI districts, a sample from states and union territories not included in HDPI, and a new sample from the state of Karnataka. A refresher sample was selected from each of the HDPI districts using the 1991 census listing of villages with probability

relative to population size. A sampling interval based on the proportion of the total rural population was chosen to generate the required number of villages. The IHDS employed a similar process to obtain a sample from eleven states and union territories that had not been included in the HDPI. For the state of Karnataka, where original listings were unavailable, the IHDS re-interviewed 774 households that were sampled for another study conducted by NCAER (Desai et al., 2008).

While the HDPI only collected data from rural areas, the IHDS sampled households in urban areas as well. The urban sample was drawn from the 2001 census list of all Indian towns and cities. This list was subdivided into five size groups to derive samples proportional to population size. Interval sampling was used to obtain a sample of towns and cities (for more details refer to Desai et al., 2008). The full sample for the IHDS is intended to be representative of the whole population of India and the response rate for IHDS-I was 92% (Desai et al., 2008).

Data collection for the second wave of the IHDS (IHDS-II) began in 2011 and was completed within a year. Eighty-three percent of the households interviewed in IHDS-I were re-interviewed for IHDS-II. The sample also includes split households from the IHDS-I. The total sample size of 42,152 households includes a replacement sample of 2,134 households that were not re-interviewed (Desai & Vanneman, 2015).

Sample

The sample for the current study is limited to children aged 6-19 years, present at both waves of the IHDS, whose mothers were respondents for the health and education

survey, as key variables for this project are included in this section of the survey. The age restriction corresponds with the ages children start school at first standard (grade), at 5-6 years, and age 19, when children typically graduate from senior secondary school (high school). The original sample consisted of 215,754 individuals who were ever interviewed for the IHDS. Because the outcomes of interest were investment in children's education at IHDS-II, the sample was restricted to individuals who were present at both waves of the IHDS (*N*=150,988). After linking all children to their parents, the sample was limited to children aged 6-19 years at IHDS-II (*N*=43,962). Because key variables for this study are derived from the education and health survey, the sample was further restricted to children whose mothers were respondents for this survey at both waves of the IHDS (*N*=33,114). Lastly, the sample was limited to 29,063 children who were not missing on all covariates. The final analyses samples differ for each research question and these are detailed in each subsequent section.

Measures

This section outlines the measures that are used for all research questions in this dissertation. Dependent and independent variables are discussed first, followed by a description of control variables at the individual, household, and community levels.

Dependent Variables

Investment in children's education. The outcome of interest in this study, investment in children's education, is operationalized based on two constructs: children's enrollment in school, and expenditures on children's education, conditional on enrollment. Enrollment is measured as a binary variable (0=not enrolled, 1=enrolled in

school). Total expenditures on children's education are measured as a composite variable that includes the sum of the annual amount spent on school fees; books, uniforms, transportation, and other materials; and private tuition. Because conditional expenditures may reflect differences in household resources, expenditures are also measured as a proportion of total household consumption for supplementary analyses. Additionally, for some analyses, expenditures are analyzed across all children including those not enrolled, who are assigned to Rs. 0. For other analyses, expenditures are considered only among those who are enrolled. Both enrollment and conditional expenditures are reported by mothers as part of the health and education survey of the IHDS-II.

Independent Variables

Mothers' education. In the IHDS-I, mothers' education is measured as the number of years of education completed by the mother, coded as a continuous variable (ranges between 0=none to 16=above bachelor's degree). For the purpose of this study, mothers' education was recoded as a categorical variable with four categories based on their highest level of schooling achieved (illiterate=0, primary=1, upper primary=2, secondary and above=3) as close to half of all children in the analytical sample have illiterate mothers. The analyses sought to assess the association between different education levels and investment in children's education. Mother's education is self-reported in the education and health survey in IHDS-I. Data on father's education is reported by the head of the household in IHDS-I and may be self-reported in certain cases.

Employment. Mother's employment is measured as a categorical variable (0=did not participate in the labor market, 1=agricultural worker, 2=non-agricultural worker).

This variable is recoded from the variable reporting mothers' occupation. Because mothers' employment is reported non-exclusively, the occupation variable had to be used to create mutually exclusive categories of mothers' employment. Mothers' employment is reported by the head of the household in IHDS-I. While ideally, we want to use mothers' self-reports of their employment, this is only available in the IHDS-II. In order to impose temporal ordering such that the independent variable (employment) is measured prior to the dependent variable (investment in children's education), employment will be measured at IHDS-I.

Covariates

The analyses include a rich set of child, mother, father, and community level factors that may confound the relationship between mother's education and employment and investment in children's education. All covariates are measured at IHDS-I to ensure that they are measured prior to the dependent variables at IHDS-II.

At the child-level, child's age, number of siblings, and the percentage of girls in a household is also added as a control. The receipt of government aid and subsidies for education influences parental investment in education and to control for this relationship, a measure for government aid is added to all models. This measure is derived from adding the annual amount of government sponsored fees, books, uniforms, and scholarship received by the child. Covariates at the mother-level include mother's age, measured as a continuous variable, and mothers' parents' education. Mothers' parents' education is measured as years of completed education (with a range of 0=none to 16=above bachelor's degree) for both parents. Fathers' education and paternal

grandparents' education measured as years of completed education (with a range of 0=none to 16=above bachelor's degree) are also included in all models. A measure for the nature of marital relationship between parents is also included as a covariate. This scale is developed by obtaining the mean of four dichotomous items (0=no, 1=yes) where the mother is asked if her husband and she go out by themselves, discuss work, finances, and community issues such as elections and politics.

The analyses also control for several factors that indicate the socioeconomic status of families. These include caste, religion, per capita consumption, and urban location (0=rural, 1=urban). Gender discrimination in parental investment in education varies by region and to control for this variation, dummy variables for all states and union territories in India are added to all models.

Sample Description

This section presents descriptive statistics for the sample at the child, parent, and household levels.

Children's characteristics

The first panel in Table 1 presents the descriptive statistics for all children in the sample and by child gender. Statistically significant differences by gender were identified using t-tests for continuous and binary variables and chi-square tests for categorical variables. Eighty-four percent of all children were enrolled in school. There was no difference in enrollment between boys and girls. The mean amount spent by parents on enrolled children's education in a given year was Rs. 4869.50. On average, parents spent

more on boys' education (Rs. 5382.30) than girls' education (Rs. 4289.44). This gender gap is also reflected in enrollment in private and English medium schools. Parents were more likely to send boys (32%) to private schools as compared to girls (26%). Boys (13%) were also more likely to attend English medium schools than girls (11%). Girls were more likely to attend schools that were closer to their residence (*M*=2.78 kilometers) as compared to boys (*M*=3.35 kilometers).

More than half of all enrolled students (60%) received government assistance for their education. Girls (63%) received more aid than boys (56%) owing to a number of government schemes that specifically target girls' elementary education. Although a substantial number of children receive government aid, the average amount of government assistance received (Rs. 284) is very low compared to the average amount of parental expenditure on children's education (Rs. 4870).

Descriptive data on children's characteristics shows a trend of son preference in the sample. Girls had more siblings than boys, although the difference is very small. They also lived in larger households with an average household size of 7 individuals for girls and 6 individuals for boys. Girls may end up in larger families with more siblings as parents may choose to continue having children until they have the desired number of sons. Larger families also have fewer resources. Girls resided in poorer households as compared to boys. The average per capita consumption was Rs. 657 for girls and Rs. 686 for boys. Girls were more likely to live in households that experienced poverty (33%) as compared to boys (31%). There was no difference in asset score, household income, household per capita income and birth rank between boys and girls.

Table 1: Descriptive statistics by child gender

Variables	Full Sample (*N*=29,063) % or Mean (SD)	Girls (*N*=13,668) % or Mean (SD)	Boys (*N*=15,395) % or Mean (SD)
Children's characteristics			
Enrolled in school[+]	0.84	0.84	0.84
Expenditures on education (*all children*) [+]***	4089.22 (8896.24)	3593.99 (7896.28)	4528.89 (9677.05)
Expenditures on education (*those enrolled*) [+]***	4869.50 (9510.29)	4289.44 (8451.87)	5382.30 (10329.53)
Government assistance in education (*those enrolled*) [+]***	0.60	0.63	0.56
Amount of government assistance (*those enrolled who received assistance)* [+]***	284.08 (889.89)	303.76 (829.56)	264.55 (945.64)
Attends private school (*those enrolled*) [+]***	0.29	0.26	0.32
Attends English medium school (*those enrolled)* [+]***	0.12	0.11	0.13
Distance to school (*those enrolled*) [+]***	3.09 (6.15)	2.78 (5.28)	3.35 (6.81)
No. of siblings***	2.22 (1.53)	2.32 (1.56)	2.13 (1.49)
Proportion of girls in household***	48.09	67.57	30.79
Oldest child of mother	0.30	0.30	0.29
Only child	0.06	0.05	0.07
Household size***	6.5 (2.46)	6.58 (2.45)	6.42 (2.47)
Assets	10.90 (5.80)	10.86 (5.78)	10.94 (5.82)
Household Income	45753.45 (72325.92)	45512.55 (64819.98)	45967.33 (78391.35)
Household Income per capita	7428.81 (10570.5)	7318.59 (10042.33)	7526.68 (11017.62)
Monthly Consumption per capita***	672.14 (572.11)	657.03 (543.69)	685.55 (595.89)
Living below poverty line***	0.32	0.33	0.30
Parent's characteristics			
Mother's education			
Illiterate	51.22	50.97	51.43
Primary	16.52	16.49	16.54
Upper Primary	12.83	13.05	12.63
Secondary & above	19.43	19.48	19.39
Father's education*			

Illiterate	28.23	27.69	28.71
Primary	18.41	18.19	18.61
Upper Primary	17.67	18.34	17.07
Secondary & above	35.69	35.78	35.61
Mothers' years of education (*continuous*)	3.76 (4.48)	3.79 (4.49)	3.73 (4.46)
Fathers' years of education (*continuous*)	5.97 (4.75)	6.03 (4.75)	5.92 (4.76)
Mothers' employment			
Not in the labor force	75.49	75.36	75.61
Agricultural Worker	16.26	16.09	16.41
Non-Agricultural Worker	8.25	8.55	7.98
Fathers' employment			
Not in the labor force	5.75	5.79	5.40
Agricultural Worker	30.25	30.88	30.60
Non-Agricultural Worker	63.99	63.33	64.00
Mother's age*	31.03 (6.06)	30.95 (6.05)	31.10 (6.05)
Nature of marital relationship**	1.15 (.57)	1.13 (.57)	1.16 (.57)
Mother's decision-making power	0.86 (.27)	0.86 (.27)	0.86 (.27)
Mother's belief in equal education**	0.88	0.88	0.87
Mother's beliefs in support for old age from girls/both children***	.08 (.26)	.13 (.32)	.04 (.18)
Paternal grandfather's education	2.29 (3.77)	2.30 (3.78)	2.27 (3.77)
Maternal grandfather's education	2.89 (4.19)	2.92 (4.20)	2.85 (4.18)
Paternal grandmother's education	.69 (2.08)	.70 (2.08)	.69 (2.07)
Maternal grandmother's education	1.05 (2.57)	1.06 (2.59)	1.03 (1.56)
Household characteristics			
Highest no. of years of education attained by adult household member*	6.76 (4.79)	6.83 (4.78)	6.70 (4.79)
Joint family	0.26	0.26	0.26
Caste			
Brahmin	4.33	4.43	4.24
Forward/General (except Brahmin)	21.22	20.93	21.48
OBC (Other Backward Classes)	41.18	41.4	40.98
Scheduled Caste	23.47	23.46	23.48
Scheduled Tribe	8.86	8.92	8.81

Others	0.94	0.86	1.01
Religion			
Hindu	79.05	78.87	79.2
Muslim	14.58	14.86	14.33
Sikh, Jain, Christian & Others	6.38	6.27	6.47
Urban Residence	0.29	0.29	0.29
Years lived in same place	75.53 (28.38)	75.53 (28.42)	75.53 (28.35)
Community norms around domestic violence	0.55 (.33)	0.55 (.33)	0.55 (.33)
Gender empowerment measure	0.47 (.05)	0.47 (.05)	0.47 (.05)
Gender development index**	0.59 (.07)	0.58 (.07)	0.59 (.07)

Table presents differences by child gender, *** p<0.001, ** p<0.01, * p<0.5. + Variables measured at wave 2, otherwise all variables measured at wave 1

Parents' Characteristics

The second panel of Table 1 presents the descriptive statistics for parents. Approximately half of all mothers were illiterate (51%). Seventeen percent of all mothers had attained primary education, 13% had attained upper primary education, and 19% had attained secondary or higher education. The majority of mothers (75%) were not participating in the labor force. Among mothers who were working, agriculture (16%) was the most common occupation, followed by non-agricultural occupations (9%). On average, mothers were thirty-one years old. Boys lived in families where mothers were more likely to report that they had a healthy marital relationship as compared to girls. A larger proportion of girls' mothers (88%) reported that they believed in equal education for boys and girls than boys' mothers (87%). Similarly, mothers with daughters (.013) were more likely to rely on daughters or both sons and daughters for support in old age compared to mothers with sons (.04). Mothers' reported high scores (0.86) on the decision-making power scale where mothers were asked to report if they were involved

in making decisions on a range of issues with other household members. There was no difference in mothers' decision-making power by child gender.

Fathers were more educated than mothers. On average, only 28% of fathers were illiterate as compared to 51% of all mothers. Eighteen percent of all fathers had attended primary or upper primary school and 36% had attained a secondary or higher education. Overall, fathers had two more years of education as compared to mothers. Few fathers (6%) were not participating in the labor market. Sixty-four percent of the fathers worked in non-agricultural occupations and 30% worked in agricultural occupations. Seventy-one percent of the sample resides in rural areas, so it is not surprising that most working mothers were engaged in agriculture.

Household Characteristics

The third panel of Table 1 presents household characteristics by child gender. The only significant differences in household characteristics by gender were for the highest education attained by an adult household member and the states' performance on the Gender Development Index (GDI). On average, the highest education attained by a household member is 7 years (upper primary school). Girls were more likely to live in households with a higher educated adult as compared to boys. Only 26% of the sample resides in joint families as opposed to nuclear families. A majority of the sample identifies as Hindu (79%), followed by Muslims (15%), and Sikh, Jain, Christian, and others (6%). Most of the sample (41%) identifies as Other Backward Classes (OBC), followed by 23% of Scheduled Castes (SC), 21% of forward castes, 9% Scheduled Tribes (ST), 4% Brahmins, and 0.9% others. Only 29% of the sample resides in urban areas and

most households have resided in the same area for seventy-six years. Lastly, boys were significantly more likely to live in households that were located in states with high scores on the GDI as compared to girls.

Structure of Subsequent Chapters

The next four chapters present the methods and results for each research question. Each chapter includes the statement of the specific questions answered in the chapters; measures; analytic strategy; results; sensitivity analyses; and summary of results.

Chapter 4: Mothers' Education and Employment and Investment in Children's Education

Research Question

This section explores the relationship between mothers' education and investment in children' education. First, are mothers' education and employment associated with children's enrollment is school? Second, does this relationship vary based on the gender of the child? Third, are mothers' education and employment associated with conditional expenditures on education? Lastly, does this relationship vary based on the gender of the child?

Sample

The sample for these analyses is restricted to children aged 6-19 years whose mothers were respondents for the education and health survey. The analytical sample varies based on the dependent variable. The sample for analyses with enrollment as the dependent variable includes 29,063 children whereas the sample for analyses with conditional expenditures as the dependent variable includes a smaller sample of 24,406 children. Analyses using the dependent variable of conditional expenditures on education is restricted to children who are enrolled in school to isolate the effect of mothers' education on investment alone.

Analytic Strategy

First, to understand the relationship between mothers' education and employment and enrollment, both logistic and Ordinary Least Squares (referred to as Linear Probability Models (LPM) when using a binary dependent variable) regression models

were estimated. The results from both LPM regression and logistic regression were similar. LPM results are presented because they are easier to interpret. They are also more flexible with regards to testing interaction effects as compared to logistic regression models (Karlson, Holm, & Breen, 2012; Mood, 2010). The first three models with the dependent variable of enrollment in school are estimated using LPM regression.

Models with the dependent variable of conditional expenditures on children's education are estimated using tobit analysis. Tobit analyses were chosen over OLS regression for multiple reasons. First, expenditures on children's education is a left censored variable where multiple observations have zero values. Second, it was not possible to take the log value of expenditures due to the high number of observations with a zero value, which would have made it easier to estimate a linear model like OLS regression. Lastly, OLS models are not ideal for left censored variables because the censored sample is not representative of the population and this may lead to biased parameter estimates (Cameron & Trivedi, 2008; Woolridge, 2013). Because tobit models produce coefficients for the latent variable which cannot be easily interpreted, marginal effects derived from post-estimation of tobit models are presented in this study. The marginal effects of the censored expected value, E(y*i), describe how the observed variable y*i changes with respect to the regressors (StataCorp, 2015). It should be noted that E(y*|x) is nonlinear with respect to x, and marginal effects are distinct from the estimates produced by OLS where a change in y*i occurs due to a one-unit change in x. Marginal effects denote the effect of a change in the regressors on the conditional mean of the dependent variable (Cameron & Trivedi, 2008). The marginal effects of the

censored expected value were chosen for this study to allow for the inclusion of observations with a zero value. The marginal effects indicate the extent to which mothers' education and employment increases observed expenditures among enrolled children in two separate tobit models.

Because the unit of analysis is the child and there may be multiple children within a household, standard errors are adjusted at the mother-level in all models to account for within household non-independence. Standard errors are adjusted at the mother level and not the household level because individuals can reside in joint families and such households contain multiple children from multiple families.

Results

Descriptive Results

Mothers' education and investment. Table 2 presents enrollment and conditional expenditures on children's education by mothers' education and child gender. Children with educated mothers are more likely to be enrolled as compared to children of illiterate mothers ($p<0.001$). Enrollment also increases with increases in mothers' education. Seventy-six percent of children with illiterate mothers are enrolled as compared to 97% of children with mothers who have a secondary or higher education. Children with educated mothers (all levels) had higher expenditures than children with illiterate mothers ($p<0.001$). The average child with an illiterate mother had an annual expenditure of Rs. 2711 in her education. Conversely, a child with a mother who had completed a secondary or higher education had three times more expenditures of Rs.

9905 in her education. The average expenditure on children's education is higher for every additional level of education attained by the mother (p<0.001).

Table 2: Investment in children's education by mothers' education and child gender

	Full Sample (N=29,063)	Girls (N=13,668)	Boys (N=15,395)	% Gender Gap
	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	
Enrollment [a]				
Illiterate	0.762	0.755	0.768	1.74
Primary	0.873	0.875	0.870	-0.51
Upper Primary	0.916	0.915	0.917	0.15
Secondary & above	0.967	0.972	0.962	-1.04*
Conditional expenditures [a]				
Illiterate	2711 (5684)	2227 (4363)	3129 (6588)	28.82***
Primary	3854 (7059)	3257 (7064)	4385 (7014)	25.74***
Upper Primary	5231 (9180)	4496 (8243)	5904 (9916)	23.84***
Secondary & above	9905 (14504)	9134 (12792)	10600 (15861)	13.83***

*Note: Percent gender gap was obtained by dividing the difference in mean enrollment for boys and girls by the mean enrollment for boys and multiplying this ratio by hundred. Differences in enrollment and expenditures by mothers' education were tested separately for the full sample, boys and girls. Illiterate mothers were the reference category, children of educated mothers had higher enrollment and expenditures, [a] p<0.001. The table also displays differences in enrollment and expenditures by child gender *p<.05, ***p<0.001.*

Table 2 also shows the gender gap in enrollment and conditional expenditures on children's education by mothers' education. The gender gap in enrollment is positive for girls with secondary or higher educated mothers (p<.05*).* Increases in mothers' education may be more beneficial for girls' enrollment than boys' enrollment. The gap in expenditures is lower among children with mothers who are educated as compared to children with illiterate mothers, 29% among children with illiterate mothers as compared to 14% among children with secondary or higher educated mothers. This gender difference in expenditures among children with illiterate mothers is almost double the difference among children with mothers with a secondary or higher education. Increases in mothers' education may be more beneficial for investment in girls' than boys' education.

Table 3: Investment in children's education by mothers' employment and child gender

	Full Sample (*N*=29,063)	Girls (*N*=13,668)	Boys (*N*=15,395)	% Gender Gap
	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	
Enrollment [a]				
Not in the labor force	0.86	0.86	0.87	0.86
Agriculture	0.75	0.76	0.75	-0.79
Other	0.80	0.80	0.79	-1.69
Conditional expenditures				
Not in the labor force	5409 (9892)	4748 (8791)	5988 (10732)	20.71***
Agriculture [b]	1859 (4144)	1658 (4218)	2035 (4071)	18.53**
Other	5122 (11561)	4615 (9843)	5613 (12996)	17.78

*Note: Differences in enrollment and expenditures by mothers' employment were tested for the full sample, boys, and girls. Non-working mothers were the reference category. For enrollment, all children of working mothers had lower rates of enrollment than working mothers ([a] $p<0.001$). For expenditures, only children of agricultural working mothers had lower expenditures ([b] $p<0.001$). The table also displays differences in enrollment and expenditures by child gender **$p<0.01$, ***$p<0.001$.*

Mothers' employment and investment. Descriptive data from table 3 indicates that children with working mothers were less likely to be enrolled in school ($p<0.001$). Children with agricultural working mothers had lower enrollment (75%) in school than children with mothers working in non-agricultural employment (80%). Children with agricultural working mothers had lower conditional expenditures on education as compared to children with non-working mothers and children with mothers working in non-agricultural employment ($p<0.001$). Because children with mothers working in agriculture come from low-income households, it is likely that poverty was the main driver behind lower enrollment and expenditures in this group (Table 4). Households with agricultural working mothers reported the lowest per capita consumption, completed years of education, and probability of experiencing poverty among different categories of mothers' employment.

Table 4: Socioeconomic characteristics of households by mothers' employment

	Per capita Consumption***	Years of education completed by mother***	Living in poverty***
Mothers' employment			
Not in the labor force	733.77	4.28	27
Agriculture	401.22	1.41	51
Other	642.23	3.69	39

*Note: Differences in socioeconomic characteristics by mothers' employment were tested, non-working mothers were reference category, *** $p<0.001$.*

Table 3 indicates that there is no significant difference in enrollment rates by child gender for different categories of mothers' employment. Boys had significantly higher conditional expenditures on education for children with non-working ($p<0.001$) and agricultural working mothers ($p<0.01$). The gender gap in expenditures was lower among children with mothers engaged in agriculture. Because children with mothers working in agriculture come from low-income households (Table 4), it is likely that the smaller gender gap reflects the lack of resources that can be distributed between children, rather than an absence of son preference.

Multivariate Results

Enrollment. Table 5 presents the multivariate results of models testing the relationship between mothers' education and employment and investment in children's education. Models exploring the relationship between mothers' education and enrollment are estimated using Linear Probability Models (LPM) whereas models exploring the association between mothers' education and investment in children's education are estimated using Tobit models (and presented as marginal effects). All models are

estimated using robust standard errors to account for multiple children in the same household.

Model 1 estimates the relationship between mothers' education and enrollment in school controlling for all of the previously discussed covariates in the methods section (Chapter 3). Mothers' education is positively associated with children's enrollment in school. Children with mothers who have completed primary school are 6 percentage points more likely to be enrolled in school compared to children with illiterate mothers. Children with mothers who have attained an upper primary education and a secondary or higher education are 6 and 5 percentage points more likely to be enrolled in school when compared to children with illiterate mothers.

Table 5: Mothers' education and employment and investment in children's education

	Linear Probability models DV: Enrolment			Tobit models DV: Investment among enrolled		
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Mother's Education (*omitted category: Illiterate*)						
Primary	0.062***		0.060***	-160.46		-162.70
	(0.006)		(0.006)	(100.92)		(100.62)
Upper Primary	0.062***		0.058***	38.19		34.91
	(0.007)		(0.007)	(136.76)		(137.21)
Secondary & above	0.047***		0.044***	1,444.05***		1,438.73***
	(0.007)		(0.007)	(181.05)		(180.73)
Mother's Employment (*omitted category: Not working*)						
Agriculture		-0.045***	-0.038***		-81.57	-45.77
		(0.008)	(0.008)		(101.15)	(100.91)
Other		-0.030***	-0.028**		105.82	46.34
		(0.009)	(0.009)		(191.60)	(188.39)
Female	-0.016***	-0.016***	-0.016***	-700.99***	-694.18***	-701.36***
	(0.005)	(0.005)	(0.005)	(80.41)	(80.65)	(80.43)
Mother's age	-0.001*	-0.002**	-0.001*	59.43***	64.06***	59.47***
	(0.001)	(0.001)	(0.001)	(8.62)	(8.69)	(8.65)
Maternal grandfather's education	0.002***	0.003***	0.002***	39.89**	55.64***	39.78**
	(0.001)	(0.001)	(0.001)	(13.46)	(13.47)	(13.47)
Maternal grandmother's education	-0.002**	-0.002**	-0.002**	153.32***	185.35***	153.44***
	(0.001)	(0.001)	(0.001)	(31.12)	(30.85)	(31.11)
Child's age	-0.033***	-0.033***	-0.033***	340.32***	330.91***	340.33***
	(0.001)	(0.001)	(0.001)	(15.52)	(15.50)	(15.52)
Siblings	-0.009***	-0.010***	-0.009***	-317.38***	-357.43***	-317.74***
	(0.002)	(0.002)	(0.002)	(33.27)	(34.35)	(33.32)
Proportion of girls in household	0.000*	0.000*	0.000*	1.85	1.85	1.86
	(0.000)	(0.000)	(0.000)	(1.53)	(1.55)	(1.53)
Father's education	0.012***	0.013***	0.011***	124.77***	153.48***	124.50***
	(0.001)	(0.001)	(0.001)	(11.32)	(11.52)	(11.43)

Paternal grandfather's education	0.001	0.002*	0.001*	81.42***	89.71***	81.55***
	(0.001)	(0.001)	(0.001)	(17.34)	(17.30)	(17.32)
Paternal grandmother's education	-0.003***	-0.004***	-0.003***	47.05	61.44	47.03
	(0.001)	(0.001)	(0.001)	(39.18)	(39.13)	(39.17)
Marital relations	0.009*	0.011**	0.010*	70.81	134.12	70.61
	(0.004)	(0.004)	(0.004)	(77.27)	(77.26)	(77.00)
Caste (*omitted category: Brahmin*)						
Forward/General (except Brahmin)	-0.008	-0.010	-0.009	524.37	536.64	525.63
	(0.008)	(0.008)	(0.008)	(299.86)	(301.09)	(299.56)
OBC	-0.023**	-0.025**	-0.022**	-61.36	-77.74	-59.31
	(0.008)	(0.008)	(0.008)	(277.99)	(279.62)	(278.13)
Scheduled Caste	-0.048***	-0.050***	-0.045***	-504.59	-532.91	-502.27
	(0.009)	(0.009)	(0.009)	(282.36)	(284.48)	(282.68)
Scheduled Tribe	-0.048***	-0.048***	-0.040***	222.72	259.62	228.10
	(0.012)	(0.012)	(0.012)	(299.92)	(303.25)	(300.29)
Others	-0.031	-0.035	-0.032	1,056.98	1,038.60	1,059.00
	(0.024)	(0.024)	(0.024)	(690.90)	(702.28)	(690.91)
Religion (*omitted category: Hindu*)						
Muslim	-0.084***	-0.087***	-0.086***	-427.56**	-456.62**	-429.90**
	(0.008)	(0.008)	(0.008)	(155.03)	(156.71)	(156.24)
Sikh, Jain, Christian & Others	-0.010	-0.009	-0.011	211.36	231.34	208.58
	(0.011)	(0.011)	(0.010)	(246.88)	(248.87)	(246.84)
Urban residence	0.006	0.007	0.003	849.36***	936.61***	842.62***
	(0.005)	(0.005)	(0.005)	(117.18)	(120.19)	(119.23)
Consumption per capita	0.002***	0.002***	0.002***	190.04***	198.07***	189.90***
	(0.000)	(0.000)	(0.000)	(16.64)	(16.96)	(16.68)
Government Aid	0.007***	0.007***	0.007***	22.01	22.07	21.98
	(0.001)	(0.001)	(0.001)	(16.31)	(16.34)	(16.30)
Constant	1.133***	1.164***	1.138***			
	(0.022)	(0.022)	(0.022)			
Observations	29,063	29,063	29,063	24,406	24,406	24,406
R-squared	0.221	0.218	0.222			

Note: Robust standard errors in parentheses, all models include dummy variables for all states and union territories in India.
**** p<0.001, ** p<0.01, * p<0.05*

Model 2 tests the relationship between mothers' employment and enrollment. Mothers' employment is negatively associated with children's enrollment in school. Children with mothers working in agriculture and non-agricultural occupations are 5 and 3 percentage points less likely to be enrolled in school than children with non-working mothers.

Model 3 includes both independent variables of mothers' education and employment and the coefficients for both variables remains strong after being simultaneously added to the same model. Holding all else constant, the positive association of mothers' education remains the same for most education categories, only the association of secondary and higher education is reduced by one percentage point

when mothers' employment is added to the model. In sum, children with mothers who received any education were significantly more likely to be enrolled in school as compared to children with illiterate mothers. Children with mothers who had attained a primary or upper primary education, and secondary or higher education were six and four percentage points more likely to be enrolled in school as compared to children with illiterate mothers. The enrollment figures for children with illiterate mothers was 76% (Table 2) suggesting that children with mothers who had attained a primary or upper primary education and secondary or higher education would have an enrollment rate of 82% and 80% respectively. Although, these enrollment figures are lower than the sample mean enrollment of 84%, they are relatively closer to the sample mean than the average enrollment for children with illiterate mothers at 76%. Post-hoc tests showed that there is no significant difference in enrollment among children of primary and upper primary educated mothers. Also, children of secondary or higher educated mothers had lower average enrollment than children with primary and upper primary educated mothers.

In Model 3, where both mothers' education and employment are added to the same model, the negative association of mothers' non-agricultural labor remains stable when mothers' education is also added to the same model. The coefficient for agricultural working mothers reduces marginally when education is also added to the model. Children with mothers engaged in agricultural and non-agricultural labor were 4 and 3 percentage points less likely to be enrolled in school as compared to children with non-working mothers. The mean enrollment for children with non-working mothers was 86% (Table 3) suggesting that 79% of children with mothers working in agriculture and 83% of children

with mothers working in other occupations would be enrolled in school. Although there is a difference in average enrollment for the two types of mothers' employment, post-hoc tests revealed that the difference is not significant. Only children with non-working mothers have enrollment figures higher than the sample mean of 84%.

Across all models, several covariates are significantly associated with enrollment. Children with educated fathers, paternal, and maternal grandfathers, children with parents who have a healthy marital relationship, received government aid for education, and came from families with higher consumption were more likely to be enrolled in school. Female children, children who were older, had siblings, were Muslim, and belonged to Other Backward Classes (OBC), Scheduled Castes (SC), or Scheduled Tribes (ST) were less likely to be enrolled in school.

Conditional expenditures. Model 4 provides the marginal effects from a tobit model that estimates the relationship between mothers' education and conditional expenditures on education for children enrolled in school (censored dependent variable). Children with mothers who have a secondary or higher education have Rs. 1444 more expenditures on their education as compared to children with illiterate mothers. The significant positive marginal effect of mothers' education (secondary or higher) slightly reduces to Rs. 1439 after adding mothers' employment to the model. As the mean expenditures for children with illiterate mothers was Rs. 2711 (Table 2), children with mothers who have attained a secondary or higher education would have approximately Rs. 4150 invested in their education. While this amount of expenditures is relatively lower than the sample mean for the cost of education for all enrolled children at Rs. 4870,

it is considerably closer to the mean than the average expenditures on children with illiterate mothers at Rs. 2711.

Several covariates were significantly associated with conditional expenditures on children's education. On average, female children, children with siblings, Muslim, and SC children have lower expenditures whereas children from families with educated fathers, grandparents, and higher per capita consumption have expenditures. Conditional expenditures on children's education also increased with an increase in both mothers' and children's age. Lastly, parents were more likely to spend more in urban areas as compared to rural areas.

There were differences in the relationships between certain covariates and the two dependent variables of enrollment and conditional expenditures on children's education. First, both children's and mothers' age were negatively associated with enrollment and positively associated with expenditures. Second, while receipt of government aid had a positive relationship with enrollment, it was not associated with expenditures on education. Lastly, children living in urban areas had higher expenditures as compared to children living in rural areas. However, there was no difference in enrollment based on location.

Moderation analyses. This section explores the role of child gender as a moderator in the relationship between mothers' education and employment and investment in children's education. Results are presented as graphs to make interpretation of these effects more intuitive and show marginal effects and 95% confidence intervals

around each estimate. The figures for enrollment as the dependent variable were obtained from post estimation of LPM models and the figures for expenditures on education among enrolled children were obtained from post estimation of Tobit models. All models included both independent variables of mothers' education and employment, and all other covariates.

Figure 8: Mothers' education and enrollment by child gender

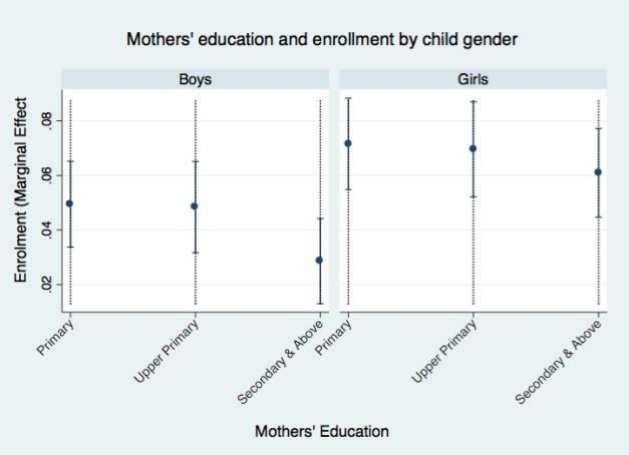


Figure 8 shows the relationship between mothers' education and children's enrollment in school by child gender. The marginal effect of mothers' education is significantly more positive for girls' enrollment for mothers with primary and secondary and above education as compared to boys whose mothers have attained a primary or secondary and above education. While boys with mothers who had a primary and secondary and above education were almost five and three percentage points more likely to be enrolled as compared to boys with illiterate mothers, girls with mothers who had completed primary education and secondary and above education were seven and six

percentage points more likely to be enrolled in school as compared to girls with illiterate mothers.

Figure 9: Mothers' education and expenditures by child gender

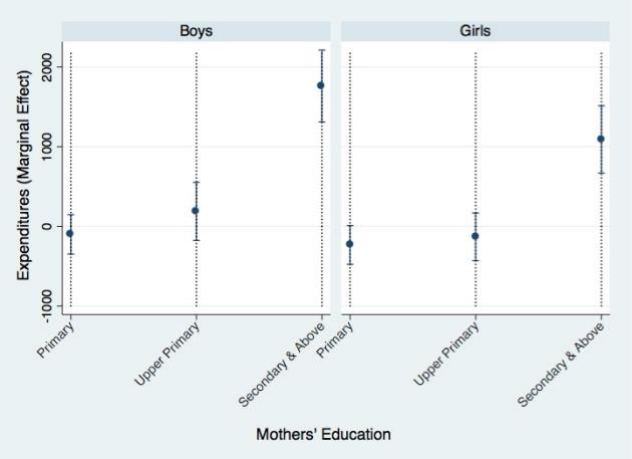


Figure 9 shows the relationship between mother's education and conditional expenditures on children's education by child gender. The marginal effect of mothers' secondary or higher education (vs. illiterate mothers) is significantly more positive for boys' expenditures as compared to girls. Boys with mothers who have completed a secondary or above education had Rs. 1761 more expenditures than boys with illiterate mothers. On the other hand, girls whose mothers had attained a secondary or above education had an additional expenditure of Rs. 1092 when compared to girls with illiterate mothers. While increases in mothers' education was beneficial for both boys and girls, among children with mothers who had a secondary or higher education, boys gained more from their mothers' education than girls.

Sensitivity Analyses

A number of child and mother level variables and sample subgroups were examined for sensitivity analyses. The tables for these analyses are located in the appendices.

First, conditional expenditures on education may reflect existing differences in household resources. In order to test this assumption, expenditures on children's education is measured as a proportion of household consumption and is used as a dependent variable. Children with mothers with an upper primary and secondary and above education have significantly higher expenditures on education as compared to children with illiterate mothers. Mothers' upper primary education has a positive association only with this relative measure of expenditures; it was not positively associated with expenditures in the main analyses. The association of mothers' education with this relative measure of expenditures does not vary by the gender of the child whereas analysis with the non-relative measure of expenditures found that the association between mothers' secondary or higher education and expenditures was more positive for boys than girls.

Second, child's height for weight and mothers' height for weight are added to the main model with the dependent variable of conditional expenditures on children's education. Child and mothers' height for weight reflects the amount of resources available in the household and may be associated with conditional expenditures on children's education. These two variables are both available for a smaller subsample of 15,673 children. Both these variables are first added separately and then added together

to the fully controlled model. Even after adding these two variables, mothers' education, specifically secondary and above education, remains significantly associated with expenditures (p<0.001). While mothers' height for weight was not associated with expenditures, children's height for weight was positively associated with conditional expenditures.

Third, the analyses are replicated with a subsample of 20,127 children who reside in families with mixed sex children to assess gender differences in conditional expenditures on education within the same household. The results from these analyses are similar to the main analyses. In this subsample, mothers' education, specifically secondary and above education, remains significantly associated with expenditures (p<0.001). The association between mothers' education and expenditures does not vary by child gender, whereas in the main analyses, the association between mothers' secondary or above education and expenditures was more positive for boys. These results suggest that within households with mixed sex children, mothers' secondary or higher education is equally beneficial for expenditures on girls' and boys' education.

Next, the effect of mothers' education was assessed separately by child's birth rank and number of siblings. These analyses were based on two findings from prior research. First, studies on investment in children's education in India have found that the eldest son has the highest amount of parental investment as parents hope that the eldest son will care for them in their old age. Second, in areas where son preference is prevalent, girls who are only children experience less gender discrimination. Girls who reside in larger families are more prone to gender discrimination. These analyses sought

to assess similar trends for this study. The positive association between mothers' secondary or higher education and conditional expenditures remained stable for all sub samples. There was no significant difference by child gender in the association between mothers' education and expenditures among only children or eldest born children. Only among second born or older children with siblings, the association between mothers' secondary or higher education and expenditures was more positive for boy children, similar to the main analyses.

For all subsamples, there was a significant positive association between mothers' secondary and above education and conditional expenditures on children's education, similar to the main analyses. The marginal effect of mothers' secondary and above education on expenditures is highest among only children as compared to subsamples of eldest children, children with siblings, and second or later born children. Eldest children and only children benefitted the most from mothers' higher education. Moderation analyses by child gender revealed that the association between mothers' education and expenditures on education did not vary by gender of the child for either only children or mothers' eldest child. The positive association between mothers' secondary or higher education was less positive for girls who were second or older born children. This suggests that girls who are only children or the eldest child in the household are less likely to experience gender-based discrimination in conditional expenditures on education.

Summary of Results

The results presented in this chapter suggest that mothers' education is positively associated with investment in children's education. Children with mothers who received any education were significantly more likely to be enrolled in school as compared to children with illiterate mothers. For conditional expenditures on children's education, there was a significant positive association between mothers' secondary and above education and expenditures on education. While increases in mothers' education benefitted both boys and girls, the association between mothers' secondary and above education and expenditures was more positive for boys.

Sensitivity analyses revealed that only children and first-born children gained the most from increases in mothers' education. Moderation analyses by child gender showed that the association between mothers' higher education and conditional expenditures was more positive for second or later born boy children. There was no significant difference in the association between mothers' education and expenditures by child gender for only children or mothers' eldest child. Girls who are only children or the eldest children are less likely to experience gender discrimination.

Mothers' employment had a negative association with enrollment. Children with mothers working in both agricultural and non-agricultural occupations were less likely to be enrolled in school as compared to children of non-working mothers. Mothers' employment was not significantly associated with conditional expenditures on children's education.

In sum, the results from this section indicate that mothers' education is beneficial for parental investment in children's education. Mother's employment was negatively associated with children's enrollment in school. Results also suggest that enrollment and expenditures are very different constructs.

Chapter 5: Mothers' Education and Employment and Investment in Children's Education by Children's Age

Research Question

This section explores the relationship between mothers' education and investment in children' education for three groups of children aged 6-9 years, 10-14 years, and 15-19 years. The cutoffs correspond with the ages that children typically attend primary, upper primary, and senior secondary or high school and have been utilized in prior research on gender differentials in parental investment in education (Azam & Kingdon 2013). Each of the following research questions are examined separately for each age group. First, are mothers' education and employment associated with children's enrollment is school? Second, does this relationship vary based on the gender of the child? Third, are mothers' education and employment associated with conditional expenditures on education? Lastly, does this relationship vary based on the gender of the child?

Sample

The sample for these analyses is restricted to three groups of children aged 6-9 years, 10-14 years, and 15-19 years, whose mothers were respondents for the education and health survey at both IHDS-I and IHDS-II. The analytical sample varies based on the dependent variable and the age category. The sample for analyses with enrollment as the dependent variable includes 5,906 children aged 6-9 years, 12,501 children aged 10-14 years, and 10,656 children aged 15-19 years. For analyses with the dependent variable of conditional expenditures on education, the sample includes 5,644 children aged 6-9 years, 11,547 children aged 10-14 years, and 7,215 children aged 15-19 years. Analyses using

the dependent variable of expenditures is restricted to children who are enrolled in school to isolate the effect of mothers' education on investment alone.

Analytic Strategy

All models with the dependent variable of enrollment in school are estimated using LPM regression. Models with the dependent variable of conditional expenditures on children's education are estimated using tobit analysis. Because the unit of analysis is the child and there may be multiple children within a household, standard errors are adjusted at the mother-level in all models to account for within household non-independence.

Results

Descriptive Results

Table 6 presents enrollment and expenditures for each age group by child gender. While enrollment decreases as children get older, conditional expenditures on education increase with children's age ($p<0.001$). Turning to gender differences, there is no significant difference in enrollment by gender in the 6-9 and 15-19 age groups. However, there is a significant difference in the enrollment rate by child gender for the 10-14 years category. Boys had 1.83 percent higher enrollment in this age category ($p<0.001$). Parents invest more in boys' than girls' education for all age categories ($p<0.001$). The gender gap in investment is lower among children aged 15-19 years as compared to children aged 6-9 and 10-14 years.

Table 6: Investment in children's education by child age and gender

	Full Sample	Girls	Boys	% Gender Gap
	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	
Enrollment [a]				
Age 6-9 years	0.956	0.955	0.956	0.13
Age 10-14 years	0.924	0.915	0.932	1.83***
Age 15-19 years	0.677	0.678	0.677	-0.14
Expenditures [a]				
Age 6-9 years	2950 (5878)	2588 (5820)	3286 (5913)	21.24***
Age 10-14 years	3344 (6446)	2898 (5153)	3744 (7394)	22.60***
Age 15-19 years	5593 (12013)	5012 (10896)	6091 (12872)	17.71***

*Note: Percent gender gap was obtained by dividing the difference in mean enrollment for boys and girls by the mean enrollment for boys and multiplying this ratio by hundred. Differences in enrollment and expenditures by children's age were tested for the full sample, boys, and girl where 6-9 years was the reference category, [a] $p<0.001$. Enrollment was lower for all groups whereas expenditures were higher for all age groups compared to children who were 6-9 years (the reference category) at [a] $p<0.001$. The table also displays differences in enrollment and expenditures by child gender ***$p<0.001$.*

Mothers' education. Table 7 presents enrollment in school by mothers' education and child gender for all three age groups. Enrollment is higher among children with higher educated mothers. Bivariate regressions testing the relationship between mothers' education and enrollment (for each age group) revealed that enrollment rates are higher for all categories of educated mothers compared to non-educated mothers across all age groups ($p<0.001$). The difference in enrollment between children with non-educated and educated mothers is higher among older children. Additionally, the difference in enrollment between children with illiterate and secondary or higher educated mothers among children 15-19 years was five times more (37 percentage points) than the gap in enrollment among children aged 6-9 years (6 percentage points).

Table 7 also presents the gender gap in enrollment by mothers' education and children's age. The gender gap in enrollment is lower for children with educated mothers than children with illiterate mothers. This gap also varies by children's age. Gender gaps are smaller in the 6-9 years age group as compared to the 10-14 and 15-19 years age

groups. There was a significant difference in enrollment between girls (86%) and boys (88%) among children with illiterate mothers in the age group 10-14 years. There was also a significant positive gender gap among children 15-19 years with secondary and higher educated mothers where girls had higher enrollment (94%) than boys (90%). In sum, mothers' education is beneficial for children's enrollment in school and girls gain more from mothers' education at higher ages.

Table 7: Enrollment in school by mothers' education, child age and gender

	Full Sample	Girls	Boys	% Gender Gap
	%	%	%	
Age 6-9 years [a]	*N*=5,906	*N*=2,845	*N*=3,061	
Illiterate	0.928	0.927	0.930	0.33
Primary	0.979	0.983	0.975	-0.87
Upper Primary	0.979	0.979	0.979	0.06
Secondary & above	0.987	0.986	0.987	0.15
Age 10-14 years [a]	*N*=12,501	*N*=5,910	*N*=6,591	
Illiterate	0.875	0.860	0.888	3.21***
Primary	0.956	0.952	0.959	0.73
Upper Primary	0.974	0.969	0.978	0.84
Secondary & above	0.988	0.988	0.987	-0.05
Age 15-19 years [a]	*N*=10,656	*N*=4,913	*N*=5,743	
Illiterate	0.551	0.537	0.563	4.59
Primary	0.730	0.735	0.726	-1.19
Upper Primary	0.810	0.809	0.810	0.07
Secondary & above	0.922	0.940	0.905	-3.94***

*Note: Differences in enrollment by mothers' education were tested for the full sample, girls, and boys. Children of educated mothers had higher enrollment for all age groups, compared to illiterate mothers (the reference category) at [a] p<0.001. The table displays also differences in enrollment by child gender ***p<0.001.*

Table 8: Conditional expenditures on children's education by mothers' education, child age and gender

	Full Sample	Girls	Boys	% Gender Gap
	Mean (SD)	Mean (SD)	Mean (SD)	
Age 6-9 years [a]	*N*=5,906	*N*=2,845	*N*=3,061	
Illiterate	1213 (2181)	1056 (1913)	1362 (2399)	22.47***
Primary	2178 (3768)	1680 (3045)	2619 (4262)	35.85***
Upper Primary	3191 (5197)	2806 (5169)	3566 (5204)	21.31*
Secondary & above	7468 (9563)	6815 (10010)	8054 (9112)	15.38***
Age 10-14 years [a]	*N*=12,501	*N*=5,910	*N*=6,591	
Illiterate	1923 (3730)	1621 (2569)	2188 (4490)	25.9***

Primary	2783 (4818)	2236 (3210)	3279 (5865)	31.8***
Upper Primary	3796 (5380)	3175 (4552)	4365 (5986)	27.26***
Secondary & above	7935 (10548)	7399 (8498)	8393 (12010)	11.84***
Age 15-19 years [a]	*N*=10,656	*N*=4,913	*N*=5,743	
Illiterate	5402 (8855)	4487 (7070)	6121 (9980)	26.69***
Primary	6471 (10039)	5780 (11186)	7071 (8888)	18.26*
Upper Primary	8749 (13681)	7715 (12421)	9658 (14649)	20.12*
Secondary & above	14810 (20490)	13328 (17726)	16263 (22796)	18.05***

*Note: Differences in expenditures by mothers' education were tested for the full sample, girls, and boys. Children of educated mothers had higher expenditures for all age groups, compared to illiterate mothers (the reference category) at [a] p<0.001. The table displays also differences in expenditures by child gender ***p<0.001, *p<0.05*

Table 8 presents conditional expenditures on children's education among enrolled children by mothers' education, child gender, and age. Mothers' education is beneficial for investment in education. Across all three age groups, bivariate regression models indicate that children with educated mothers (any level) have higher rates of expenditures than children with illiterate mothers ($p<0.001$). Children with secondary or higher education have approximately six times more expenditures than children with illiterate mothers for all three age groups. The difference in expenditures between children with non-educated mothers and children with mothers who attained secondary or higher education is Rs. 6242, Rs. 61555, and Rs. 10,678 respectively in the 6-9, 10-14, and 15-19 years age groups. Boys have significantly higher expenditures than girls across all age groups and categories of mothers' education. The gender gap in expenditures is consistently lower among children with secondary or higher educated mothers as compared to children with mothers who are less educated or illiterate for all three age groups. Overall, mothers' education is advantageous for expenditures in enrolled children's education and boys have higher expenditures than girls.

Mothers' employment. Table 9 presents rates of enrollment by mothers' employment. Bivariate regression analyses (for each age group) revealed that children with working mothers had lower rates of enrollment than children with working mothers in the age groups of 10-14 and 15-19 years ($p<0.001$). The gender gap in enrollment was higher among children of working mothers in the age groups 6-9 and 10-14 years whereas in the age group 15-19 years, girls whose mothers had non-agricultural occupations had significantly higher enrollment (67%) as compared to boys (60%). Among children aged 10-14 years, whose mothers were not working, boys were more likely to have been enrolled (94%) than girls (93%). In the same age group, among children with mothers working in agriculture, boys were more likely to be enrolled (89%) than girls (86%). In sum, mothers' employment has a negative relationship with children's enrollment in school.

Table 9: Enrollment in school by mothers' employment, child age and gender

	Full Sample	Girls	Boys	% Gender Gap
	%	%	%	
Age 6-9 years	*N*=5,906	*N*=2,845	*N*=3,061	
Not in the labor force	0.958	0.955	0.960	0.47
Agriculture	0.947	0.963	0.931	-3.35
Other	0.949	0.938	0.961	2.44
Age 10-14 years	*N*=12,501	*N*=5,910	*N*=6,591	
Not in the labor force	0.937	0.931	0.942	1.12*
Agriculture [a]	0.876	0.856	0.894	4.25***
Other [a]	0.898	0.883	0.912	3.10
Age 15-19 years	*N*=10,656	*N*=4,913	*N*=5,743	
Not in the labor force	0.717	0.712	0.722	1.34
Agriculture [a]	0.530	0.527	0.533	1.12
Other [a]	0.634	0.667	0.603	-10.65*

*Note: Differences in enrollment by mothers' education were tested for the full sample, girls, and boys. Children of employed mothers had lower enrollment for all age groups, compared to illiterate mothers (the reference category) at [a] $p<0.001$. The table displays also differences in enrollment by child gender ***$p<0.001$, *$p<0.05$.*

Table 10: Conditional expenditures by mothers' employment, child age and gender

	Full Sample	Girls	Boys	% Gender Gap
	Mean (SD)	Mean (SD)	Mean (SD)	
Age 6-9 years	*N*=5,906	*N*=2,845	*N*=3,061	
Not in the labor force	3478 (5965)	3037 (5397)	3877 (6411)	21.67***
Agriculture [a]	779 (1740)	698 (1860)	864 (1603)	19.24
Other	3010 (9405)	3097 (12452)	2924 (4791)	-5.91
Age 10-14 years	*N*=12,501	*N*=5,910	*N*=6,591	
Not in the labor force	4153 (7144)	3640 (5711)	4602 (8170)	20.90***
Agriculture [a]	1173 (1879)	1050 (1529)	1282 (2136)	18.10***
Other [a]	3360 (6482)	2858 (5089)	3820 (7510)	25.18*
Age 15-19 years	*N*=10,656	*N*=4,913	*N*=5,743	
Not in the labor force	8939 (14274)	7930 (13186)	9804 (15093)	19.11***
Agriculture [a]	3964 (6875)	3771 (7507)	4109 (6360)	8.23
Other	8913 (16420)	7857 (11834)	10007 (20057)	21.48

*Note: Differences in expenditures by mothers' employment were tested for the full sample, girls, and boys. Children of mothers employed in agriculture had lower enrollment for all age groups, compared to non-working mothers (the reference category) at [a] $p<0.001$. The table also displays differences in expenditures by child gender ***$p<0.001$, *$p<0.05$*

Conditional expenditures on children's education is higher among children with non-working mothers as compared to mothers who are working in agriculture. Among children aged 6-9 and 15-19 years, educational expenditures were significantly lower for children of mothers working in agriculture as compared to children with non-working mothers ($p<0.001$). There was no difference in expenditures among children with non-working mothers and children with mothers working in occupations other than agriculture. Among children aged 10-14 years, expenditures were lower for children with working mothers (agriculture and other occupations) compared to children with non-working mothers. There was a significant gender gap among children with non-working mothers across all three age groups suggesting that non-working mothers may be more likely to live in families that discriminate against their daughters. In the 10-14 years age

group, there is a significant difference in expenditures among boys and girls across all employment categories.

Overall, Table 10 indicates that mothers' employment in agriculture may not be beneficial for conditional expenditures on children's education. Across all three age groups, children with mothers working in agriculture had lower rates of enrollment and expenditures than children with mothers in non-agricultural occupations and non-working mothers. Poverty may be the driving force behind educational investment among children with mothers working in agricultural occupations, as discussed in the previous chapter.

Multivariate Results

Enrollment. Table 11 presents the multivariate results of models testing the relationship between mothers' education and conditional expenditures on children's education across the three age groups. All models control for all of the previously discussed covariates in the methods section (Chapter 3). Model 1 estimates the relationship between mothers' education and enrollment for children aged 6-9 years. Here, only children with primary educated mothers are (two percentage points) more likely to be enrolled in school as compared to children with illiterate mothers. Conversely, across the other two age groups, all children with educated mothers (any level) have higher rates of enrollment than children with illiterate mothers. Model 4 estimates the relationship between mothers' education and enrollment for children aged 10-14 years. In this age group, children with primary or upper primary educated mothers are four percentage points more likely to be enrolled in school as compared to children with illiterate mothers. Children with secondary or above educated mothers are two

percentage points more likely to be enrolled in school. Post-hoc tests revealed that there was no difference in the rates of enrollment between children with mothers with primary or upper primary education. However, rates of enrollment were significantly lower among children with secondary or higher educated mothers compared to children with primary or upper primary educated mothers. Model 7 estimates the relationship between mothers' education and enrollment for children aged 15-19 years. Here, children with mothers with a primary and upper primary education are 10 and 11 percentage points more likely to be enrolled in school than children of illiterate mothers. Children with secondary and above educated mothers are 13 percentage points more likely to be enrolled in school as compared to children with non-educated mothers. Post-hoc tests indicated that there was no significant difference in enrollment rates between children with educated mothers with different levels of education. While mothers' education is beneficial for children's enrollment for all age groups, the protective effect of mothers' education is highest among children aged 15-19 years, based on the size of the coefficients for different levels of mothers' education across the three age groups.

Model 2 estimates the relationship between mothers' employment and enrollment in school for children aged 6-9 years. In this age category, mothers' employment is not significantly associated with enrollment in school. Mothers' employment has a negative relationship with enrollment only among the higher age groups. Model 5 tests the association between mothers' employment and enrollment for children aged 10-14 years. Here, children with mothers working in agricultural occupations are three percentage points less likely to be enrolled in school as compare to children with non-working

mothers. Post-hoc tests for group difference revealed that there is no significant difference in enrollment rates between mothers with agricultural and other occupations. Model 8 estimates the relationship between mothers' employment and enrollment in school for children aged 15-19 years. In this category, mothers working in agriculture and other occupations are nine and five percentage points less likely to be enrolled in school as compare to children with non-working mothers. Post-hoc tests for group difference revealed that there is no significant difference in enrollment rates between mothers with agricultural and other occupations. In sum, the relationship between mothers' employment and children's enrollment in school is more negative for older children than younger children. Additionally, among children with working mothers, there is no significant difference in enrollment rates by types of mothers' employment.

Models 3,6, and 9 include both the independent variables of mothers' education and employment. Model 3 estimates the relationship between mothers' education and employment and enrollment among children aged 6-9 years. In this group, the positive association of mothers' primary education (.02 percentage points) remains the same even after mothers' employment is added to the model. Model 6, for children aged 10-14 years, includes both predictors and here too the coefficients for all categories of mothers' education remains stable when mothers' employment is added to the model. Model 9 estimates the same relationship among children aged 15-19 years, and in this model the coefficients for mothers' upper primary and secondary and above education reduce by one percentage point once mothers' employment is also added to the same model. In this

model, children with upper primary and secondary and above educated mothers are 10 and 12 percentage points more likely to be enrolled in school.

Turning to changes in mothers' employment in the fully controlled models, among children aged 10-14 years (Model 6), when both mothers' education and employment are included as predictors, the negative association between mothers' agricultural and other labor and enrollment remains stable when mothers' education is also added to the same model. Children with mothers engaged in agricultural and other labor were three and two percentage points less likely to be enrolled when compared to mothers who were not working. Model 9 also includes both the independent variables and the coefficient for mothers' agricultural employment reduces by one percentage point once mothers' education is added to the model. There is no change in the coefficient for mothers working in occupations other than agriculture. Children with mothers working in agriculture and other occupations were seven and five percentage points less likely to be enrolled in school when compared to mothers who were not working.

Across all models, several covariates are significantly associated with enrollment, and the relationship between each covariate and the dependent variable, enrollment, often differed by age. While enrollment increases with an increase in children's age at 6-9 years, the relationship between children's age and enrollment is negative for higher age groups. Every one-year increase in age is associated with a five-percentage point decrease in the probability of enrollment. Enrollment also varies by gender. Only girls aged 10-1 years have lower enrollment than boys. Girls are eligible for free elementary education in government schools which may account for the lack of gender difference in

enrollment rates at 6-9 years. Enrollment is lower for girls aged 10-14 years (0.3 percentage points) than girls as compared to boys. As girls get older, parents are likely to get them married and so they may drop out of school. The cost of education also increases with age and the lack of government aid for secondary and higher education for girls may prompt parents to take girls out of school.

Children who identify as Scheduled Caste (SC), Scheduled Tribe (ST), and Muslim have lower enrollment across all age groups. Children with educated fathers, maternal grandfathers, and those who receive government assistance for education have higher enrollment in school. Consumption per capita is positively associated with children's enrollment in school among children aged 10-19 years. Mothers age has a negative relationship with enrollment for the 15-19 age group. Lastly, number of siblings are negatively associated with enrollment for children aged 10-19 years.

Table 11: Relationship between mothers' education and employment and enrollment by child age

	Linear Probability models								
	6-9 years			10-14 years			15-19 years		
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Mother's Education (*omitted category: illiterate*)									
Primary	0.021**		0.021**	0.043***		0.041***	0.101***		0.097***
	(0.007)		(0.007)	(0.006)		(0.006)	(0.013)		(0.013)
Upper Primary	0.008		0.008	0.039***		0.036***	0.111***		0.103***
	(0.008)		(0.008)	(0.007)		(0.007)	(0.014)		(0.014)
Secondary & above	-0.005		-0.005	0.019**		0.017*	0.125***		0.121***
	(0.008)		(0.008)	(0.007)		(0.007)	(0.015)		(0.015)
Mother's Employment (*omitted category: Not working*)									
Agriculture		0.002	0.002		-0.034***	-0.030**		-0.086***	-0.074***
		(0.010)	(0.010)		(0.009)	(0.009)		(0.014)	(0.014)
Other		-0.010	-0.009		-0.022*	-0.020		-0.052***	-0.052***
		(0.012)	(0.012)		(0.010)	(0.010)		(0.016)	(0.015)
Female	-0.008	-0.008	-0.008	-0.026***	-0.026***	-0.026***	-0.018	-0.018	-0.019
	(0.008)	(0.008)	(0.008)	(0.006)	(0.006)	(0.006)	(0.010)	(0.010)	(0.010)
Mother's age	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002**	-0.003**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Maternal grandfather's education	0.001	0.001	0.001*	0.001*	0.002**	0.001*	0.003*	0.005***	0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Maternal grandmother's education	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.003	-0.001	-0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Child's age	0.005*	0.005*	0.005*	-0.019***	-0.019***	-0.019***	-0.047***	-0.046***	-0.047***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Siblings	-0.003	-0.002	-0.003	-0.012***	-0.013***	-0.012***	-0.020***	-0.024***	-0.021***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Proportion of girls in household	0.000	0.000	0.000	0.000*	0.000*	0.000*	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Father's education	0.005***	0.005***	0.005***	0.007***	0.008***	0.007***	0.021***	0.023***	0.020***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Paternal grandfather's education	0.001	0.001	0.001	0.001	0.001	0.001	0.003*	0.004**	0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

Paternal grandmother's education	-0.001	-0.001	-0.001	-0.002*	-0.003**	-0.002*	-0.004	-0.004	-0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Marital relations	0.010	0.010	0.010	0.008	0.009	0.009	0.004	0.010	0.006
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.009)	(0.009)	(0.009)
Caste (*omitted category: Brahmin*)									
Forward/General (except Brahmin)	0.010	0.009	0.010	0.002	0.002	0.002	-0.005	-0.011	-0.007
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.017)	(0.017)	(0.017)
OBC	-0.012	-0.013*	-0.012	-0.003	-0.004	-0.003	-0.017	-0.024	-0.016
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)	(0.017)	(0.017)	(0.017)
Scheduled Caste	-0.018*	-0.019*	-0.017*	-0.028**	-0.029**	-0.026**	-0.055**	-0.059**	-0.048*
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)	(0.019)	(0.019)	(0.019)
Scheduled Tribe	-0.029*	-0.031*	-0.029*	-0.035**	-0.034**	-0.029*	-0.056*	-0.057*	-0.042
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)	(0.024)	(0.024)	(0.024)
Others	0.016	0.014	0.016	-0.013	-0.012	-0.013	-0.031	-0.050	-0.036
	(0.021)	(0.021)	(0.021)	(0.028)	(0.028)	(0.028)	(0.046)	(0.046)	(0.046)
Religion (*omitted category: Hindu*)									
Muslim	-0.031**	-0.031**	-0.031**	-0.050***	-0.052***	-0.052***	-0.156***	-0.159***	-0.159***
	(0.012)	(0.012)	(0.012)	(0.010)	(0.010)	(0.010)	(0.016)	(0.016)	(0.016)
Sikh, Jain, Christian & Others	-0.027	-0.026	-0.026	-0.019	-0.019	-0.019	-0.002	0.004	-0.003
	(0.014)	(0.014)	(0.014)	(0.011)	(0.012)	(0.011)	(0.020)	(0.020)	(0.020)
Urban residence	0.003	0.003	0.004	-0.005	-0.006	-0.008	0.019	0.020	0.011
	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.010)	(0.010)	(0.010)
Consumption per capita	0.000	-0.000	0.000	0.001**	0.001*	0.001**	0.004***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Government Aid	0.007***	0.007***	0.007***	0.010***	0.010***	0.010***	0.007***	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.972***	0.982***	0.972***	1.082***	1.102***	1.085***	1.323***	1.386***	1.342***
	(0.023)	(0.023)	(0.023)	(0.026)	(0.026)	(0.026)	(0.050)	(0.050)	(0.050)
Observations	5,906	5,906	5,906	12,501	12,501	12,501	10,656	10,656	10,656
R-squared	0.058	0.056	0.058	0.109	0.107	0.111	0.244	0.239	0.247

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Conditional expenditures. Table 12 presents the marginal effects from multiple tobit models estimating the relationship between mothers' education and employment and conditional expenditures on children's education. Model 1 tests for the relationship between mothers' education and expenditures among children aged 6-9 years. Children with mothers who had secondary or higher education had Rs. 1812 more expenditures as compared to children with illiterate mothers. Model 4 tests for the same relationship with children aged 10-14 years. In this model, children with secondary or higher educated mothers had Rs. 1132 more expenditures than children with non-educated mothers. Model 7 estimates the relationship between mothers' education and expenditures among children aged 15-19 years. Here, children with mothers with secondary and above education had Rs. 1743 more expenditures as compared to children with illiterate mothers. While the coefficients for mothers' secondary or above education were approximately similar for the youngest and the oldest groups of children, the coefficient

for mothers' secondary or above education was much lower for the 10-14 years age group as compared to the other two age groups. Additionally, post-hoc tests revealed that expenditures were significantly higher for children with secondary or higher educated mothers compared to all other categories of mothers' education across all three age groups.

Models 2, 5, and 8 explore the relationship between mothers' employment and conditional expenditures among enrolled children. Mothers' employment was not significantly associated with expenditures on children's education in either of these models. Mothers' employment was negatively associated with enrollment for children aged 10-14 and 15-19 years. The difference in the association between mothers' employment and enrollment and investment suggests that enrollment and investment are different constructs.

Models 3, 6, and 9 include both independent variables of mothers' education and employment. Model 3 tests the relationship between mothers' education and employment and conditional expenditures on children's education for children aged 6-9 years. Here, the coefficient for mothers' secondary or higher education increases marginally to Rs. 1819 after mothers' employment is also added to the model. Model 6, with children aged 10-14 years, assesses the same relationship and there is a negligible increase in the coefficient for mothers' secondary education from Rs. 1132 to Rs. 1133 once mothers' employment is also added to the same model. Model 7 estimates the relationship between mothers' education and employment and expenditures on children's education among children aged 15-19 years. In this model, the coefficient for mothers' secondary or higher

education reduces marginally from Rs. 1751 to Rs. 1743 once mothers' employment is added to the model.

Table 12 indicates that many control variables were significantly associated with conditional expenditures on enrolled children's education. These relationships also differed by the gender of the child. While the receipt of government aid was negatively associated with expenditures for children aged 6-9 and 10-14 years, it was positively associated with expenditures for children aged 15-19 years. There are more government schemes that provide aid for elementary education than higher education which may partially account for this trend. Children' age was positively associated with expenditures for children aged 10-19 years. The coefficient for child's age increased from Rs. 126 to Rs. 725 from 10-14 years to 15-19 years indicating that the cost of education increases significantly in higher secondary education.

Girls have lower expenditures across all age groups. Additionally, the difference in expenditures between girls and boys increases across all age groups and is highest amongst children aged 15-19 years. Children with older mothers, educated fathers and grandparents, residing in urban areas, and in families with higher per capita consumption have higher expenditures on education. Muslim children had lower expenditures as compared to Hindu children among children aged 6-9 and 10-14 years. Forward caste, ST, and children belonging to other caste categories had higher expenditures than Brahmin children in the age group 10-14 years.

There were differences in the relationships between certain covariates and the two dependent variables of enrollment and conditional expenditures on children's education.

First, children's age was negatively associated with enrollment whereas it was positively associated with expenditures. Second, mothers' age was negatively associated with enrollment for children aged 15-19 years whereas mothers' age was positively associated with expenditures across all age groups. Third, while receipt of government aid had a positive relationship with enrollment for all age groups, it was negatively associated with expenditures for children 6-14 years. Lastly, children living in urban areas had higher expenditures across all age groups as compared to children living in rural areas. However, there was no difference in rates of enrollment based on urban location.

In sum, all categories of mothers' education are positively associated with enrollment for children aged 10-14 and 15-19 years. For conditional expenditures, children with secondary educated mothers had higher rates of expenditures compared to children with illiterate mothers across all age groups. While mothers' employment was negatively associated with enrollment for children aged 10-14 and 15-19 years, mothers' employment was not associated with expenditures for any group. Mothers' education is beneficial for children's enrollment and expenditures in children's education. Taken together, the difference in the associations between mothers' employment and enrollment and expenditures, and the differences in the relationships between certain covariates (child's and mother's age, government aid, urban residence) and enrollment and expenditures, suggest that enrollment and expenditures are two different constructs.

Table 12: Relationship between mothers' education and employment and conditional expenditures by child age and gender

	Marginal Effects								
	6-9 years			10-14 years			15-19 years		
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Mother's Education (*omitted category: illiterate*)									
Primary	62.51		67.80	-56.80		-58.25	-534.04*		-539.24*
	(99.67)		(99.79)	(99.65)		(99.63)	(257.84)		(256.72)
Upper Primary	147.24		162.29	29.74		26.38	-107.39		-116.87
	(139.04)		(140.48)	(136.42)		(136.54)	(363.87)		(365.40)
Secondary & above	1,811.98***		1,819.44***	1,132.23***		1,133.98***	1,750.66***		1,742.99***
	(255.82)		(255.08)	(203.66)		(203.42)	(425.61)		(425.55)
Mother's Employment (*omitted category: Not working*)									
Agriculture		32.94	93.02		-42.64	-5.93		-138.64	-126.24
		(95.29)	(93.61)		(87.77)	(86.82)		(277.45)	(276.77)
Other		279.69	263.62		-99.05	-132.28		112.80	-26.44
		(316.78)	(312.56)		(152.37)	(150.41)		(467.54)	(459.69)
Female	-350.75***	-333.22***	-351.93***	-440.10***	-438.30***	-439.73***	-1,228.56***	-1,216.82***	-1,229.09***
	(88.71)	(90.19)	(88.63)	(74.15)	(74.57)	(74.19)	(241.49)	(242.65)	(241.65)
Mother's age	27.13**	32.71**	26.63**	41.27***	45.25***	41.52***	58.50**	62.93**	58.56**
	(9.91)	(10.10)	(9.86)	(8.77)	(8.89)	(8.78)	(22.02)	(21.97)	(22.05)
Maternal grandfather's education	51.54***	74.72***	51.45***	33.92**	44.19***	33.89**	42.16	61.12	41.89
	(15.43)	(16.11)	(15.29)	(13.07)	(13.10)	(13.08)	(33.87)	(33.15)	(33.87)
Maternal grandmother's education	93.10**	121.28***	93.16**	168.04***	192.73***	167.99***	236.32***	284.85***	236.67***
	(33.52)	(33.70)	(33.48)	(41.20)	(39.92)	(41.19)	(69.54)	(69.48)	(69.54)
Child's age	-10.84	-18.72	-11.71	126.22***	120.14***	126.31***	725.21***	715.21***	724.92***
	(25.89)	(26.60)	(26.06)	(22.28)	(22.28)	(22.28)	(70.64)	(70.35)	(70.60)
Siblings	-135.74***	-181.35***	-137.19***	-181.75***	-211.19***	-181.19***	-452.16***	-515.99***	-453.63***
	(32.52)	(34.90)	(33.11)	(29.94)	(31.97)	(29.99)	(88.11)	(88.95)	(88.26)
Proportion of girls in household	-0.86	-1.14	-0.88	-0.06	-0.13	-0.06	4.41	5.04	4.43
	(1.76)	(1.78)	(1.75)	(1.63)	(1.64)	(1.63)	(4.68)	(4.73)	(4.70)
Father's education	92.54***	132.55***	93.25***	84.47***	106.12***	84.21***	207.43***	240.61***	206.25***
	(11.96)	(12.42)	(11.92)	(10.21)	(10.97)	(10.29)	(30.03)	(30.53)	(30.57)
Paternal grandfather's education	59.40***	69.22***	59.86***	88.71***	96.01***	88.52***	94.70*	103.59*	94.99*
	(17.97)	(17.90)	(17.80)	(21.01)	(20.60)	(20.98)	(41.26)	(41.42)	(41.24)
Paternal grandmother's education	92.66*	109.15**	92.60*	35.70	45.97	35.77	46.15	65.27	46.15
	(40.68)	(40.34)	(40.67)	(52.40)	(52.65)	(52.39)	(93.40)	(93.38)	(93.36)
Marital relations	95.64	176.25	86.70	101.37	142.69	103.86	93.35	191.00	93.88
	(93.12)	(97.10)	(94.25)	(75.16)	(74.46)	(75.07)	(208.81)	(208.15)	(207.58)
Caste (*omitted category: Brahmin*)									
Forward/General (except Brahmin)	378.41	378.09	377.01	863.58***	878.62***	859.97***	242.64	243.74	242.66
	(354.71)	(353.55)	(355.03)	(258.70)	(259.31)	(258.47)	(673.07)	(678.47)	(672.91)

OBC	-3.58	-16.54	-8.28	414.13	406.93	412.02	-431.92	-485.02	-428.95
	(341.87)	(341.36)	(341.80)	(255.34)	(256.42)	(255.03)	(615.27)	(620.81)	(616.36)
Scheduled Caste	-199.42	-258.63	-213.38	137.27	118.46	139.57	-1,174.42	-1,209.61	-1,163.69
	(345.03)	(344.96)	(345.43)	(256.65)	(259.15)	(256.50)	(632.13)	(638.57)	(632.62)
Scheduled Tribe	14.23	-21.25	-16.64	849.38**	902.76**	855.88**	-221.80	-174.22	-201.76
	(347.35)	(348.44)	(346.87)	(288.82)	(291.54)	(288.47)	(691.72)	(697.65)	(691.33)
Others	1,476.08	1,482.32	1,486.16	1,039.17*	1,042.26*	1,035.16*	1,067.73	946.82	1,061.15
	(1,393.67)	(1,430.55)	(1,395.91)	(476.71)	(492.37)	(476.07)	(1,784.45)	(1,781.23)	(1,785.89)
Religion (*omitted category: Hindu*)									
Muslim	-361.51**	-383.41**	-353.56**	-363.67**	-398.58**	-365.65**	-653.33	-668.13	-659.02
	(128.30)	(130.44)	(129.02)	(137.16)	(138.44)	(137.75)	(491.42)	(493.09)	(493.60)
Sikh, Jain, Christian & Others	444.80	434.45	451.67	294.80	293.18	296.75	19.26	107.76	16.26
	(260.96)	(261.62)	(261.88)	(229.83)	(231.23)	(229.75)	(621.42)	(626.91)	(621.30)
Urban residence	858.21***	993.25***	859.34***	830.73***	906.74***	834.56***	836.81**	921.81**	821.63**
	(146.97)	(148.91)	(151.97)	(107.43)	(111.96)	(108.72)	(287.09)	(297.16)	(294.22)
Consumption per capita	104.28***	112.76***	104.48***	191.30***	198.67***	191.31***	242.81***	252.30***	242.45***
	(15.95)	(16.24)	(15.96)	(19.99)	(19.75)	(20.01)	(35.90)	(36.76)	(36.01)
Government Aid	-99.63**	-102.35**	-100.34**	-90.28***	-90.79***	-90.19***	36.08*	36.73*	36.10*
	(31.83)	(33.09)	(32.01)	(18.61)	(18.56)	(18.59)	(17.01)	(17.04)	(16.99)
Observations	5,644	5,644	5,644	11,547	11,547	11,547	7,215	7,215	7,215

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

***Moderation Analyses*.** This section explores the role of child gender as a moderator in the relationship between mothers' education and employment and investment in children's education across three age groups of 6-9, 10-14, and 15-19 years. Results are presented as graphs to make interpretation of these effects more intuitive. All graphs present marginal effects and 95% confidence intervals around each estimate. The figures for enrollment as the dependent variable were obtained from post estimation of LPM models and the figures for investment among enrolled children were obtained from post estimation of Tobit models. All models included both independent variables of mothers' education and employment, and all other covariates.

Figure 10: Mothers' education and expenditures on education by child gender among children aged 6-9 years

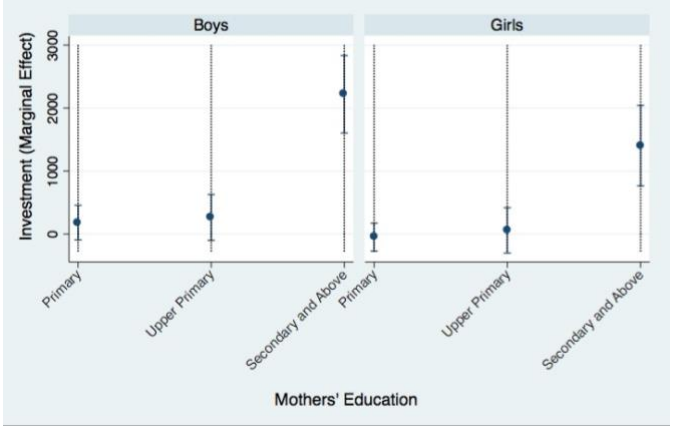
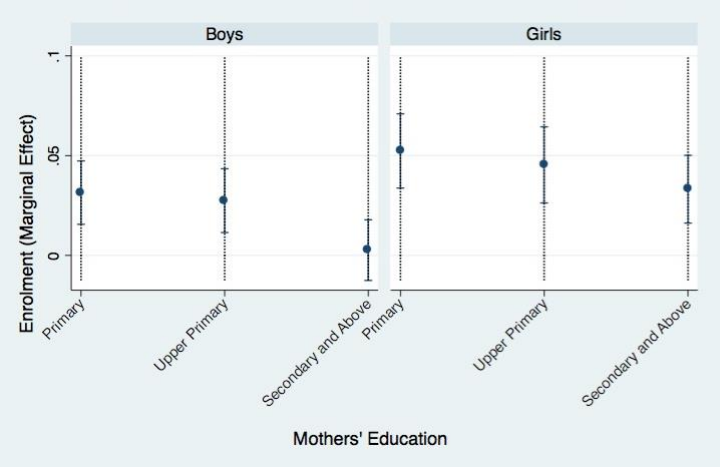


Figure 10 indicates that the association between mothers' secondary and higher education was more positive for conditional expenditures on boys' education than girls' education for children aged 6-9 years. The costs of boys' education were Rs. 2220 more for boys with secondary or higher educated mothers than boys with illiterate mothers

whereas girls with secondary or higher educated mothers had Rs. 1405 more expenditures than girls with illiterate mothers.

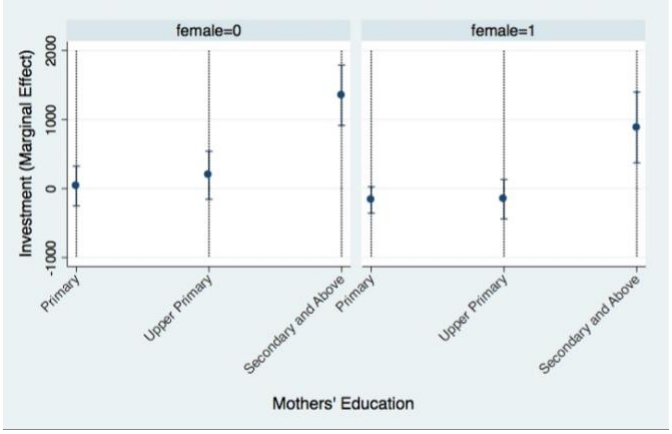
Figure 11 shows that among children aged 10-14 years, girls with secondary or higher educated mothers were three percentage points more likely to be enrolled than girls with illiterate mothers whereas boys with secondary or higher educated mothers were less than one percentage point more likely to be enrolled in school than boys with illiterate mothers.

Figure 11: Mothers' education and enrollment by child gender among children aged 10-14 years



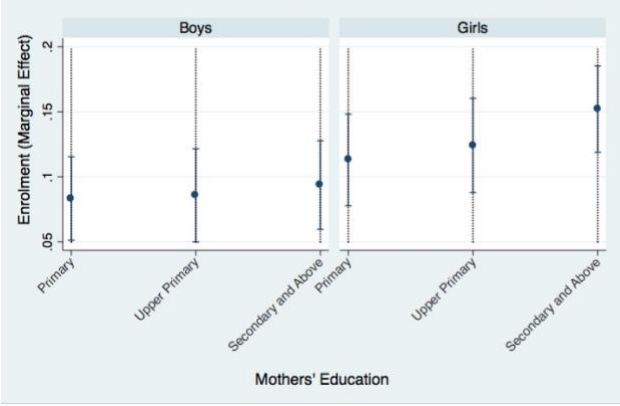
Turning to expenditures, Figure 12 indicates that among children aged 10-14 years, the relationship between mothers' upper primary education and conditional expenditures was more positive for boys than girls. Boys with upper primary educated mothers had Rs. 192 more expenditures than boys with illiterate mothers whereas girls with upper primary educated mothers had Rs. 154 less expenditures than girls with illiterate mothers.

Figure 12: Mothers' education and expenditures by child gender among children aged 10-14 years



Among children aged 15-19, the association between mothers' education and enrollment was more positive for girls as compared to boys. Figure 13 shows that among children with mothers who had attained a secondary or higher education, girls were 15 percentage points more likely to get enrolled in school as compared to girls with illiterate mothers, whereas boys were nine percentage points more likely to be enrolled in school as compared to boys with illiterate mothers.

Figure 13: Mothers' education and enrollment by child gender among children aged 15-19 years



Summary of Results

The relationship between mothers' education and investment in children's education was different for different age groups. Mothers' education, irrespective of level of education, had a positive association with children's enrollment in school for the two higher age groups of children aged 10-14 and 15-19 years. In these two age groups, mothers' secondary or higher education was more beneficial for girls' enrollment in school than boys. Children with secondary or higher educated mothers had higher conditional expenditures across all age groups. Boys gained more than girls in terms of expenditures in the 6-9 and 10-14 age groups whereas girls gained more in terms of enrollment from their mothers' secondary or higher education in the 10-19 age group. Mothers' employment, whether in agriculture or other occupations, was negatively associated with children's enrollment in school. However, mothers' employment was not associated with expenditures on children's education. In sum, the relationship between mothers' education and employment and investment in children's education differs by age and gender.

Chapter 6: Pathways between mothers' education and employment and investment in children's education

Research Question

This section presents the results for two research questions. First, does the association between mothers' education and employment and investment in children's education operate through the two pathways of mothers' decision-making power and mothers' beliefs in egalitarian gender norms? Second, do these relationships differ by the gender of the child?

Sample

The sample for the mediation analyses is restricted to children who have non-missing data on all three mediators, independent and dependent variables, and covariates. This sample comprises of 28,834 children (as opposed to 29,063 for the main analyses) including 13,515 girls and 15,319 boys aged 6-19 years. Because the analyses with the dependent variable of conditional expenditures is limited to children enrolled in school, the sample for expenditures-related analyses is restricted to 11,320 girls and 12,891 boys.

Measures

This section describes the measures that will be utilized for the mediation analyses. Other variables used for the mediation analyses have been described in Chapter 3.

Mothers' decision-making power. This construct is measured as a scale that captures mother's decision-making power in two domains including her control over: (1)

her children, and (2) family decisions. The mean scores for these two domains were calculated to obtain the composite score for mother's decision-making power in the household. The items for this scale were taken from IHDS-II because there were two additional questions regarding family expenses at the second wave which improved the measure for mothers' control over household financial decisions. While it is not ideal to measure the mediator and the dependent variables contemporaneously, reverse causality should not be an issue as it unlikely that investment in children's education can cause mothers' decision-making power.

The scores for the first two domains of control over children and family decisions are obtained using items that ask the mother about who makes decisions in these different areas. The response categories for these items include the mother herself (=1), her husband (=2), senior male (=3), senior female (=4), and other (=5). Each potential decision-maker is encoded as a binary variable. Depending on the mothers' answers about each type of decision, different combinations of the binary variables were coded (0=no, 1=yes). For example, the measure for decision-making regarding children is computed as the mean of three items asking mothers if they take decisions (alone or with other family members) when their child falls ill, the number of children they want, and in the choice of their child's marital partner. These items are coded as dichotomous variables to reflect mother's control in this domain (1=mother takes decision, 0=mother does not take decision). The measure for decisions regarding children is computed as the mean of these three items and is a continuous variable, ranging from 0-1. The other variable, family decisions, is the mean of four items asking mothers if she makes

decisions (alone or with other family members) regarding buying an expensive item for the household, buying land/property, and the care of a sick family member. These items are recoded as dichotomous variables to reflect mother's control in this domain (1=mother takes decision, 0=mother does not take decision). This continuous variable ranges from 0-1. Lastly, the mean score for both domains, child, and family decisions, is computed to obtain the composite score for decision-making power. This scale is highly reliable with an internal consistency reliability coefficient (alpha) of 0.90.

Mothers' beliefs in egalitarian gender norms. Two separate variables capturing mothers' beliefs in egalitarian gender norms are tested as mediators. Both these variables are measured at IHDS-I. Ideally, there would be three different time points where the three variables (independent, mediator, dependent) would be measured but as data is only available from two waves of the IHDS, the independent variable and the mediators were measured at the same timepoint (IHDS-I), whereas the dependent variable was measured at IHDS-II. This way there is no concern for reverse causality in the relationships between the independent variable and the mediator, and the outcome variables.

Mothers' belief in equal education. This binary variable (0=no, 1=yes) captures mothers' beliefs regarding equal education for boys and girls. Here, mothers are asked whether they think daughters should be educated as much as sons. There were three response categories (1=same, 2=boys more, 3=girls more). This item is recoded as 1 if mothers think both children should be educated equally or that daughters should be educated more that sons. The item is coded as 0 if mothers want more education for their sons than their daughters.

Mothers' belief in support for old age. Mothers' belief in support for old age is measured as a binary variable (0= no, 1=yes) based on two categorical variables where the mother is asked whom she would consider living with in old age, and whom she would be comfortable being financially supported by in old age. For both these items there were four response categories (1=son, 2=daughter, 3=both, 4=others/none). If mothers expected to be supported (financially or through co-residence) by their daughters or both their children, mothers' belief in support for old age was coded as 1, and if mothers expected to be supported by their sons or others, the items were coded as 0.

Analytic Strategy

First, descriptive statistics are examined for all three mediators. Results are presented for the full sample by mothers' level of education and employment, and by child gender. Statistically significant differences between groups are indicated. Next, the mediation model was tested using Baron and Kenny's (1986) four step method. In the first step, the relationship between the independent (mothers' education, employment) and the dependent variable (investment in children's education) is tested to establish the case for mediation analyses. Second, the relationship between the independent variable (mothers' education, employment) and the mediator (decision-making power, beliefs in egalitarian gender norms) is verified. In the third step, the relationship between the mediator (decision-making power, beliefs in egalitarian gender norms) and the dependent variable (investment in education) is tested. Lastly, a full model that includes the independent, dependent, and mediator variables is estimated to check for differences in the magnitude of the association between the independent and dependent variables, once

the mediator is added to the same model. Parental investment is operationalized based on two constructs, children's enrollment in school, and expenditures on children's education, conditional on enrollment. Linear Probability Models (LPM) are used for all analyses with the dependent variable of enrollment, and Tobit models are estimated for all analyses with the dependent variable of expenditures (censored variable). All models are stratified by child gender to assess gender differences in the pathways between mothers' education and employment and conditional expenditures on children's education.

Results

Descriptive Results. Table 13 presents descriptive statistics for the three mediators discussed above. The subsequent sections present differences in all three mediators by mothers' education and employment. Across all groups, mothers reported an average decision-making power score of .86. This score is high given that the scale ranges from 0-1. Additionally, there is no significant difference in the score between mothers of girls and boys. Girls' mothers were significantly more likely to support equal or more education for girls. Eighty-eight percent of girls' mothers believed that girls/both children should receive equal education as compared to 87% of boys' mothers. Girls' mothers were also more significantly likely to report that they would rely on both children or daughters alone for support in old age. Fifteen percent of girls' mothers were likely to rely on both children or daughters for support as compared to 6% of boys' mothers.

Table 13: Descriptive statistics for all mediators

	Full Sample (*N*=28,834)	Girls (*N*=13,515)	Boys (*N*=15,319)
	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)
Mothers' decision-making power	0.86 (.27)	0.86 (.27)	0.86 (.27)
Mothers' belief in equal education***	0.88	0.88	0.87
Mothers' belief in support for old age***	0.10	0.15	0.06

*Note: Table presents results for differences by gender, ***p<.001*

Table 14: Mothers' decision-making power by education and employment

	Full Sample (*N*=28,834)	Girls (*N*=13,515)	Boys (*N*=15,319)
	%	%	%
Mothers' Education***			
Illiterate (*reference category*)	0.85	0.85	0.85
Primary	0.87	0.87	0.86
Upper Primary	0.87	0.87	0.86
Secondary & above	0.88	0.88	0.87
Mothers' Employment***			
None (*reference category*)	0.85	0.85	0.85
Agriculture	0.89	0.89	0.89
Other	0.89	0.90	0.89

*Note: Table presents differences in decision-making power by education and employment for the full sample, girls, and boys, ***p<.001. For all groups, educated mothers (compared to illiterate mothers), and working mothers (compared to non-working mothers) had higher decision-making power.*

Decision-making power. Table 14 presents the relationship between mothers' education and employment and mothers' decision-making power. Bivariate regressions tested for differences in mothers' decision-making power by education and employment. Educated mothers (all levels) had higher decision-making power as compared to illiterate mothers (p<0.001). The average score for mothers' decision-making power is .85 for illiterate mothers as compared to .88 for mothers with a secondary or higher education. Mothers' decision-making power is higher for mothers who are working (.89), whether in agricultural or other occupations, as compared to non-working mothers (.85) (p<0.001). Among girls with working mothers, mothers who are employed in non-agricultural

occupations have marginally more decision-making power (.90) than mothers working in agriculture, but this difference is not statistically significant.

Table 15: Differences in mothers' beliefs on equal education by education and employment

	Full Sample (*N*=28,834)	Girls (*N*=13,515)	Boys (*N*=15,319)
	%	%	%
Mothers' Education***			
Illiterate (*reference category*)	0.83	0.83	0.82
Primary	0.89	0.91	0.88
Upper Primary	0.93	0.93	0.92
Secondary & above	0.96	0.97	0.96
Mothers' Employment***			
None (*reference category*)	0.89	0.90	0.89
Agriculture	0.81	0.83	0.80
Other	0.85	0.86	0.84

*Note: Table presents differences in mothers' beliefs by education and employment for the full sample, girls, and boys, ***p<.001. For all groups, educated mothers (compared to illiterate mothers), and working mothers (compared to non-working mothers) were more likely to believe in equal or more education for girls.*

Equal education. Table 15 presents the relationship between mothers' education and employment and mothers' beliefs in equal education. Bivariate regressions tested for differences in mothers' beliefs in equal education by education and employment. Educated mothers were significantly more likely to believe that their daughters should get more, or equal education as compared to their sons (p<0.001). Eighty-three percent of illiterate mothers believed in equal education as compared to 96% of mothers with a secondary or higher education. For all groups, mothers who were not working were more likely to support equal or more education for girls. Working mothers were significantly less likely to believe in equal or more education for their daughters (p<0.001). Eighty-nine percent of non-working mothers supported equal education as compared to 81% of mothers working in agriculture and 85% of mothers holding other jobs.

Table 16: Differences in mothers' beliefs in support for old age by education and employment

	Full Sample (*N*=28,834)	Girls (*N*=13,515)	Boys (*N*=15,319)
	%	%	%
Mothers' Education***			
Illiterate (*reference category*)	0.25	0.10	0.04
Primary	0.31	0.15	0.06
Upper Primary	0.33	0.18	0.07
Secondary & above	0.38	0.27	0.09
Mothers' Employment			
None (*reference category*)	0.10	0.16	0.06
Agriculture***	0.09	0.13	0.04
Other	0.11	0.17	0.06

*Note: Table presents differences in mothers' beliefs by education and employment for the full sample, girls, and boys, ***p<.001. For all groups, educated mothers (compared to illiterate mothers), and working mothers (compared to non-working mothers) were more likely to rely on daughters or both children for support in old age.*

Support in old age. Table 16 presents the relationship between mothers' education and employment and mothers' beliefs in support for old age. Educated mothers are significantly more likely to rely on daughters or both children for support in old age (p<0.001). While 25% of illiterate mothers reported that they would rely on their daughters or both children, 38% of mothers with secondary or higher education reported that they would do so. Among all children, mothers who had agricultural jobs were significantly less likely to rely on daughters as compared to mothers who were not working or mothers who worked in occupations other than agriculture (p<0.001). For both variables measuring mothers' beliefs in egalitarian gender norms, girls' mothers were more likely to endorse egalitarian gender norms.

Multivariate Results. This section presents the results for the four-step mediation analyses. The results are presented separately for each mediator.

Decision-making power. Table 17 tests whether mothers' decision-making power (mediator) is associated with either enrollment or conditional expenditures on children's education for either boys or girls. The results indicate that mothers' decision-making power was not significantly associated with either enrollment or investment in enrolled children's education. As described in Baron & Kenny (1986), if this relationship cannot be established, mediation is not possible. As a result, no further analyses were estimated with this mediator.

Table 17: Mothers' decision-making power and parental investment in children's education

	Linear Probability Models DV: Enrollment		Marginal Effects DV: Investment	
	Girls	Boys	Girls	Boys
Variables	Model 1	Model 2	Model 3	Model 4
Mothers' decision-making power	0.0164	-0.0110	-84.78	-129.6
	(0.0117)	(0.0105)	(175.8)	(200.6)
Constant	1.180***	1.184***		
	(0.0328)	(0.0290)		
Observations	13,515	15,319	11,320	12,891
R-squared	0.231	0.215		

Note: Numbers presented are regression coefficients for the LPM, marginal effects of the censored variable for tobit models and robust standard errors in parentheses. Models include all covariates dummy variables for different states in India.

**** p<0.001, ** p<0.01, * p<0.05*

Mothers' Beliefs in Equal Education. First, the relationship between mothers' beliefs in equal education (mediator) and the two dependent variables, enrollment and conditional expenditures on children's education is tested. The first two models in Table 18 assess the relationship between mothers' beliefs in equal education and enrollment. Model 1 indicates that girl children with mothers who believed that girls should be educated more than or equal to boys were 5 percentage points more likely to be enrolled in school as compared to girl children whose mothers believed that boys should be

educated more than girls. Boys whose mothers believed that girls should be educated equally or more than boys were also 5 percentage points more likely to be enrolled in school, as seen in Model 2.

In the next step, the relationship between the two independent variables (mothers' education and employment) and the mediator (mothers' beliefs in equal education) is established. Model 3 indicates that girls' mothers with primary, upper primary, and secondary and above education are 7, 6, and 6 percentage points more likely to believe that girls should receive equal or more education than boys, as compared to girls with mothers who did not receive any education. Similarly, Model 4 indicates that for boys as well, all levels of mothers' education are positively associated with mothers' beliefs in equal education as compared to boys with illiterate mothers. In terms of mothers' employment, mothers who are working are less likely to believe in equal education for girls as compared to mothers who are not working for both girls and boys.

The next four models asses the relationship between the independent variables (mothers' education and employment) and the dependent variable (enrollment). Although these relationships have been established in the previous chapter, they are presented here in order to observe the change in the magnitude of the coefficients once the mediator is added to the same model. Models 5 and 6 indicate that both girls and boys with mothers who have received any education are more likely to be enrolled in school as compared to children with mothers who have no education. Girls with mothers who have a primary, upper primary, and secondary and above education are 7,7, and 6 percentage points more likely to enrolled in school as compared to girls with mothers who are not educated. Boys

with mothers who attained a primary or upper primary education are 5 percentage points more likely to be enrolled in school and boys with mothers who attained secondary and above education are 4 percentage points more likely to be enrolled than boys with illiterate mothers. Model 5 shows that girls with mothers engaged in agricultural labor are 3 percentage points less likely to be enrolled in school than girls with non-working mothers. Model 6 indicates that boys with mothers who are employed in agriculture and other occupations are 5 and 4 percentage points less likely to be enrolled in school.

Next, mothers' belief in equal education (mediator) is added to the fully controlled models to test whether it mediates the relationship between mothers' education and employment and enrollment for both girls and boys. Even after adding mothers' beliefs in equal education to the fully controlled model, the association of mothers' education remained stable, and there was no real change in the magnitude of the coefficients for either mothers' education or employment for either girls or boys. For both girls and boys, mothers' beliefs in equal education did not mediate the relationship between mothers' education and enrollment in school.

Models 1 and 2 in the second panel of Table 18 test for the relationship between mothers' beliefs in equal education and conditional expenditures on children's education for girls and boys. Both models indicate that mothers' beliefs in equal education are not significantly associated with expenditures on children's education. As described in Baron & Kenny (1986), if this relationship cannot be established, mediation is not possible. As a result, no further analyses were estimated with this mediator.

Table 18: Mothers' beliefs in equal education and parental investment in children's education

	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
DV: Enrollment (LPM regression)								
Mothers' belief in equal education	0.051***	0.045***					0.043***	0.039***
	(0.011)	(0.010)					(0.011)	(0.010)
Mother's Education (omitted category: illiterate)								
Primary			0.066***	0.041***	0.068***	0.053***	0.065***	0.051***
			(0.010)	(0.010)	(0.009)	(0.008)	(0.009)	(0.008)
Upper Primary			0.063***	0.066***	0.067***	0.052***	0.064***	0.050***
			(0.011)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)
Secondary & above			0.060***	0.065***	0.058***	0.035***	0.056***	0.033***
			(0.011)	(0.011)	(0.010)	(0.009)	(0.010)	(0.009)
Mothers' employment (omitted category: none)								
Agriculture			-0.025	-0.033**	-0.026*	-0.049***	-0.024*	-0.047***
			(0.013)	(0.012)	(0.011)	(0.010)	(0.011)	(0.010)
Other			-0.029*	-0.039**	-0.011	-0.044***	-0.010	-0.042***
			(0.015)	(0.014)	(0.012)	(0.012)	(0.012)	(0.012)
Constant	1.148***	1.140***	0.825***	0.789***	1.165***	1.158***	1.129***	1.127***
	(0.033)	(0.029)	(0.037)	(0.034)	(0.032)	(0.029)	(0.033)	(0.030)
Observations	13,515	15,319	13,515	15,319	13,515	15,319	13,515	15,319
R-squared	0.233	0.216	0.102	0.091	0.237	0.220	0.238	0.221
DV: Conditional Expenditures (Tobit regression)								
Mothers' belief in equal education	-29.67	24.16						
	(154.08)	(137.15)						
Observations	11,320	12,891						

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

Mothers' beliefs in support for old age. First, the relationship between mothers' beliefs in support for old age (mediator) and the two dependent variables, enrollment and conditional expenditures on children's education is tested. In the first panel of Table 19, Model 1 examines the relationship between mothers' beliefs in support for old age and enrollment for boys. Mothers' beliefs in support for old age is not significantly associated with enrollment in school for boys. As there is no association between the mediator and the dependent variable, further results for boys will not be presented.

Table 19: Mothers' beliefs in support for old age and parental investment in children's education

	Boys		Girls		
Variables	Model 1	Model 2	Model 3	Model 4	Model 5
DV: Enrollment (LPM)					
Mothers' belief in support for old age	0.006	0.022**			0.020*
	(0.012)	(0.008)			(0.008)
Mother's Education (*omitted category: illiterate*)					
Primary			0.016	0.068***	0.068***
			(0.011)	(0.009)	(0.009)
Upper Primary			0.020	0.067***	0.067***
			(0.013)	(0.009)	(0.009)
Secondary & above			0.029*	0.058***	0.058***
			(0.015)	(0.010)	(0.010)
Mothers' employment (*omitted category: none*)					
Agriculture			-0.012	-0.026*	-0.025*
			(0.012)	(0.011)	(0.011)
Other			-0.002	-0.011	-0.011
			(0.014)	(0.012)	(0.012)
Constant	1.176***	1.196***	-0.215***	1.165***	1.169***
	(0.028)	(0.032)	(0.048)	(0.032)	(0.032)
Observations	15,319	13,515	13,515	13,515	13,515
R-squared	0.214	0.231	0.211	0.237	0.237
DV: Conditional Expenditures (Tobit)					
Mothers' belief in support for old age	168.78	0.90			
	(174.62)	(315.07)			
Observations	11,320	12,891			

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

Model 2 shows that girls with mothers who report that they will rely either on their daughters or on both their sons and daughters for support in old age are two percentage points more likely to be enrolled in school when compared to girl children

whose mothers reported that they would rely on their boys or other family members. In the next step, the relationship between the two independent variables (mothers' education and employment) and the mediator (mothers' beliefs in support for old age) is established. Model 3 tests for the association between mothers' education and employment and mothers' beliefs in support for old age. Girls with mothers who have attained a secondary or higher education are 3 percentage points more likely to have mothers' who would rely on their daughters or both children for old age support.

The next two models asses the relationship between the independent variables (mothers' education and employment) and the dependent variable (enrollment). Although these relationships have been established in the previous chapter, they are presented here in order to observe the change in the magnitude of the coefficients once the mediator is added to the same model. Model 4 shows that girls with mothers' who attained a primary, upper primary, or secondary and above education are all 7,7, and 6 percentage points more likely to be enrolled in school. Girls with mothers who are employed in agriculture are 3 percentage points less likely to be enrolled in school as compared to girls with mothers who do not work. Model 5 adds the mediator, mothers' belief in old age support to the fully controlled model. There is no change in the coefficients for mothers' education or employment once the mediator is added to the model which suggests that mothers' belief in old age support does not mediate the relationship between mothers' education and employment and girls' enrollment in school.

Models 1 and 2 in the second panel of Table 19 test for the relationship between mothers' beliefs in support for old age and conditional expenditures on children's

education for girls and boys. Both models indicate that mothers' beliefs in support for old age are not significantly associated with expenditures on children's education. As described in Baron & Kenny (1986), if this relationship cannot be established, mediation is not possible. As a result, no further analyses were estimated with this mediator.

Summary of Results

In this chapter, I tested whether mothers' decision-making power and mothers' beliefs in egalitarian gender norms mediated the association of mothers' education and employment and enrollment and conditional expenditures for boys and girls separately. Mothers' decision-making power was not related to enrollment or expenditures on children's education for either boys or girls. Thus, mothers' decision-making power did not mediate the relationship between mothers' education and employment and parental investment in children's education for girls or boys. While mothers' beliefs in egalitarian gender norms were related to enrollment for boys and girls, this construct did not mediate the relationship between mothers' education and employment and expenditures on children's education. Mothers' belief in support for old age from daughters or both children was positively associated with enrollment only for girl children. On the other hand, mothers' belief in equal or more education for girls was positively associated with enrollment for both boys and girls. There were differences between the two mediators as well. First, while educated mothers were more likely to believe in equal or more education for girls, only girls' mothers with secondary and above education reported that they would rely on their daughters or both children for support in old age. This may suggest that it is more culturally acceptable to educate boys and girls equally, but it is not

yet as acceptable to rely on daughters for support in old age. While mothers' beliefs in support for old age and equal education did not mediate the relationship between mothers' education and employment and children's enrollment, these factors cannot be overlooked as they may contribute to low investment in girls' education through other pathways. Lastly, none of the mediators were significantly associated with conditional expenditures on children's education. This further suggests that enrollment and expenditures are different constructs even though they are both forms of investment in education.

Chapter 7: The Role of Contextual Factors in the Relationship between Mothers' Education and Employment and Investment in Children's Education

Research Question

This section explores whether the relationship between mothers' education and employment and investment in children's education is moderated by contextual factors such as caste, religion, consumption per capita, community norms regarding interpersonal violence, Gender Empowerment Measure (GEM), and Gender Development Index (GDI).

Sample

The sample for this section is limited to 13,659 girls and 15,380 boys aged 6-19 years who had non-missing observations on all moderators, and independent, dependent, and control variables. They were also present at both waves of the IHDS and their mothers were respondents for the education and health questionnaire. Because the analyses with the dependent variable of conditional expenditures is restricted to children who are enrolled in school, the sample size for these analyses is smaller at 11,446 girls and 12,940 boys.

Measures

Caste. Caste is measured as a categorical variable (1=Brahmin; 2= Forward/General; 3= Other Backward Castes (OBC); Scheduled Castes (SC); Scheduled Tribes (ST); Others). The head of the household reports the caste identity of the family at IHDS-I.

Religion. Religion is measured as a categorical variable (1=Hindu, 2=Muslim, 3=Christian, Jain, Sikh and others). Originally, the variable had nine categories but due to the small sample sizes (<2%) of certain categories such as Christian, Jain, Sikh, Tribal, the original nine categories were collapsed into three categories. Religion is reported by the head of the household at IHDS-I.

Consumption per capita. The IHDS-I includes 47 items on consumption. For food items, the head of the household reported the quantity, price, and the type of shop where the items were purchased (market, public distribution system, produced at home). For the other items, the head of the household reported either the quantity bought and the price, or the total value of the items. The monthly consumption total for the household was derived by adding together all the expenses on individual items of consumption. The per capita consumption for each household was derived by dividing the total monthly consumption by the total number of individuals living in the household. This variable is measured at IHDS-I. This variable was further divided by 100 to ease the interpretation of the coefficient.

Community Norms around Interpersonal Violence (IPV). This variable is measured as a scale comprised of five binary items (1=yes, 0=no) where the mother is asked whether it is permissible in her community for a husband to beat his wife: if she goes out without telling him; if her natal family does not give expected money, jewelry, or other items; if she neglects the house or the children; if she doesn't cook food properly; and if her husband suspects her of having relations with other men. The measure for community norms around IPV is computed as the mean of these five items

and is a continuous variable, ranging from 0-1. All items are reverse coded so that higher scores indicate more gender egalitarian norms around IPV. This variable was measured at IHDS-I.

Gender Empowerment Measure. The Gender Empowerment Measure is an index comprised of three dimensions. The first dimension, political participation and decision-making power, includes the following indicators: percentage share of women with elected parliamentary seats; seats at the state legislature; zilla parishad (district level); and gram panchayat (village level) levels; percentage of female candidates in the electoral process in national parties in the parliamentary election; and percentage of female electors voting in the national election. The second dimension, economic participation and decision-making power, includes indicators such as percentage of female officials in the Indian Administrative Services, Indian Police Services, and Indian Forest Services; percent share of female enrollment in medical and engineering colleges. The third and the last dimension, power over economic resources, includes the following indicators: percent female/male land holding; percent female/male with bank accounts in Scheduled Commercial Banks; and portion of female/male estimated per capita annual income share. All dimensions have equal weights in the scoring of the index. Individual items have different weights within each dimension (for more details see Ministry of Women and Child Development [MWCD], 2009).

The GEM and the Gender Development Index (described in the following section) were calculated for two time points, 1996 and 2006, for each state in India, and state level data for 2006 are used as moderators in this project. While there are some

states who have updated both the GDI and GEM after 2006, the data from 2006 was chosen, as this was the only instance where the GEM and the GDI were calculated for all states and union territories in India at the same time. The GEM and GDI measures were adapted (through a series of consultations and conferences) for India by a team of researchers commissioned by the Ministry of Women and Child Development (MWCD, 2009).

Gender Development Index. The indicators for the Gender Development Index are grouped together in three dimensions. The first dimension, the health index, includes the infant mortality rate and life expectancy at age one. The second dimension, the education index, has items such as the literacy rate for individuals aged seven years or older, and the average years of education attained by individuals aged 15 years or older. The last dimension, the income index, includes the female/male share of per capita annual estimated earnings. All dimensions have equal weights in the scoring of the index. Individual items have different weights within each dimension (for more details see MWCD, 2009). The 2006 GDI for each state and union territory is used as a moderator in this project.

Control Variables

All models include all covariates listed in the methodology section (Chapter 3).

Analytic Strategy

All models with the dependent variable of enrollment in school are estimated using LPM regression. Models with the dependent variable of expenditures on children's

education, conditional on enrollment, are estimated using Tobit analysis. For moderation analyses, each moderator is separately interacted with each of the two independent variables, mothers' education, and mothers' employment. Because the unit of analysis is the child and there may be multiple children within a household, standard errors are adjusted at the mother-level in all models to account for within household non-independence.

Results

***Descriptive Results*.** Descriptive statistics for all the moderators, including caste, religion, consumption per capita, community norms regarding interpersonal violence, Gender Empowerment Measure (GEM), and Gender Development Index (GDI) can be found in Table 1 in Chapter 3.

***Multivariate Results*.** In this section, the results are presented separately for each moderator. Each table presents the coefficients for the two main independent variables, mothers' education and employment, the coefficient for the moderator, and the coefficients for the interaction between each independent variable and the moderator. All models are estimated with all the previously discussed covariates but are not presented in this section. Models with coefficients for all variables including covariates can be found in the appendices.

Community IPV norms. Table 20 presents the relationship between mothers' education, employment, community gender norms, and investment in children's education. Model 1 and Model 2 present two fully controlled models testing for the relationship between mothers' education and employment and enrollment in school. In

these two models, community norms around IPV is added as a covariate and it is significantly positively associated with both girls' ($p<0.01$) and boys' enrollment in school ($p<0.001$). Girls and boys have higher enrollment rates in communities that have more gender egalitarian norms about IPV. Models 3 and 4 test the role of community norms about IPV as a moderator in the relationship between mothers' education and girls' and boys' enrollment in school. The association of mothers' education with enrollment does not differ by differences in community norms around IPV for either girls or boys. Models 5 and 6 estimate the interaction association between mothers' employment and community norms regarding IPV. Model 5 indicates that community norms regarding IPV does not moderate the relationship between mothers' employment and girls' enrollment in school. However, the association of mothers' non-agricultural employment is more positive for boys in communities with more progressive views on IPV.

Table 20: Community norms about IPV as a moderator in the relationship between mothers' education, employment, and investment in children' education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education												
Primary	0.068***	0.052***	0.056**	0.060***	0.068***	0.052***	-197.43	-308.40	75.03	71.54	-197.75	-316.79
	(0.009)	(0.008)	(0.017)	(0.017)	(0.009)	(0.008)	(193.84)	(202.95)	(225.06)	(295.48)	(193.77)	(203.51)
Upper Primary	0.066***	0.050***	0.068***	0.051**	0.066***	0.050***	99.76	-74.90	-188.08	-740.77	98.57	-78.06
	(0.009)	(0.009)	(0.018)	(0.017)	(0.009)	(0.009)	(232.46)	(290.03)	(368.73)	(412.36)	(232.54)	(290.14)
Secondary & above	0.055***	0.034***	0.070***	0.046***	0.055***	0.034***	2,168.03***	1,839.49***	1,423.59**	52.61	2,166.80***	1,838.61***
	(0.010)	(0.009)	(0.016)	(0.014)	(0.010)	(0.009)	(286.51)	(346.58)	(473.97)	(576.71)	(287.21)	(346.52)
Mother's Employment (*omitted category: unemployed*)												
Agriculture	-0.026*	-0.049***	-0.025*	-0.048***	-0.011	-0.063***	48.70	-142.13	31.13	-198.74	145.04	467.42
	(0.011)	(0.010)	(0.011)	(0.010)	(0.018)	(0.016)	(194.52)	(195.07)	(193.53)	(192.25)	(254.56)	(270.01)
Other	-0.010	-0.044***	-0.010	-0.043***	-0.014	-0.089***	98.28	94.20	95.19	90.06	241.96	-489.56
	(0.012)	(0.011)	(0.012)	(0.011)	(0.023)	(0.024)	(317.52)	(412.71)	(316.12)	(410.79)	(355.68)	(525.48)
Community IPV norms	0.026**	0.035***	0.027	0.041**	0.031**	0.023*	876.70***	990.58***	636.84**	311.65	930.54***	1,124.09***
	(0.010)	(0.009)	(0.015)	(0.014)	(0.011)	(0.010)	(215.33)	(230.33)	(201.85)	(250.68)	(266.73)	(278.91)
Primary#Community norms			0.023	-0.015					-477.14	-595.45		
			(0.026)	(0.025)					(461.52)	(474.96)		
Upper Primary#Community norms			-0.004	-0.003					529.55	1,223.76		
			(0.026)	(0.024)					(584.98)	(646.77)		
Secondary & above#Community norms			-0.024	-0.021					1,261.62	3,075.70***		
			(0.022)	(0.019)					(746.04)	(809.55)		
Agriculture#Community norms					-0.030	0.028					-186.60	-1,245.47**
					(0.027)	(0.026)					(391.62)	(430.70)
Other#Community norms					0.007	0.081*					-260.43	979.57
					(0.034)	(0.034)					(786.32)	(1,253.85)
Constant	1.143***	1.139***	1.141***	1.135***	1.142***	1.144***	-773.72	-4,315.66***	-582.72	-3,809.14***	-795.74	-4,346.72***
	(0.032)	(0.029)	(0.033)	(0.029)	(0.032)	(0.029)	(1,009.58)	(1,243.97)	(998.40)	(1,237.31)	(1,010.75)	(1,238.17)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.220	0.237	0.220	0.237	0.221						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India. Full models are available in the appendices*

Models 7 and 8 estimate the relationship between mothers' education and employment and conditional expenditures on girls' and boys' education. In both these models, community norms around IPV is added to the fully controlled model. Community norms about IPV has a significant positive association with expenditures on children' education for both boys and girls (p<.001). Models 9 and 10 test the role of community IPV norms as a moderator in the relationship between mothers' education and expenditures on girls' and boys' education. Model 10 indicates that the relationship between mothers' education and expenditures was more positive for boys whose mothers who had attained a secondary and above education (p<.001) education, and who lived in areas with more gender egalitarian norms. Models 11 and 12 in Table 20 estimate the role of community IPV norms as a moderator in the relationship between mothers' employment and expenditures. While the interaction between mothers' employment and expenditures was not significant for girls, the association of mothers' agricultural employment was more negative for boys (p<0.01) living in communities with progressive norms on IPV. In sum, boys with educated mothers living in areas with more gender egalitarian norms about IPV have higher expenditures on education. While the association of mothers' employment in occupations other than agriculture was more positive for boys' enrollment, the association of mothers' agricultural employment was more negative for investment in boys' education.

Caste. Table 21 presents the relationship between mothers' education, employment, caste, and investment in children's education for both girls and boys. Models 1 and 2 present two fully controlled models estimating the association between

mothers' education, employment and children's enrollment in school for girls and boys. In both these models, caste is added as a control variable. Model 1 shows that girls whose families identify as Other Backward Castes (OBC), Scheduled Caste (SC), and Scheduled Tribes (ST) have significantly lower enrollment when compared to Brahmin girls. Model 2 indicates that SC and ST boys have significantly lower enrollment when compared to Brahmin boys. In both models, children from upper castes such as Brahmins and Forward Caste have higher enrollment than children from lower castes. Models 3 and 4 test the role of caste as a moderator in the relationship between mothers' education and girls' and boys' enrollment in school. Model 3 shows that the association of mothers' upper primary education with enrollment is more positive for girls belonging to the other category as compared to Brahmin girls ($p<0.01$). On the other hand, Model 4 shows that boys with educated mothers who identify as SC ($p<0.05$) have significantly higher enrollment as compared to Brahmin boys. Additionally, the association of mothers' primary and secondary and above education with enrollment is more positive for Forward caste boys than Brahmin boys ($p<0.05$). Models 5 and 6 test the role of caste as a moderator in the relationship between mothers' employment and girls' and boys' enrollment in school. Results indicate that caste is not a moderator in the relationship between mothers' employment and children's enrollment in school for either girls or boys.

Table 21: Caste as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Investment Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.040	-0.018	0.068***	0.052***	-188.33	-298.15	496.24	777.82	-193.47	-306.01
	(0.009)	(0.008)	(0.039)	(0.030)	(0.009)	(0.008)	(194.14)	(202.54)	(880.61)	(942.86)	(194.36)	(203.16)
Upper Primary	0.067***	0.051***	0.037	0.004	0.067***	0.051***	123.66	-37.91	2,343.25	105.90	121.93	-70.30
	(0.009)	(0.009)	(0.034)	(0.031)	(0.009)	(0.009)	(232.70)	(289.87)	(1,764.80)	(1,256.81)	(233.40)	(290.64)
Secondary & above	0.057***	0.035***	0.050	-0.012	0.057***	0.035***	2,220.68***	1,881.47***	3,966.40***	2,423.74*	2,233.64***	1,874.75***
	(0.010)	(0.009)	(0.031)	(0.026)	(0.010)	(0.009)	(287.40)	(346.00)	(1,053.62)	(1,172.58)	(289.07)	(345.69)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.025*	-0.049***	-0.152	-0.014	49.48	-144.68	27.18	-140.80	-1,667.43*	986.80
	(0.011)	(0.010)	(0.011)	(0.010)	(0.108)	(0.053)	(194.76)	(195.42)	(194.40)	(196.46)	(733.98)	(923.54)
Other	-0.011	-0.043***	-0.011	-0.044***	0.019	-0.048	73.88	106.59	50.32	98.73	-2,748.09*	3,063.53
	(0.012)	(0.012)	(0.012)	(0.012)	(0.041)	(0.044)	(317.11)	(413.48)	(319.30)	(414.73)	(1,077.77)	(3,225.36)
Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.010	-0.002	-0.063*	-0.006	-0.006	3.37	1,396.21*	1,251.35*	1,986.95**	-288.52	1,724.83**
	(0.012)	(0.011)	(0.031)	(0.026)	(0.012)	(0.011)	(589.12)	(555.27)	(503.49)	(762.11)	(637.42)	(555.45)
OBC	-0.037**	-0.008	-0.053	-0.043	-0.038**	-0.009	-385.65	157.50	806.34	518.35	-639.16	429.00
	(0.012)	(0.010)	(0.029)	(0.024)	(0.012)	(0.010)	(554.09)	(512.04)	(432.67)	(662.38)	(603.63)	(517.68)
Scheduled Caste	-0.048***	-0.042***	-0.060*	-0.089***	-0.053***	-0.046***	-1,027.96	-507.50	395.86	113.56	-1,331.20*	-398.40
	(0.013)	(0.012)	(0.029)	(0.024)	(0.013)	(0.012)	(561.35)	(524.07)	(442.84)	(677.50)	(614.77)	(537.75)
Scheduled Tribe	-0.045**	-0.033*	-0.063*	-0.069*	-0.035	-0.026	-109.59	725.47	1,198.06*	1,090.72	-119.74	869.78
	(0.016)	(0.015)	(0.032)	(0.027)	(0.021)	(0.017)	(573.41)	(572.69)	(466.58)	(703.18)	(681.14)	(640.36)
Others	-0.007	-0.045	-0.041	-0.084	0.011	-0.040	1,839.39	1,203.76	1,063.87	490.48	1,537.88	1,028.14
	(0.035)	(0.031)	(0.066)	(0.053)	(0.033)	(0.033)	(1,473.05)	(1,117.95)	(754.59)	(935.01)	(1,662.98)	(1,021.17)
Primary#Forward/General			0.009	0.096**					-861.09	-1,104.21		
			(0.043)	(0.035)					(961.69)	(1,063.52)		
Primary#Other Backward Castes (OBC)			0.044	0.060					-403.27	-1,074.22		
			(0.041)	(0.032)					(945.28)	(982.53)		
Primary#Scheduled Castes (SC)			0.005	0.080*					-732.54	-1,130.65		
			(0.042)	(0.034)					(921.16)	(990.36)		
Primary#Scheduled Tribes (ST)			0.055	0.050					-1,169.39	-1,667.02		
			(0.049)	(0.042)					(956.02)	(1,041.16)		
Primary#Others			0.086	0.103					-1,253.24	-912.26		
			(0.116)	(0.090)					(1,274.94)	(1,464.02)		
Upper Primary#Forward/General			-0.002	0.057					-2,381.02	-561.02		
			(0.038)	(0.035)					(1,819.17)	(1,369.19)		
Upper Primary#Other Backward Castes (OBC)			0.031	0.036					-1,774.52	186.72		
			(0.036)	(0.033)					(1,804.95)	(1,316.20)		
Upper Primary#Scheduled Castes (SC)			0.050	0.079*					-3,091.96	-572.35		
			(0.038)	(0.035)					(1,805.82)	(1,325.04)		
Upper Primary#Scheduled Tribes (ST)			0.048	0.021					-3,081.25	466.28		
			(0.044)	(0.048)					(1,958.48)	(1,673.87)		
Upper Primary#Others			0.219**	0.073					-1,615.36	2,833.57		
			(0.081)	(0.080)					(2,690.76)	(3,437.37)		
Secondary & Above#Forward/General			-0.023	0.068*					-1,587.70	-696.29		
			(0.034)	(0.029)					(1,154.74)	(1,307.46)		
Secondary & Above#Other Backward Castes (OBC)			0.015	0.031					-2,026.72	-288.88		
			(0.032)	(0.027)					(1,117.50)	(1,268.47)		

Secondary & Above#Scheduled Castes (SC)			0.018	0.065*					-2,233.21	-1,404.91		
			(0.033)	(0.029)					(1,204.73)	(1,304.08)		
Secondary & Above#Scheduled Tribes (ST)			0.016	0.038					-969.51	240.16		
			(0.043)	(0.038)					(1,546.60)	(1,633.77)		
Secondary & Above#Others			-0.024	-0.010					4,126.95	1,846.32		
			(0.076)	(0.079)					(3,860.16)	(3,243.19)		
Agriculture#Forward/General					0.121	-0.061					1,529.59	-1,613.37
					(0.113)	(0.061)					(941.42)	(1,044.32)
Agriculture#Other Backward Castes (OBC)					0.130	-0.034					1,685.43*	-1,284.29
					(0.109)	(0.055)					(773.92)	(945.32)
Agriculture#Scheduled Castes (SC)					0.134	-0.027					1,980.41**	-561.41
					(0.110)	(0.056)					(764.19)	(979.53)
Agriculture#Scheduled Tribes (ST)					0.115	-0.040					1,347.92	-1,260.60
					(0.111)	(0.058)					(817.94)	(1,002.36)
Agriculture#Others					-0.011	-0.021					-234.09	-3,390.58
					(0.183)	(0.120)					(1,739.78)	(1,748.13)
Other#Forward/General (except Brahmin)					-0.071	-0.037					3,869.74**	-4,839.92
					(0.050)	(0.053)					(1,417.99)	(3,353.42)
Other#Other Backward Castes (OBC)					-0.031	0.020					2,944.34*	-3,237.33
					(0.045)	(0.047)					(1,235.26)	(3,313.11)
Other#Scheduled Castes (SC)					0.006	0.027					2,848.76*	-2,841.47
					(0.046)	(0.049)					(1,163.91)	(3,260.39)
Other#Scheduled Tribes (ST)					-0.061	-0.032					2,094.08	-1,938.20
					(0.052)	(0.056)					(1,217.68)	(3,379.87)
Other#Others					-0.066	-0.091					6,058.32	7,992.01
					(0.148)	(0.130)					(3,268.06)	(10,846.34)
Constant	1.151***	1.152***	1.159***	1.194***	1.151***	1.152***	-522.94	-3,978.83***	-1,732.42*	-4,478.07***	-370.52	-4,114.60***
	(0.032)	(0.028)	(0.040)	(0.034)	(0.032)	(0.028)	(1,002.40)	(1,244.38)	(987.10)	(1,277.24)	(1,020.99)	(1,174.39)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.238	0.220	0.237	0.220						

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

Models 7 to 12 in Table 21 estimate the role of caste as a moderator in the relationship between mothers' education, employment, and expenditures on children's education, conditional on enrollment. Models 7 and 8 presents two fully controlled models estimating the association between mothers' education, employment, and expenditures on education for girls and boys. Caste is added as a covariate in these two models. Model 8 shows that Forward caste boys have significantly higher investment than Brahmin boys ($p<0.05$). Models 9 and 10 shows that there is no change in the relationship between mothers' education and expenditures based on caste for either boys or girls. Models 11 and 12 test the role of caste as a moderator between mothers' employment and expenditures girls' and boys' education. Among girls, Model 11 reveals that the association of mothers' agricultural employment is more positive for SC ($p<0.01$), and OBC ($p<0.05$). Additionally, the association of mothers' employment in occupations other than agriculture is more positive for girls belonging to any caste as compared to Brahmin girls as compared to girls with non-working mothers.

In sum, for enrollment Forward and SC boys gain more from mothers' education than Brahmin boys. Girls from all castes gained more from their mothers' employment than Brahmin girls. Brahmin (upper caste) mothers have lower rates of employment compared to mothers belonging to other caste groups. This may explain why maternal employment plays a more important role in expenditures for girls from other caste groups.

Religion. Table 22 presents the relationship between mothers' education, employment, religion, and investment in children's education. Models 1 and 2 estimate

the association between mothers' education, employment, and girls' and boys' enrollment in school. Religion is added as another explanatory variable in both these models. Models 1 and 2 reveals that Muslim girls and boys are significantly less likely to be enrolled in school as compared to Hindu girls and boys ($p<.001$). Models 3 and 4 estimate the role of religion as a moderator in the relationship between mothers' education and girls' and boys' enrollment in school. Model 3 shows that the association of mothers' secondary or higher education ($p<0.05$) with enrollment is more positive for Muslim than Hindu girls. For boys also, the association of mothers' primary, and secondary and above education is more positive for Muslim boys than Hindu boys. Also, the positive association between mothers' secondary or higher education and boys' enrollment is stronger for boys who identify Sikh, Jain, Christian, Buddhists, and other religions ($p<0.01$) than Hindu boys. Lastly, Models 5 and 6 estimate the role of religion as a moderator in the relationship between mothers' employment and girls' and boys' enrollment in school. In both models, the association of mothers' employment in occupations other than agriculture with enrollment is lower for Muslim girls and boys than Hindu girls ($p<0.01$) and boys ($p<0.05$).

Table 22: Religion as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Investment Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.062***	0.042***	0.069***	0.052***	-188.33	-298.15	-104.27	-373.77	-197.68	-309.79
	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)	(0.008)	(194.14)	(202.54)	(213.13)	(213.30)	(194.22)	(203.49)
Upper Primary	0.067***	0.051***	0.061***	0.042***	0.067***	0.052***	123.66	-37.91	202.61	60.15	119.51	-44.63
	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)	(232.70)	(289.87)	(255.48)	(324.23)	(232.57)	(290.51)
Secondary & above	0.057***	0.035***	0.051***	0.019*	0.057***	0.036***	2,220.68***	1,881.47***	2,188.97***	1,704.67***	2,217.20***	1,867.04***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(287.40)	(346.00)	(308.82)	(383.74)	(287.63)	(345.78)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.027*	-0.051***	-0.021	-0.046***	49.48	-144.68	53.55	-152.94	92.14	-227.42
	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(194.76)	(195.42)	(193.98)	(192.26)	(199.34)	(195.21)
Other	-0.011	-0.043***	-0.011	-0.044***	0.006	-0.031*	73.88	106.59	73.46	83.77	-188.01	-399.57
	(0.012)	(0.012)	(0.012)	(0.011)	(0.013)	(0.012)	(317.11)	(413.48)	(316.89)	(409.40)	(340.58)	(349.92)
Religion (*omitted category: Hindu*)												
Muslim	-0.070***	-0.103***	-0.087***	-0.131***	-0.060***	-0.096***	-540.64*	-723.11*	-492.81*	-895.22**	-550.94*	-946.19**
	(0.011)	(0.011)	(0.015)	(0.015)	(0.012)	(0.011)	(219.55)	(357.66)	(219.60)	(274.02)	(229.18)	(296.63)
Sikh, Jain, Christian & Others	0.001	-0.023	0.005	-0.054*	0.012	-0.018	578.61	108.68	817.31	-213.46	465.74	-176.23
	(0.014)	(0.014)	(0.026)	(0.026)	(0.014)	(0.014)	(403.36)	(515.63)	(604.67)	(645.82)	(463.80)	(594.99)
Primary#Muslim			0.028	0.057*					-199.43	488.98		
			(0.025)	(0.026)					(418.57)	(572.15)		
Primary#Sikh, Jain, & Others			0.011	0.032					-880.03	141.95		
			(0.038)	(0.035)					(981.50)	(945.31)		
Upper Primary#Muslim			0.044	0.049					-37.64	-251.24		
			(0.027)	(0.026)					(627.59)	(654.18)		
Upper Primary#Sikh, Jain, & Others			-0.009	0.030					-1,134.67	-1,008.86		
			(0.034)	(0.037)					(980.08)	(1,083.74)		
Secondary & Above#Muslim			0.051*	0.092***					-20.57	727.79		
			(0.023)	(0.022)					(802.46)	(1,229.88)		
Secondary & Above#Sikh, Jain, & Others			-0.008	0.076**					218.22	1,240.50		
			(0.029)	(0.029)					(1,009.37)	(1,166.45)		
Agriculture#Muslim					-0.027	-0.026					-1,224.98	172.96
					(0.057)	(0.049)					(768.56)	(575.76)
Agriculture#Sikh, Jain, & Others					-0.053	-0.005					-768.61	790.81
					(0.050)	(0.050)					(636.36)	(1,109.63)
Other#Muslim					-0.094**	-0.085*					802.64	4,105.37
					(0.036)	(0.041)					(783.31)	(3,098.34)
Other#Sikh, Jain, & Others					-0.032	-0.041					1,978.63	2,179.94
					(0.045)	(0.052)					(1,743.71)	(1,940.51)
Constant	1.151***	1.152***	1.156***	1.165***	1.149***	1.149***	-522.94	-3,978.83***	-539.66	-3,882.03***	-511.11	-3,911.57***
	(0.032)	(0.028)	(0.032)	(0.029)	(0.032)	(0.028)	(1,002.40)	(1,244.38)	(1,000.23)	(1,241.78)	(999.72)	(1,239.74)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.237	0.221	0.237	0.220						

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

This section explores the role of religion as a moderator with the dependent variable of conditional expenditures on enrolled children's education. Models 7 and 8 present the association between mothers' education and expenditures on enrolled girls' and boys' education with religion as a covariate. In both models, Muslim children have lower expenditures than Hindu children ($p<0.05$). Models 9 and 10 test the role of religion as a moderator in the relationship between mothers' education and expenditures on girls' and boys' education. For both models, there is no significant difference in the association of mothers' education with conditional expenditures on education by religion. Similarly, Models 11 and 12 indicate that religion does not moderate the relationship between mothers' employment and expenditures for either girls or boys. In sum, for enrollment, both Muslim girls and boys gained more from increases in their mothers' education as compared to Hindu children. However, Muslim children whose mothers were working in occupations other than agriculture had lower rates of enrollment. As Muslim children are significantly less likely to be enrolled in school as compared to Hindu children, mothers' education may play a more important role in Muslim children's enrollment.

Consumption per capita. Table 23 presents the relationship between mothers' education, employment, consumption per capita, and investment in children's education. Models 1 and 2 estimate the association between mothers' education, employment, and girls' and boys' enrollment in school. Consumption per capita is added as an explanatory variable in both models and results indicate that consumption per capita is significantly positively associated with girls' ($p<.001$) and boys' enrollment in school ($p<.01$). Models

3 and 4 test the role of consumption per capita as a moderator in the relationship between mothers' education and girls' and boys' enrollment in school. Among girls, Model 3 shows that the association of mothers' education with enrollment is less positive among girls with secondary or higher educated mothers than girls with illiterate mothers in households with higher per capita consumption ($p<0.01$). Model 4 indicates that the association of mothers' education with enrollment is less positive among boys with mothers who have an upper primary or secondary or above education as compared to boys with illiterate mothers ($p<.001$). Models 5 and 6 estimate the role of consumption per capita as a moderator in the relationship between mothers' employment and children's enrollment in school. Model 5 shows that consumption does not moderate the relationship between mothers' employment and girls' enrollment. Among boys, Model 6 indicates that the association between mothers' non-agricultural employment with enrollment is more positive in households with higher consumption as compared to boys with non-working mothers ($p<0.5$).

Table 23: Consumption as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Investment Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.077***	0.053***	0.068***	0.052***	-188.33	-298.15	-578.75*	-594.14	-186.05	-282.02
	(0.009)	(0.008)	(0.015)	(0.014)	(0.009)	(0.008)	(194.14)	(202.54)	(274.49)	(407.33)	(194.20)	(202.44)
Upper Primary	0.067***	0.051***	0.072***	0.091***	0.067***	0.051***	123.66	-37.91	-261.36	-460.96	123.06	-36.88
	(0.009)	(0.009)	(0.015)	(0.015)	(0.009)	(0.009)	(232.70)	(289.87)	(480.20)	(437.97)	(233.12)	(289.61)
Secondary & above	0.057***	0.035***	0.092***	0.072***	0.056***	0.034***	2,220.68***	1,881.47***	295.11	88.90	2,209.57***	1,851.31***
	(0.010)	(0.009)	(0.014)	(0.012)	(0.010)	(0.009)	(287.40)	(346.00)	(500.17)	(673.89)	(288.56)	(346.67)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.023*	-0.045***	-0.023	-0.029	49.48	-144.68	-117.53	-326.41	459.66	931.74**
	(0.011)	(0.010)	(0.011)	(0.010)	(0.019)	(0.016)	(194.76)	(195.42)	(189.91)	(192.33)	(514.59)	(308.57)
Other	-0.011	-0.043***	-0.009	-0.041***	-0.028	-0.064***	73.88	106.59	-6.91	-2.84	101.24	-985.04
	(0.012)	(0.012)	(0.012)	(0.012)	(0.018)	(0.017)	(317.11)	(413.48)	(313.76)	(406.42)	(661.70)	(1,038.26)
Consumption per capita	0.002***	0.002**	0.005***	0.005***	0.002***	0.002**	250.80***	296.27***	99.14***	157.74**	253.54***	295.96***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(27.57)	(34.51)	(29.26)	(51.60)	(28.19)	(35.57)
Primary#Consumption per capita			-0.002	-0.001					75.23	62.70		
			(0.002)	(0.002)					(57.30)	(70.31)		
Upper Primary#Consumption per capita			-0.001	-0.006***					83.15	85.62		
			(0.002)	(0.002)					(73.63)	(67.84)		
Secondary & above#Consumption per capita			-0.005**	-0.005***					250.75***	227.88**		
			(0.002)	(0.001)					(54.32)	(75.83)		
Agriculture#Consumption per capita					-0.001	-0.005					-98.06	-269.85***
					(0.004)	(0.003)					(139.33)	(64.65)
Other#Consumption per capita					0.003	0.003*					-2.94	159.42
					(0.002)	(0.002)					(105.72)	(190.57)
Constant	1.151***	1.152***	1.130***	1.129***	1.153***	1.152***	-522.94	-3,978.83***	815.71	-2,946.10**	-554.05	-3,945.58***
	(0.032)	(0.028)	(0.034)	(0.029)	(0.032)	(0.028)	(1,002.40)	(1,244.38)	(1,024.08)	(1,230.69)	(1,005.92)	(1,239.83)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.237	0.221	0.237	0.220						

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

The next set of Models 7-12 in Table 23 estimate the association between mothers' education, employment, consumption per capita, and expenditures on children's education, conditional on enrollment. Models 7 and 8 present two fully controlled models testing the association between mothers' education, employment, and conditional expenditures on girls' and boys' education. Consumption per capita is added to both these models as a covariate and both models show that consumption per capita is positively associated with expenditures on girls' and boys' education ($p<.001$). Models 9 and 10 test the role of consumption per capita as a moderator in the relationship between mothers' education and expenditures on education. Both models indicate that the association of mothers' education with expenditures is more positive for children with secondary or higher educated mothers than children with illiterate mothers in households with higher consumption per capita. Models 11 and 12 estimate the role of consumption per capita as a moderator in the relationship between mothers' employment and expenditures on girls' and boys' education. While consumption per capita does not moderate the relationship between mothers' employment and expenditures on girls' education (Model 11), the association of mothers' employment and expenditures is lower for boys with mothers working in agriculture as compared to boys with non-working mothers ($p<.001$) (Model 12).

Taken together, while consumption per capita is positively associated with both enrollment and conditional expenditures on children's education, the association of mothers' higher education with enrollment is lower for children in households with higher consumption. On the contrary, the association of mothers' higher education with

expenditures is stronger in households with higher consumption. The differential role of consumption as a moderator between mothers' education and enrollment and expenditures suggests that both enrollment and expenditures are different constructs. Lastly, the association between mothers' employment and enrollment and expenditures was lower for boys with mothers working in agriculture than boys with unemployed mothers in households with higher per capita consumption.

Gender Empowerment Measure. This section explores the roles of states' performance on the gender empowerment measure (GEM) as a moderator in the relationship between mothers' education, employment, and investment in children's education. Models 1 and 2 in Table 24 present the relationship between mothers' education, employment, and girls' and boys' enrollment in school. In both models, there is a significant positive association between states' performance on the gender empowerment measure and girls' and boys' enrollment in school ($p<0.01$). Models 3 and 4 estimate the role of gender empowerment as a moderator in the relationship between mothers' education and girls' and boys' enrollment in school; Models 5 and 6 test the role of gender empowerment as a moderator in the relationship between mothers' employment and girls' and boys' enrollment in school. States' performance on the GEM does not moderate the relationship between either mothers' education or mothers' employment and girls' and boys' enrollment in school.

Table 24:GEM as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Investment Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.069***	0.053***	0.069***	0.053***	0.069***	0.053***	-152.22	-285.21	-111.23	-270.31	-151.78	-284.71
	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.008)	(193.31)	(203.35)	(197.79)	(203.52)	(193.61)	(203.31)
Upper Primary	0.067***	0.051***	0.066***	0.051***	0.067***	0.052***	133.35	-37.35	61.78	-100.98	122.00	-55.95
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(232.52)	(289.84)	(222.29)	(273.09)	(233.09)	(289.39)
Secondary & above	0.057***	0.035***	0.058***	0.035***	0.058***	0.036***	2,226.98***	1,873.51***	2,215.63***	1,856.77***	2,189.28***	1,837.23***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(287.01)	(345.37)	(282.19)	(345.12)	(290.42)	(346.72)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.025*	-0.048***	-0.026*	-0.048***	-0.026*	-0.049***	66.25	-133.79	101.03	-97.33	78.79	-79.17
	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(194.56)	(195.91)	(194.82)	(195.79)	(189.35)	(187.96)
Other	-0.010	-0.043***	-0.011	-0.043***	-0.010	-0.043***	90.06	117.88	102.02	110.99	111.04	135.65
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(316.04)	(412.70)	(318.59)	(413.28)	(309.55)	(411.06)
Gender Empowerment Measure (GEM)	0.057**	0.056**	0.057*	0.052*	0.056**	0.054*	1,965.81*	1,571.47	1,548.03	1,265.36	2,039.82*	1,656.15
	(0.021)	(0.021)	(0.022)	(0.022)	(0.021)	(0.022)	(791.51)	(1,082.70)	(802.35)	(1,111.59)	(798.07)	(1,088.26)
Primary#GEM			0.005	0.002					359.47*	213.96		
			(0.008)	(0.008)					(174.43)	(199.46)		
Upper Primary#GEM			0.003	0.007					817.34***	539.14		
			(0.009)	(0.008)					(231.82)	(289.37)		
Secondary & above#GEM			-0.005	0.002					437.44	347.91		
			(0.007)	(0.007)					(251.59)	(286.75)		
Agriculture#GEM					0.010	0.013					-320.79	-534.85**
					(0.011)	(0.011)					(163.78)	(182.78)
Other#GEM					0.011	0.013					-536.93	-695.45
					(0.011)	(0.012)					(383.58)	(438.92)
Constant	1.281***	1.277***	1.279***	1.274***	1.279***	1.277***	3,888.51*	-418.01	3,461.97*	-697.12	3,957.70*	-347.30
	(0.058)	(0.057)	(0.058)	(0.057)	(0.058)	(0.057)	(2,077.57)	(2,797.15)	(2,082.71)	(2,818.23)	(2,090.91)	(2,805.09)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.220	0.237	0.220	0.237	0.220						

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

The next set of models' present moderation analyses with the dependent variable of conditional expenditures on enrolled children's education. Models 7 and 8 estimate the association between mothers' education and employment and expenditures on enrolled children's education. States' performance on the GEM is added as a covariate in both models. Models 7 and 8 show that only girl children have significantly higher expenditures in states that perform better on the GEM ($p<.05$). The next two models, Models 9 and 10, estimate the role of gender empowerment as a moderator in the relationship between mothers' education and expenditures among enrolled girls' and boys' education. The association between mothers' education (primary, upper primary) and expenditures is higher for girls as compared to girls with illiterate mothers in states that perform better on the GEM. The last two models, Models 11 and 12, estimate the role of the GEM as a moderator in the relationship between mothers' employment and expenditures on girls' and boys' education. The association between mothers' employment and expenditures is lower among boys with mothers working in agriculture as compared to boys with unemployed mothers ($p<0.01$) in states that perform better on the GEM.

Taken together, for expenditures, girls benefit more from increases in mothers' education when they live in states with higher levels of GEM. Girls with mothers with lower levels of education gain the most when they live in states that have higher levels of GEM. Lastly, the relationship between mothers' agricultural employment and expenditures was lower for boys with mothers working in agriculture than boys with unemployed mothers in states with higher levels of gender empowerment. Because

mothers working in agriculture are more likely to come from households experiencing poverty, regional levels of GEM may be less important for families experiencing poverty.

Table 25: GDI as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Investment Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.066***	0.053***	0.068***	0.052***	-185.26	-284.25	-72.10	-218.37	-181.81	-281.02
	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.008)	(194.20)	(201.85)	(197.74)	(203.30)	(194.77)	(201.67)
Upper Primary	0.067***	0.051***	0.064***	0.049***	0.067***	0.051***	124.78	-44.51	99.42	-57.90	122.58	-49.00
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(232.69)	(289.94)	(220.04)	(281.13)	(232.40)	(290.46)
Secondary & above	0.057***	0.035***	0.063***	0.036***	0.057***	0.036***	2,217.41***	1,877.25***	2,209.34***	1,792.39***	2,208.28***	1,865.70***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(287.29)	(345.71)	(292.35)	(352.63)	(287.33)	(347.39)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.026*	-0.049***	-0.025*	-0.049***	41.65	-173.51	38.07	-151.63	53.06	-172.94
	(0.011)	(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(194.94)	(195.76)	(194.41)	(196.82)	(207.19)	(198.45)
Other	-0.011	-0.043***	-0.011	-0.044***	-0.011	-0.042***	70.39	96.71	64.26	94.71	67.95	94.90
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(316.90)	(412.18)	(316.64)	(412.76)	(316.94)	(418.73)
Gender Development Index (GDI)	-0.007	0.002	0.009	-0.008	-0.006	0.002	-1,001.48	-3,074.57*	-1,658.68	-3,411.46**	-995.47	-3,072.43*
	(0.027)	(0.023)	(0.028)	(0.024)	(0.027)	(0.023)	(866.90)	(1,257.55)	(872.07)	(1,247.51)	(866.20)	(1,259.89)
Primary#GDI			-0.004	0.011					432.24*	-5.92		
			(0.009)	(0.008)					(192.60)	(205.51)		
Upper Primary#GDI			-0.005	0.019*					932.50***	444.14		
			(0.009)	(0.009)					(224.13)	(251.37)		
Secondary & above#GDI			-0.027***	0.010					692.92**	596.11*		
			(0.007)	(0.007)					(234.66)	(301.10)		
Agriculture#GDI					0.011	0.004					-46.16	-133.31
					(0.011)	(0.010)					(196.38)	(195.56)
Other#GDI					0.008	0.018					-314.73	-261.96
					(0.012)	(0.012)					(310.85)	(432.25)
Constant	1.150***	1.152***	1.149***	1.153***	1.150***	1.153***	-814.27	-4,824.59***	-834.96	-4,785.56***	-812.03	-4,826.35***
	(0.033)	(0.029)	(0.033)	(0.029)	(0.033)	(0.029)	(1,042.83)	(1,330.23)	(1,044.77)	(1,330.48)	(1,042.52)	(1,328.34)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.237	0.220	0.237	0.220						

*Note: All models contain all covariates. Full models are available in the appendices. *** p<0.001, ** p<0.01, * p<0.05*

Gender Development Index. Table 25 presents the relationship between mothers' education, employment, gender development index, and investment in children's education. The first two models, Models 1 and 2 presents two fully controlled models testing the association between mothers' education, employment, and children's enrollment in school. GDI is added as an explanatory variable and results indicate that GDI is not associated with children's enrollment in school for either girls or boys. Models 3 and 4 test the role of states' performance on the GDI as a moderator in the relationship between mothers' education and girls' and boys' enrollment in school. Model 3 shows that the association of mothers' education with girls' enrollment in school is lower for girls with secondary or higher educated mothers as compared to girls with illiterate mothers ($p<.001$) in states that perform better on the GDI. Model 4 shows that the association of mothers' education with boys' enrollment in school is more positive for boys with upper primary educated mothers than boys with illiterate mothers ($p<0.05$) in states with higher levels of gender development. The next two models, Models 5 and 6, tests the role of GDI as a moderator in the association between mothers' employment and girls' and boys' enrollment in school and results indicate that the GDI does not moderate the aforementioned relationship for either girls or boys.

The next set of models include expenditures on enrolled children's education as a dependent variable. Models 7 and 8 estimate the relationship between mothers' education, employment, and expenditures on enrolled girls' and boys' education. GDI is added as a covariate in both models. GDI is negatively associated with expenditures on boys' education alone ($p<.05$). The next two models, Models 9 and 10, test the role of

GDI as a moderator in the relationship between mothers' education and expenditures on boys' and girls' education. Model 9 shows that the association of mothers' education with expenditures is more positive for girls with educated mothers (all levels) as compared to girls with illiterate mothers in states that perform better on the GDI. For boys, association of mothers' education with expenditures is more positive for boys with secondary or higher educated mothers ($p<.05$) as compared to boys with illiterate mothers in states with better gender development. The last two models, Models 11 and 12, test the role of GDI as a moderator in the relationship between mothers' employment and expenditures on girls' and boys' education. GDI does not moderate the relationship between mothers' employment and expenditures on children's education for either girls or boys.

In sum, the relationship between mothers' education and conditional expenditures was stronger in states that performed better on the GDI for both girls and boys. Girls gained more than boys from increases in mothers' education in states with higher levels of gender development based on the magnitude of the coefficients for the interaction term. Interestingly, the association of mothers' education with enrollment was lower for girls with secondary or higher educated mothers whereas for boys, the association was more positive for boys with upper primary educated mothers.

Summary of Results

The roles played by caste and religion as moderators suggests that there are different pathways between mothers' education and employment and investment in children's education. For example, girls from all castes gained more expenditures from their mothers' employment than upper caste girls. Turning to religion, for enrollment,

both Muslim girls and boys gained from increases in their mothers' education. However, Muslim children whose mothers were working in occupations other than agriculture had lower rates of enrollment. Because such few Muslim mothers are employed, and the majority of working mothers come from poor families, poverty is one of the main drivers in the negative association of mothers' employment with enrollment. The relationship between mothers' education and enrollment is lower for children with higher educated mothers than children with illiterate mothers in households with higher per capita consumption. On the contrary, relationship between mothers' education and expenditures on education is higher among children with higher educated mothers in households with higher per capita consumption. Community and state level gender norms play an important role in the relationship between mothers' education and employment and expenditures on children's education. The association of mothers' education with expenditures was higher for boys with mothers with higher levels of education who lived in communities with more gender egalitarian norms around IPV. For GEM and GDI, while both boys and girls had higher levels of expenditures in states with higher scores on the GDI, girls benefit more from increases in mothers' education when they live in states with higher levels of gender empowerment and development, as compared to boys.

Chapter 8: Discussion

This section presents a summary of the key findings, overall contributions to the literature, limitations of the analyses, directions for future research, and implications for social work practice and policy. Prior research on gender-based discrimination in parental investment in education has largely focused on the description of this social problem (Azam & Kingdon, 2013; Kaul, 2018; Kingdon, 2005; Lancaster et al., 2008; Saha, 2013). These studies have shown that parents spend significantly more on their boys' education than their girls' education in India.

Existing research on the relationship between mothers' education and parental investment in children's education is limited. Only one study examined the role of fathers' education and found a positive association with expenditures on children's education (Saha, 2013). Two studies examined the association between mothers' education and children's enrollment in school. One study found mixed results (Kambhampati, 2009) and the results for the other study cannot be generalized as it employed retrospective data from a single district in India (Kingdon, 2005). Prior studies testing for the relationship between mothers' employment and enrollment found that there is either a negative (Afridi et al., 2009; Kingdon, 2002) or mixed (Kambhampati, 2009) relationship between the two factors. All the aforementioned studies used cross-sectional data. No studies, to the author's knowledge, have examined the relationship between mothers' education and employment and conditional expenditures on children's education, pathways between mothers' education and employment and investment in children's education, or the role of contextual factors on these relationships.

This study extends the literature in this area by using longitudinal data to explore the role of mothers' education and employment in investment in children's education, and the pathways through which these relationships might work. Parental investment in children's education is operationalized as children's enrollment in school, and conditional on enrollment, expenditures on children's education. Pathways analyzed include mothers' decision-making power and mothers' beliefs in egalitarian gender norms. The current study also investigates whether the relationship between mothers' education and employment, and investment in children's education, differs by child gender, age (6-9, 10-14 and 15-19 years) caste, religion, consumption per capita, community beliefs regarding interpersonal violence, and statewide measures of gender empowerment and gender development.

Mothers' education and investment in children's education

Descriptive statistics from the current study confirm findings from prior research that parents spend more on their boys' education than girls' education across all age groups (Azam & Kingdon, 2013; Kaul, 2018; Kingdon, 2005; Zimmermann, 2012). Only one study had previously tested gender differences in enrollment by age and found that boys were more likely to be enrolled at both the 10-14 and 15-19 age groups (Azam & Kingdon, 2013). The current study found that boys were more likely to be enrolled only in the 10-14 age group.

Mothers' education was differently associated with the two outcomes of enrollment and expenditures on education, conditional on enrollment. Overall, children

(6-19 years) of educated mothers (all levels) were more likely to be enrolled in school as compared to children with illiterate mothers. The associations of mothers' education varied by children's age. Among children 6-9 years, only children with primary educated mothers had higher enrollment whereas among children aged 10-19 years, children with educated mothers (any level) had higher rates of enrollment as compared to children with illiterate mothers. Although these results suggest that even mothers' primary education is sufficient to increase children's enrollment in school, moderation analyses exploring differences by gender indicate that higher levels of mothers' education are more beneficial for girls' enrollment in school. While even lower levels of mothers' education are beneficial for both boys' and girls' enrollment, mothers' secondary or higher education is crucial for closing the gender gap in children's enrollment at higher ages, where there is a significant gender difference in enrollment.

Enrolled children with secondary or higher educated mothers (vs. illiterate mothers) have significantly higher expenditures on education across all ages. While mothers' primary education was beneficial for children's enrollment, it either had a non-significant or negative association (among 15-19 age group) with conditional expenditures. The results of analyses by gender also differed between enrollment and expenditures. The association of mothers' higher education with expenditures was more positive for boys' education in the 6-14 age group while there was no difference by gender in the 15-19 age group. At higher ages, gender discrimination takes place primarily through non-enrollment, rather than conditional expenditures, confirming findings from a previous study (Azam & Kingdon, 2013). Taken together, while mothers'

higher education was advantageous for increases in investment in children's education, mothers' education did not reduce the gender gap in expenditures on education among children aged 6-14 years.

There are two possible scenarios that can explain the gender difference in the association of mothers' education with enrollment and conditional expenditures on education. For girls, the association of mothers' higher education is more positive for enrollment (10-19 years), whereas for boys, the association of mothers' higher education is more positive for expenditures (6-14 years). First, households with higher educated mothers may decide to enroll their daughters in government schools and their sons in private schools. Descriptive statistics from this study and findings from prior studies indicate that boys are more likely to be enrolled in private schools than girls (Azam & Kingdon, 2013; Kaul, 2018; Kingdon, 2017; Sahoo, 2016; Woodhead, Frost, & James, 2013). This would explain how mothers' higher education can be more beneficial for girls' enrollment and still have a stronger relationship with expenditures for boys than girls. Alternatively, in families with higher educated mothers, both boys and girls may be enrolled in the same type of school, but boys may be provided additional resources such as private tuitions, that would lead to a gender disparity in expenditures on education.

Results indicate that although increases in mothers' education are beneficial for investment in children's education, it may not close gender gaps in conditional expenditures on education. This is not the first study to find that increases in mothers' education may not be sufficient to transform existing gender inequalities. Prior studies on children's health have found that educated mothers are more likely to seek sex selective

abortions (Das Gupta, 1983; Jha et al., 2011), and are less likely to hospitalize their daughters as compared to their sons (Bhan et al., 2005). Higher educated mothers may have more sex selective abortions because they can afford them and know how to access them, in India, where sex selective abortions are banned by the government (Das Gupta, 1983; Jha et al., 2011). Education alone may not be sufficient to erode norms of son preference; qualitative studies on sex-selective abortions have found that even highly educated mothers face considerable pressure and abuse from their marital families to undergo sex-selective abortions in India and among Indian origin families in the U.S (Ganatra, Hirve, & Rao, 2001; Puri, Adams, Ivey, & Nachtigall, 2011).

Mothers' employment and investment in children's education

Similar to findings from prior studies (Kambhampati, 2009; Kingdon, 2005), mothers' employment in both agricultural and other occupations (compared to mothers who did not work) was negatively associated with enrollment for children aged 10-19 years. Among children with agricultural working mothers, half of all children lived in families that experienced poverty, with lower incomes than families with non-working or non-agricultural working mothers. This indicates that for children with agricultural working mothers, poverty may be the main driver behind lower rates of enrollment. In lower income households, mothers may need to work and children may not be enrolled in school because parents cannot afford education and children may need to work to help support their families (Kambhampati, 2009; Kingdon, 2002).

Findings for children with mothers working in occupations other than agriculture are more puzzling as mothers working in many different occupations are subsumed in this one category. Descriptive statistics show that these children live in more affluent families than families with mothers working in agriculture and marginally less affluent families than those of non-working mothers. While the association between mothers' employment and children's enrollment is negative, future research should investigate whether this relationship holds true for all types of mothers' employment. In sum, children with working mothers are less likely to be enrolled in school, irrespective of the type of employment, as compared to children with non-working mothers. There was no difference in conditional expenditures between children with working and non-working mothers.

Enrollment vs. Expenditures

Kingdon (2005) proposed that parental discrimination can occur at two levels, that of enrolling or retaining a child in school, and conditional on enrollment, the amount of resources that are spent on the education of boys and girls. While enrollment and expenditures can be conceptualized as two forms of investment in children's education, data from the current study confirms that these two processes are very different from each other. As noted in the previous section, while even primary education of mothers is sufficient to increase enrollment, only children with secondary educated mothers had higher expenditures compared to children with illiterate mothers across all age groups. This suggests that expenditures may be a bigger obstacle than enrollment. Additionally, for enrollment, mothers' education was more beneficial for girls, whereas for

expenditures, mothers' education was more beneficial for boys. This further indicates that expenditures may be a bigger hurdle to overcome as increases in mothers' education alone are not sufficient to close the gender gap in expenditures on children's education.

Enrollment and expenditures were also differentially associated with the covariate of government aid for education. While receipt of government assistance was positively associated with enrollment, it was negatively associated with expenditures for children aged 6-14 years. In India, girls receive more aid for education owing to different policies focused on increasing girls' enrollment in schools. These results point to two potential explanations for observed patterns of discrimination against girls: parents who would otherwise not enroll girls in school may do so because of government incentives (e.g. scholarships, provision of free midday meals), or parents who want to provide some education to girls (but want better education for boys) send girls to government schools because of the lower cost and they use freed up resources to send boys to private school. Future research should investigate these links between governmental assistance and parental investment in children's education.

Pathways

Two pathways, mothers' decision-making power and mothers' beliefs in gender egalitarian norms were analyzed in this study. The roles of two types of gender egalitarian norms were explored: mothers' beliefs in equal or higher education for girls and boys, and mothers' beliefs in support for old age from daughters and both children. Neither mothers' beliefs in gender egalitarian norms nor mothers' decision-making power

mediated the associations between mothers' education and employment and parental investment in children's education. While mothers' beliefs in equal education did not function as a mediator, it was associated with both boys' and girls' enrollment in school. Similarly, mothers' belief in support for old age did not work as a mediator but it was associated with only girls' enrollment in school. None of the mediators were associated with conditional expenditures on children's education.

Moderating Role of contextual factors

The current study also examined the role of different factors such as community norms around interpersonal violence (IPV), gender empowerment measure (GEM), gender development index (GDI), caste, religion, and consumption per capita as moderators in the relationship between mothers' education and employment and investment in children's education. Each of these factors is discussed separately in this section.

Community and regional gender norms

Prior studies have found that the gender gap in education is lower in the Southern and Eastern states as compared to the Northern states (Azam & Kingdon, 2013; Kambhampati, 2009; Kaul, 2018; Kingdon & Theopold, 2008; Lancaster et al., 2008; Zimmermann, 2012). Studies have suggested that these differences may be attributed to differences in gender norms and kinship practices like patrilocal marriages (Azam & Kingdon, 2013; Dyson & Moore, 1983; Kambhampati, 2009; Kaul, 2018; Kingdon, 2005; Rammohan & Vu, 2017). Only one study on education tested this hypothesis by

assessing the role of regional gender equity levels as a moderator in the relationship between mothers' education and children's schooling and found that the effect of mothers' education differs based on the levels of gender equity in a region (Kambhampati, 2009). The current study confirmed this finding and extended the literature by using one community level measure for gender norms and two regional level measures for gender equity. Results indicate that community norms and regional gender equity are important when considering the association of mothers' education with children's schooling. While both girls and boys with secondary or higher educated mothers had higher expenditures as compared to children with illiterate mothers, boys with higher educated mothers had higher expenditures in areas with more gender egalitarian norms around IPV. Norms around IPV may not be strongly related to norms around son preference which may partially explain why the moderation effect is more positive for boys, and not girls.

States' performance on gender indicators also influenced the association between mothers' education and conditional expenditures. The positive associations of mothers' education (all levels) with expenditures was stronger in states that performed better on the GEM and the GDI for girl children. Regional levels of gender equity can be instrumental in reducing gender discrimination in expenditures on children's education.

The results for the moderation analyses differed for children's enrollment. For boys, the association of mothers' upper primary education (vs. illiterate mothers) with enrollment was stronger in states that performed better on the GDI whereas for girls, the association of mothers' secondary or higher education was less positive in states with

higher scores on the GDI. Few mothers in the current study had secondary or higher education which indicates that the association of mothers' secondary education with girls' enrollment may be higher in areas with fewer educated women whereas for boys' enrollment, the association of mothers' upper primary education is more positive in areas with more educated women.

The results for mothers' employment differed by GDI levels in states. The association between mothers' agricultural employment and conditional expenditures was more negative for boys in states that performed well on the GEM. In sum, community gender norms and regional levels of gender equity influenced the relationship between mothers' education and employment and investment in children's education.

Household Consumption

For enrollment, the association of mothers' secondary or higher education is lower in households with lower consumption per capita as compared to children with illiterate mothers. In lower income households, children are less likely to be enrolled, so it is probable that mothers' education has a larger association with enrollment, as compared to higher income households where children are much more likely to be enrolled. On the other hand, the association of mothers' secondary or higher education with expenditures is more positive in household with higher per capita consumption. As higher educated mothers are likely to reside in households with higher incomes, these households would have more resources to spend on their children's education.

The association of mothers' agricultural employment (vs. non-employed) was negative for both enrollment and expenditures for boys living in households with higher consumption. As agricultural working mothers belong to low income families, boys in these households may be engaged in child labor. A small change in consumption is unlikely to change the economic status of the family. Only boys with mothers working in non-agricultural occupations (vs. non-employed) had higher enrollment in households with higher consumption. Taken together, mothers' education is more beneficial for enrollment in households with lower consumption whereas mothers' higher education is more beneficial for expenditures in households with higher levels of consumption.

Religion and Caste

The association of mothers' upper primary or higher education on children's enrollment was stronger for Muslim children than children with illiterate mothers. Because Muslim children have lower enrollment than children belonging to other religions, mothers' education plays a more important role in these families. Muslim children whose mothers were working in occupations other than agriculture had lower enrollment as compared to Hindu children. Muslim women are frequently employed in home-based work which is often seasonal and low-paying. Poverty and a lack of resources may be the main driver behind lower enrollment, and not mothers' employment in occupations other than agriculture.

Turning to caste, for enrollment, the association of mothers' education was more positive for Forward, OBC, and SC (lower caste) boys, who are often less likely to be

enrolled than Brahmin (upper caste) boys. Girls from all castes gained more from their mothers' employment for conditional expenditures than Brahmin girls. Brahmin women, often do not work either to maintain their caste status (Rammohan & Vu, 2017), as they live in patrilineal patriarchal families (Kambhampati, 2009), or because they reside in high income families (Klasen & Pieters, 2015; Rammohan & Vu, 2017). As non-Brahmin mothers are more likely to work, non-Brahmin girls gain more from their mothers' employment in terms of expenditures on education. In sum, children from more disadvantaged religions and castes gained more from their mothers' education that Hindu and upper caste children.

Summary

Overall, mothers' education is positively associated with both enrollment and conditional expenditures on children's education. These relationships differ by the gender of the child. Mothers' higher education was more beneficial for girls' enrollment in school whereas mothers' higher education was more beneficial for conditional expenditures on boys' education. Because parents on average spend more on their boys' education, increases in mothers' education alone cannot transform existing gender inequalities in expenditures on education. Mothers' employment, on the other hand, is negatively associated with children's enrollment, primarily because maternal employment is found among lower-income families. The two processes of enrollment and conditional expenditures are distinct from each other as is illustrated by the differential association of mothers' education and employment with enrollment and conditional expenditures.

The role of two potential pathways between mothers' education and employment and investment in children's education were analyzed. Neither mothers' decision-making power, nor mothers' beliefs in egalitarian gender norms mediated the associations between mothers' education and employment and investment in children's, particularly girls' education.

Although mothers' beliefs in gender egalitarian norms did not mediate the relationship between mothers' education and investment in children' education, community and regional gender norms did influence the relationship between mothers' education and investment in children's education. While regional levels of gender equity strengthened the positive relationship between mothers' education and conditional expenditures on girls' education, boys with higher educated mothers had higher expenditures in communities with more progressive norms around IPV. Both boys and girls gained more from mothers' education for enrollment in households with lower consumption whereas they benefitted more from mothers' education for expenditures in household with higher consumption. Lastly, girls and boys from more disadvantaged religions and castes gained more from their mothers' education that Hindu and upper caste children. In sum, different contextual factors influence the relationship between mothers' education and investment in children's education and the role of contextual factors differs by child gender.

Limitations

Several noteworthy methodological and data challenges warrant discussion. First, mothers' employment was reported by the head of the household in the IHDS-I, while in

the second wave of IHDS, mothers self-report their employment status. The head of households' report of mothers' employment is used to establish a temporal order where the independent variables (mothers' employment and education) were measured at wave 1 and the dependent variables for parental investment in children's education are measured at wave 2. Though using the head of households' report of mothers' employment may introduce some error, establishing correct temporal ordering was vital to protect against the possibility of reverse 'causality', whereby parents' investments in children's schooling could influence maternal employment.

Second, the different categories of mothers' employment were not mutually exclusive, which made it challenging to differentiate between the associations of different types of employment with parental investment in children's education. This limitation was addressed by dividing mothers' employment into two broad categories of agricultural and non-agricultural employment using information on occupations which were coded exclusively. Although the two categories are very broad, it is an improvement over using a binary measure of mothers' employment (vs. unemployment) which would not have allowed for any variation in types of employment.

Third, formal mediation analyses require data from three time-points, but the current dataset only has data from two waves. The independent variables and pathways are measured contemporaneously at IHDS-I, whereas the dependent variables of expenditures and enrollment were measures at IHDS-II. Mothers' decision-making power was an exception as both the pathway and the dependent variables were measured at IHDS-II. Once data from IHDS-III is available, future studies can investigate pathways

between mothers' education and employment and investment in children's education utilizing data from three different time points.

Future Research

This study contributes to the literature on the relationship between mothers' education and employment and children's education. The findings and the limitations of this study also raise important issues to be addressed in future research. First, additional research is required to understand the pathways through which mothers' education impacts parental investment in children's education. In the current study, neither mothers' beliefs in gender egalitarian norms nor mothers' decision-making power could explain why children of better educated mothers have higher enrollment and conditional expenditures on education. Assortative mating is one potential pathway that can be investigated in future studies on the relationship between mothers' education and investment in children's education. Assortative mating refers to the process whereby more educated women are more likely to marry more educated men (Becker, 1973). These men, who may prefer better educated wives, may also choose to educate their daughters. Households where mothers are educated may invest in their daughters' education, not through changes in mothers' decision-making power or beliefs in egalitarian gender norms, but because of both parents' preferences for educated children and awareness of the benefits of education (Glick & Sahn, 2000; Tansel, 2002). Future research can explore whether assortative mating explains the relationship between mothers' education and increased investment in children's education.

Future research should continue to explore why parents choose to invest more in their boys' education. Results from the current study suggest that although mothers' education is positively associated with conditional expenditures on children's education, boys gained more from their mothers' education than girls. Scholars have suggested that it may be either a demand side issue related to sociocultural norms including patrilocal marriages and dowry (Azam & Kingdon, 2013; Kambhampati, 2009; Kingdon, 2005; Rammohan & Vu, 2017), lower rates of return for girls' education (Kingdon & Theopold, 2008), or a supply side issue related to the non-availability of single sex schools for secondary or higher education, especially in rural areas (Azam & Kingdon, 2013; Kingdon, 2005). Future research can investigate the relationship between these factors and parental investment in education to improve our understanding of gender-based discrimination in this domain.

Another direction for future research would be to conduct qualitative research to explore the decision-making processes that underlies parental investment in education. It is improbable that mothers alone take decisions regarding expenditures on their children's education. Research can investigate whether spouses differ on decisions regarding allocation of household resources, and whether spouses take different factors into account when making such decisions. Studies can explore how spouses resolve such disagreements, and if they are resolved over time.

Additional research is required on the role played by governmental assistance in parental investment in education. In the current study, receipt of government aid was positively associated with enrollment but negatively associated with conditional

expenditures for the two lower age groups. Future studies can investigate how receipt of government aid influences parental investment in education: does government assistance increase the likelihood of children, especially girls, being enrolled in government schools so that they can take advantage of public assistance? Or do parents use the freed-up resources to send their boys to private schools?

Future research can further investigate the linkages between different types of mothers' employment and parental investment in children's education. Prior studies on mothers' employment and children's enrollment have not differentiated between different types of mothers' employment (Kambhampati, 2009; Kingdon, 2005). Due to data limitations, the current study could only differentiate between mothers working in agriculture and other occupations. Results show that each type of mothers' employment is differently associated with children's schooling. Future studies can investigate the relationship between different types of mothers' employment and parental investment in children's education.

Implications

Eliminating gender-based discrimination in investment in children's education requires a multifaceted approach and does not lend itself to simple practice or policy recommendations. Results suggest that although mothers' education is beneficial for children's schooling, mothers' education alone is not sufficient to eradicate gender discrimination in children's schooling. There are a number of policy reforms that could ameliorate the current situation. The increasing cost of schooling is often a disincentive for parents to send their girls to private schools (Sahoo, 2016). First, the amount of

government assistance for education needs to be increased. In this study, on average parents spent Rs. 4869 on education whereas the government provided Rs. 489 per child. Clearly, this amount is insufficient to act as an incentive for parents to send their children to school. Second, the government can provide quality, tuition free, compulsory education for all children through a common education system as was proposed in the first education policy in 1968. If India were to create a quality public education system, girls would not have to rely on their parents to gain access to education. It is important to note that such a policy alone will not increase enrollment and grade attainment; the government should track every child of school going age to ensure that they are attending school.

Additionally, the recent move by the State to hold parents accountable for the enrollment of their children, in the Right to Education Act (RTE) 2009, needs to be reversed. The State cannot absolve itself of the responsibility to ensure that the fundamental rights of children are being upheld. At the same time, making education non-formal, and full-time is also complicated as it could lead to many parents opting to send their children to work rather than to school in poverty-stricken families. The needs of children are related to the needs of their family members and the inter-dependency in families requires policy interventions that do not simply prioritize the needs of the child over the needs of the family (Kabeer, 2000a). Perhaps, a more holistic policy approach is required; in addition to providing children with scholarships and tuition-free education, families living below the poverty line should receive general cash assistance to enable them to send their children to school and not to work. Lastly, the quality of education

provided in government schools needs to improve. This is especially important for girls, as boys are much more likely to attend private schools where children have better learning outcomes (Azam & Kingdon, 2013; Sahoo, 2016; Zimmermann, 2012).

Moderation analyses showed that the positive associations of mothers' education are stronger for girls living in states that perform well on the GEM and the GDI, suggesting the need for policy reforms at the structural level. Public policy should be invested not only in changing the power dynamics within families but also the sociopolitical environment within which families are located (Bhan et al., 2005; Desai & Jain, 1994; Kabeer, 2000a). Policies should target women's access to higher education and employment in good jobs to transform existing gender inequalities in education and the labor market. However, increasing women's access to higher education and paid work without transforming labor market inequalities will do little to incentivize the employment of women (Desai & Jain, 1994; Klasen & Pieters, 2015). Seats in parliament should be reserved for women in addition to reservations for jobs in both the public and private sectors. States like Tamil Nadu, Punjab, and Gujarat have reserved 30-33% of jobs in state governments for women. The Central government can build upon such initiatives and reserve 30% (or more) of jobs in all government institutions for women. There is a need to increase the availability of jobs in sectors that are more beneficial for women's employment (agriculture, manufacturing, and white-collar services), including new areas such as export oriented sectors that have been instrumental in increasing women's employment in East Asian countries (Klasen & Pieters, 2015).

The pathways investigated in the current study also provide additional areas for policy reforms. Results indicate that mothers' beliefs in support for old age is positively associated with daughters' enrollment in school, which suggests that parents may invest in their children's education in the hope that they may support them in old age. There is a need for more social security schemes for the elderly so that parents do not have to rely on their children for support. If parents only rely on their children for support in old age, parents will invest only in boys, because it is culturally more acceptable to seek support from them, owing to norms of patrilocal marriage (Das Gupta et al., 2003; Rammohan & Vu, 2017). India has created a pension scheme for the aged, but the scheme provides limited benefits to individuals living below the poverty line. The National Old Age Pension scheme provides just Rs. 300 per month to citizens aged 60-79 years and older and Rs. 500 to citizens aged 80 years or older[1] (HelpAge India 2015). This amount of pension is inadequate to ensure a decent standard of living and it is unsurprising that 80% of the elderly rely on their children for support in old age (Becker, Murphy, & Spenkuch, 2016). More holistic policy solutions that also target social security for older adults are required to transform the existing landscape of gender inequalities in India.

In sum, while increasing maternal education is key to reducing gender-based discrimination in education in India, a much broader and holistic set of policy reforms are necessary to eliminate these disparities. Policies should create a public education system,

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[1] The amount of pension provided varies across different states from Rs. 1000 in Tamil Nadu to Rs. 300 in Uttar Pradesh. The central government provides Rs. 200 per beneficiary and the state government is required to provide a matching amount. The amount provided by the state governments varies across the country.

increase existing government incentives for education, provide general cash assistance to needy families, target women's employment, and increase social security for older adults to address existing inequalities in parental investment in children's education.

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Appendices

Table 26: Mothers' education and employment and relative measure of expenditures on children's education

	Model 1	Model 2
Variables	Tobit Models	
Mother's Education (*omitted category: illiterate*)		
Primary	0.00489	0.0137
	(0.00863)	(0.0117)
Upper Primary	0.0270*	0.0298*
	(0.0108)	(0.0135)
Secondary & above	0.114***	0.123***
	(0.0139)	(0.0159)
Mother's Employment (*omitted category: not-working)*		
Agriculture	-0.0186*	-0.0187*
	(0.00923)	(0.00923)
Other	-0.00850	-0.00872
	(0.0152)	(0.0152)
Primary##Female		-0.0190
		(0.0131)
Upper Primary##Female		-0.00624
		(0.0157)
Secondary & above##Female		-0.0199
		(0.0185)
Female	-0.0667***	-0.0589***
	(0.00581)	(0.00715)
Mother's age	0.00493***	0.00494***
	(0.000725)	(0.000725)
Maternal grandfather's education	0.00195	0.00195
	(0.00104)	(0.00104)
Maternal grandmother's education	0.00783**	0.00784**
	(0.00256)	(0.00256)
Child's age	0.0315***	0.0315***
	(0.00121)	(0.00122)
Siblings	-0.0496***	-0.0497***
	(0.00283)	(0.00282)
Proportion of girls in household	0.000220	0.000241
	(0.000128)	(0.000123)
Father's education	0.00690***	0.00689***
	(0.000933)	(0.000933)
Paternal grandfather's education	0.00193	0.00192
	(0.00133)	(0.00133)
Paternal grandmother's education	-0.00358	-0.00355
	(0.00289)	(0.00289)
Marital relations	0.00304	0.00296
	(0.00620)	(0.00619)
Caste (*omitted category: Brahmin*)		
Forward/General (except Brahmin)	0.00917	0.00910
	(0.0186)	(0.0185)
OBC	0.000402	0.000344
	(0.0180)	(0.0180)
Scheduled Caste	-0.0308	-0.0308
	(0.0188)	(0.0188)
Scheduled Tribe	-0.0112	-0.0113
	(0.0211)	(0.0211)
Others	0.0319	0.0323
	(0.0445)	(0.0445)
Religion (*omitted category: Hindu*)		
Muslim	-0.0333**	-0.0332**
	(0.0123)	(0.0123)
Sikh, Jain, Christian & Others	0.00418	0.00438
	(0.0167)	(0.0167)
Urban residence	0.0553***	0.0553***

	(0.00874)	(0.00874)
Consumption per capita	0.00544***	0.00542***
	(0.00112)	(0.00112)
Government Aid	0.00272*	0.00272*
	(0.00106)	(0.00106)
Constant	-0.0559	-0.0605
	(0.0375)	(0.0378)
Observations	24,406	24,406

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 27: Adding child and maternal health to relationship between mothers' education, employment, and expenditures

	Model 1	Model 2	Model 3
Variables		Tobit models	
Mother's Education (*omitted category: illiterate*)			
Primary	-192.53	-275.13	-202.15
	(150.56)	(154.75)	(151.87)
Upper Primary	130.91	13.29	88.93
	(215.84)	(207.63)	(217.34)
Secondary & above	1,946.84***	1,974.90***	1,932.04***
	(251.23)	(252.30)	(253.47)
Mother's Employment (*omitted category: not-working)*			
Agriculture	161.25	13.14	224.39
	(142.89)	(150.98)	(143.80)
Other	121.51	143.60	193.51
	(281.86)	(283.45)	(289.23)
	-	-	-
Female	1,068.00***	1,045.21***	1,077.24***
	(121.73)	(120.75)	(123.49)
Child's health	81.24***		76.67***
	(12.92)		(13.12)
Mothers' health		60.19**	35.51
		(20.18)	(19.71)
Mother's age	185.84***	217.10***	181.82***
	(39.84)	(47.41)	(40.15)
Maternal grandfather's education	401.28***	492.06***	400.48***
	(23.41)	(24.64)	(24.20)
Maternal grandmother's education	-444.32***	-456.39***	-443.63***
	(47.74)	(50.24)	(48.06)
Child's age	5.03*	2.96	5.27*
	(2.19)	(2.29)	(2.21)
Siblings	182.13***	177.92***	179.77***
	(17.53)	(17.17)	(17.88)
Proportion of girls in household	101.24***	126.21***	107.44***
	(23.50)	(25.93)	(23.59)
Father's education	107.71*	64.64	99.53
	(51.80)	(59.65)	(53.14)
Paternal grandfather's education	102.28	109.44	95.32
	(116.92)	(114.78)	(118.03)
Paternal grandmother's education			
	219.59	817.31	287.77
Marital relations	(446.90)	(436.69)	(441.77)
	-490.36	-30.56	-442.21
Caste (*omitted category: Brahmin*)	(415.46)	(407.19)	(408.55)
Forward/General (except Brahmin)	-1,157.58**	-685.43	-1,090.73**
	(422.29)	(415.75)	(415.99)
OBC	-328.55	372.28	-291.31
	(442.66)	(440.28)	(438.23)
Scheduled Caste	1,310.02	1,342.85	1,360.98
	(1,271.06)	(988.66)	(1,316.20)
Scheduled Tribe			
	-727.12***	-714.42**	-793.54***
Others	(209.40)	(241.01)	(211.37)

	270.33	227.29	165.79
Religion (*omitted category: Hindu*)	(330.23)	(362.46)	(334.33)
Muslim	1,410.97***	1,165.46***	1,333.39***
	(168.26)	(177.99)	(171.80)
Sikh, Jain, Christian & Others	240.06***	275.41***	232.06***
	(22.83)	(26.03)	(22.83)
Urban residence	-1.59	32.00	-0.72
	(26.72)	(24.16)	(26.89)
Consumption per capita	-19.24		-6.70
	(18.79)		(21.62)
Government Aid		-579.15***	-586.94***
		(114.95)	(110.86)
Constant	-725.19	-100.54	1,332.89
	(1,000.62)	(988.32)	(1,115.46)
Observations	16,004	23,608	15,673

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 28: Mixed sex sample: Mothers' education, employment and investment in children's education

	Model 1	Model 2	Model 3	Model 4
	DV: Enrollment		DV: Expenditures	
Variables	LPM		Tobit	
Mother's Education (*omitted category: illiterate*)				
Primary	0.056***	0.040***	-91.45	84.79
	(0.008)	(0.010)	(191.79)	(229.43)
Upper Primary	0.054***	0.042***	9.32	232.19
	(0.009)	(0.011)	(262.45)	(349.33)
Secondary & above	0.049***	0.026*	1,714.68***	1,820.09***
	(0.009)	(0.011)	(316.16)	(412.15)
Mother's Employment (omitted category: Not employed)				
Agriculture	-0.037***	-0.037***	-198.15	-199.00
	(0.009)	(0.009)	(172.09)	(171.90)
Other	-0.016	-0.016	-212.83	-213.46
	(0.011)	(0.011)	(267.49)	(267.25)
Female	-0.016**	-0.031***	-1,019.87***	-858.20***
	(0.005)	(0.007)	(117.94)	(119.17)
Primary##Female		0.032*		-358.12
		(0.013)		(270.60)
Upper Primary##Female		0.024		-449.81
		(0.014)		(356.07)
Secondary & above##Female		0.045***		-213.73
		(0.010)		(437.80)
Mother's age	-0.001	-0.001	86.75***	86.52***
	(0.001)	(0.001)	(15.71)	(15.71)
Maternal grandfather's education	0.002*	0.002*	47.58*	47.38*
	(0.001)	(0.001)	(23.45)	(23.44)
Maternal grandmother's education	-0.002*	-0.002*	192.65***	192.72***
	(0.001)	(0.001)	(51.90)	(51.88)
Child's age	-0.037***	-0.037***	486.52***	487.40***
	(0.001)	(0.001)	(26.31)	(26.33)
Siblings	-0.017***	-0.017***	-436.89***	-437.24***
	(0.003)	(0.003)	(59.23)	(59.22)
Proportion of girls in household	0.000	0.000*	13.90***	13.65***
	(0.000)	(0.000)	(3.99)	(3.99)
Father's education	0.012***	0.012***	164.45***	164.13***
	(0.001)	(0.001)	(20.41)	(20.38)
Paternal grandfather's education	0.002	0.002	105.88***	105.79***
	(0.001)	(0.001)	(28.39)	(28.39)
Paternal grandmother's education	-0.003*	-0.003*	140.83*	141.32*
	(0.001)	(0.001)	(68.94)	(68.95)
Marital relations	0.011*	0.011*	104.59	103.74

	(0.006)	(0.006)	(132.77)	(132.69)
Caste (omitted category: Brahmin)				
Forward/General	-0.007	-0.007	509.95	506.49
	(0.011)	(0.011)	(569.90)	(569.47)
OBC	-0.025*	-0.025*	-315.16	-319.30
	(0.011)	(0.011)	(522.24)	(521.86)
Scheduled Caste	-0.051***	-0.051***	-1,034.82	-1,038.30
	(0.012)	(0.012)	(530.81)	(530.55)
Scheduled Tribe	-0.040**	-0.040**	213.05	212.00
	(0.015)	(0.015)	(548.23)	(547.95)
Others	-0.032	-0.032	-28.47	-22.22
	(0.033)	(0.033)	(1,140.65)	(1,140.80)
Religion (omitted category: Hindu)				
Muslim	-0.096***	-0.096***	-628.29**	-630.20**
	(0.010)	(0.010)	(231.93)	(232.04)
Sikh, Jain, Christian & Others	-0.004	-0.004	328.21	326.13
	(0.014)	(0.014)	(449.27)	(449.29)
Urban residence	-0.005	-0.005	1,205.94***	1,207.22***
	(0.007)	(0.007)	(211.64)	(211.79)
Consumption per capita	0.003***	0.003***	266.27***	266.19***
	(0.001)	(0.001)	(28.78)	(28.77)
Government Aid	0.008***	0.008***	21.01	21.05
	(0.002)	(0.002)	(25.38)	(25.40)
Constant	1.168***	1.174***	-2,254.34*	-2,314.38*
	(0.031)	(0.031)	(996.29)	(997.33)
Observations	20,127	20,127	16,427	16,427
R-squared	0.228	0.229		

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 29: Family composition, mothers' education, employment, and expenditures on children's education

	Tobit Models			
Variables	Only Children		Children with siblings	
Mother's Education (*omitted category: illiterate*)				
Primary	-221.93	-338.55	-188.91	-66.77
	(443.44)	(565.65)	(158.68)	(193.04)
Upper Primary	497.36	740.26	90.05	324.58
	(569.21)	(677.84)	(215.79)	(286.07)
Secondary & above	3,134.47***	3,909.41***	1,911.87***	2,207.50***
	(746.91)	(819.20)	(257.67)	(330.85)
Mother's Employment (omitted category: Not employed)				
Agriculture	-143.34	-177.85	-87.93	-89.33
	(546.47)	(540.13)	(153.20)	(153.13)
Other	2,023.33	1,984.98	-129.85	-135.38
	(1,738.88)	(1,735.27)	(243.59)	(243.53)
Female	386.44	1,057.36	-1,039.52***	-807.92***
	(1,243.30)	(1,273.52)	(118.45)	(119.18)
Primary##Female		235.72		-265.61
		(816.32)		(234.75)
Upper Primary##Female		-510.77		-499.97
		(878.52)		(316.93)
Secondary & above##Female		-1,621.66		-634.59
		(1,002.71)		(372.73)
Mother's age	38.11	41.53	83.25***	83.36***
	(58.31)	(57.72)	(13.22)	(13.23)
Maternal grandfather's education	138.97*	141.00*	49.15*	49.16*
	(55.78)	(55.90)	(21.02)	(21.00)
Maternal grandmother's education	239.17	231.67	201.67***	202.49***
	(154.61)	(153.31)	(44.29)	(44.25)
Child's age	772.94***	771.15***	495.87***	497.30***
	(190.74)	(189.96)	(22.95)	(22.95)
Siblings			-407.54***	-411.43***

			(52.14)	(52.25)
Proportion of girls in household	-15.52	-14.79	4.32	4.76*
	(12.52)	(12.47)	(2.40)	(2.39)
Father's education	241.47***	243.58***	175.69***	175.13***
	(55.76)	(55.88)	(17.39)	(17.36)
Paternal grandfather's education	149.66	148.03	116.73***	116.65***
	(98.79)	(98.46)	(25.51)	(25.49)
Paternal grandmother's education	73.94	75.15	53.17	53.81
	(210.09)	(209.78)	(56.06)	(56.04)
Marital relations	79.36	78.18	99.55	98.19
	(398.38)	(397.73)	(116.50)	(116.47)
Caste (omitted category: Brahmin)				
Forward/General	630.71	630.67	740.89	735.44
	(1,097.36)	(1,097.48)	(471.94)	(471.66)
OBC	242.05	231.40	-150.33	-152.99
	(1,179.35)	(1,181.12)	(432.51)	(432.29)
Scheduled Caste	-895.73	-890.81	-760.46	-763.45
	(1,141.54)	(1,141.89)	(442.22)	(442.08)
Scheduled Tribe	-108.13	-165.19	351.06	344.69
	(1,301.70)	(1,293.89)	(461.13)	(460.74)
Others	2,309.19	2,320.12	1,365.64	1,372.28
	(2,502.96)	(2,499.08)	(1,024.97)	(1,025.81)
Religion (omitted category: Hindu)				
Muslim	896.31	901.16	-781.76***	-781.44***
	(1,547.64)	(1,549.22)	(211.15)	(211.19)
Sikh, Jain, Christian & Others	2,086.95	2,096.76	39.45	44.39
	(1,074.77)	(1,074.20)	(363.73)	(363.91)
Urban residence	950.24	961.08	1,245.15***	1,246.31***
	(552.20)	(550.78)	(181.06)	(180.87)
Consumption per capita	248.62***	247.08***	280.36***	280.12***
	(59.24)	(58.71)	(26.48)	(26.45)
Government Aid	14.84	16.55	33.55	33.55
	(38.94)	(39.10)	(25.08)	(25.10)
Constant	-2,344.32	-2,789.50	-2,066.47*	-2,195.12*
	(3,062.86)	(3,153.33)	(890.41)	(892.42)
Observations	2,416	2,416	21,990	21,990

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 30: Birth order, mothers' education, employment and expenditures on children' education

	Tobit Models			
Variables	Oldest children		Second or older children	
Mother's Education (*omitted category: illiterate*)				
Primary	-162.30	-172.85	-182.67	-38.35
	(243.73)	(329.21)	(169.83)	(209.18)
Upper Primary	390.95	408.00	8.84	335.70
	(320.82)	(384.50)	(229.39)	(335.45)
Secondary & above	2,473.93***	2,951.59***	1,656.90***	2,018.16***
	(383.01)	(475.83)	(277.14)	(357.74)
Mother's Employment (*omitted category: Not employed*)				
Agriculture	24.25	18.98	-199.03	-199.20
	(291.55)	(290.76)	(148.86)	(148.61)
Other	824.97	822.82	-300.18	-307.43
	(688.65)	(688.10)	(228.24)	(228.22)
Female	-754.57*	-469.27	-1,121.93***	-853.38***
	(360.25)	(336.60)	(126.84)	(128.65)
Primary##Female		10.90		-310.86
		(423.49)		(274.33)
Upper Primary##Female		-48.19		-696.48
		(559.07)		(360.76)
Secondary & above##Female		-967.73		-797.04*
		(646.79)		(393.38)

Mother's age	88.13**	88.79**	75.66***	75.98***
	(32.99)	(33.02)	(13.35)	(13.36)
Maternal grandfather's education	82.83*	83.61**	48.53*	48.39*
	(32.30)	(32.31)	(21.02)	(20.98)
Maternal grandmother's education	312.47***	310.28***	120.80**	122.38**
	(81.20)	(80.98)	(39.31)	(39.22)
Child's age	782.96***	785.88***	428.69***	429.90***
	(82.29)	(82.57)	(22.91)	(22.89)
Siblings	-1,299.46***	-1,306.25***	-364.72***	-369.09***
	(191.51)	(192.20)	(51.07)	(51.17)
Proportion of girls in household	-0.75	0.17	5.74*	6.24*
	(4.47)	(4.56)	(2.50)	(2.51)
Father's education	203.94***	203.45***	176.51***	175.85***
	(29.52)	(29.43)	(18.23)	(18.21)
Paternal grandfather's education	130.07**	128.79**	113.12***	113.27***
	(45.48)	(45.39)	(25.21)	(25.21)
Paternal grandmother's education	31.05	32.18	67.79	68.01
	(101.12)	(101.07)	(57.25)	(57.23)
Marital relations	195.84	198.94	49.87	48.05
	(214.08)	(214.52)	(112.84)	(112.79)
Caste (*omitted category: Brahmin*)				
Forward/General	121.70	109.33	1,149.27**	1,144.67**
	(838.34)	(837.92)	(388.09)	(387.61)
OBC	-941.55	-956.16	408.65	407.57
	(804.39)	(804.50)	(349.32)	(349.11)
Scheduled Caste	-1,411.69	-1,426.82	-300.88	-299.09
	(815.06)	(814.43)	(357.65)	(357.56)
Scheduled Tribe	-531.33	-564.53	802.97*	798.23*
	(855.52)	(853.45)	(386.66)	(386.26)
Others	-572.92	-566.60	2,690.85*	2,695.59*
	(1,294.43)	(1,297.00)	(1,196.12)	(1,197.59)
Religion (*omitted category: Hindu*)				
Muslim	-303.96	-314.51	-724.70***	-723.90***
	(556.13)	(554.85)	(211.89)	(211.80)
Sikh, Jain, Christian & Others	557.80	561.70	108.53	107.39
	(604.92)	(605.91)	(388.77)	(388.96)
Urban residence	1,148.98***	1,152.88***	1,241.10***	1,245.00***
	(321.59)	(321.74)	(178.59)	(178.48)
Consumption per capita	289.69***	288.94***	259.61***	259.22***
	(39.21)	(39.02)	(26.04)	(26.01)
Government Aid	-47.71	-47.95	58.62*	58.75*
	(24.46)	(24.48)	(27.26)	(27.27)
Constant	-1,220.83	-1,413.37	-2,172.59**	-2,322.41**
	(1,784.20)	(1,807.30)	(796.41)	(798.84)
Observations	7,519	7,519	16,887	16,887

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 31: Mothers' decision-making power and parental investment in children's education

	Linear Probability Models	Marginal Effects
	DV: Enrolment	DV: Investment

	Girls	Boys	Girls	Boys
Variables	Model 1	Model 2	Model 3	Model 4
Mothers' decision-making power	0.016	-0.011	-84.78	-129.63
	(0.012)	(0.010)	(175.83)	(200.58)
Mother's age	-0.002**	-0.001*	48.97***	73.61***
	(0.001)	(0.001)	(10.15)	(12.79)
Maternal grandfather's education	0.003***	0.004***	41.36**	69.93***
	(0.001)	(0.001)	(15.87)	(18.95)
Maternal grandmother's education	-0.002	-0.003*	185.67***	189.93***
	(0.001)	(0.001)	(34.34)	(47.27)
Child's age	-0.034***	-0.033***	301.99***	360.15***
	(0.001)	(0.001)	(20.39)	(22.04)
Siblings	-0.010**	-0.016***	-335.12***	-388.92***
	(0.003)	(0.003)	(39.92)	(51.41)
Proportion of girls in household	-0.000***	0.001***	-0.94	3.23
	(0.000)	(0.000)	(2.10)	(2.45)
Father's education	0.014***	0.013***	125.02***	178.07***
	(0.001)	(0.001)	(14.21)	(15.34)
Paternal grandfather's education	0.002**	0.001	50.82**	123.24***
	(0.001)	(0.001)	(19.36)	(25.13)
Paternal grandmother's education	-0.005***	-0.003*	134.63**	-0.38
	(0.001)	(0.001)	(43.71)	(58.28)
Marital relations	0.017**	0.002	46.96	196.23
	(0.006)	(0.006)	(90.45)	(109.60)
Caste (*omitted category: Brahmin*)				
Forward/General (except Brahmin)	-0.010	-0.009	-9.68	986.45*
	(0.012)	(0.011)	(417.16)	(383.97)
OBC	-0.043***	-0.011	-298.27	46.13
	(0.012)	(0.010)	(390.35)	(349.37)
Scheduled Caste	-0.060***	-0.053***	-733.94	-405.84
	(0.013)	(0.012)	(395.11)	(356.80)
Scheduled Tribe	-0.061***	-0.052***	-67.97	498.32
	(0.017)	(0.015)	(406.36)	(394.07)
Others	-0.014	-0.048	1,495.08	786.47
	(0.036)	(0.032)	(1,194.27)	(797.22)
Religion (*omitted category: Hindu*)				
Muslim	-0.067***	-0.101***	-376.08*	-561.32*
	(0.011)	(0.011)	(146.15)	(233.39)
Sikh, Jain, Christian & Others	0.007	-0.020	407.33	89.33
	(0.014)	(0.014)	(291.48)	(359.94)
Urban residence	0.022**	0.001	866.55***	1,025.32***
	(0.007)	(0.007)	(142.51)	(165.27)
Consumption per capita	0.002***	0.002***	179.56***	212.34***
	(0.001)	(0.000)	(19.08)	(23.23)
Government Aid	0.009***	0.006***	-1.11	40.89
	(0.001)	(0.002)	(17.29)	(21.47)
Constant	1.180***	1.184***		
	(0.033)	(0.029)		
Observations	13,515	15,319	11,320	12,891
R-squared	0.231	0.215		

Note: Numbers presented are regression coefficients for the LPM, marginal effects of the censored variable for tobit models and robust standard errors in parentheses. Models also control for different states in India using dummy variables.

*** p<0.001, ** p<0.01, * p<0.05

Table 32: Mothers' beliefs in equal education and parental investment in children's education

	LPM Models								DV: Marginal Effects	
	DV: Enrolment		DV: Mothers' beliefs in equal education		DV: Enrolment				Investment	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Mothers' belief in equal education	0.051***	0.045***					0.043***	0.039***	-29.67	24.16
	(0.011)	(0.010)					(0.011)	(0.010)	(154.08)	(137.15)
Mother's Education (omitted category: illiterate)										
Primary			0.066***	0.041***	0.068***	0.053***	0.065***	0.051***		
			(0.010)	(0.010)	(0.009)	(0.008)	(0.009)	(0.008)		
Upper Primary			0.063***	0.066***	0.067***	0.052***	0.064***	0.050***		
			(0.011)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)		
Secondary & above			0.060***	0.065***	0.058***	0.035***	0.056***	0.033***		
			(0.011)	(0.011)	(0.010)	(0.009)	(0.010)	(0.009)		
Mothers' employment (omitted category: none)										
Agriculture			-0.025	-0.033**	-0.026*	-0.049***	-0.024*	-0.047***		
			(0.013)	(0.012)	(0.011)	(0.010)	(0.011)	(0.010)		
Other			-0.029*	-0.039**	-0.011	-0.044***	-0.010	-0.042***		
			(0.015)	(0.014)	(0.012)	(0.012)	(0.012)	(0.012)		
Mother's age	-0.002**	-0.001*	-0.000	0.002*	-0.001	-0.001	-0.001	-0.001	48.85***	73.44***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(10.15)	(12.78)
Maternal grandfather's education	0.003***	0.004***	0.003**	0.002**	0.002*	0.003***	0.002*	0.003***	41.39**	69.79***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(16.01)	(18.98)
Maternal grandmother's education	-0.002	-0.003*	-0.001	0.001	-0.002	-0.002*	-0.002	-0.002*	185.44***	189.32***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(34.32)	(47.30)
Child's age	-0.034***	-0.033***	0.005***	0.000	-0.034***	-0.033***	-0.035***	-0.033***	302.04***	359.87***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.27)	(22.01)
Siblings	-0.009**	-0.015***	-0.012**	-0.014**	-0.008**	-0.015***	-0.007*	-0.015***	-335.71***	-389.40***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(39.97)	(51.41)
Proportion of girls in household	-0.000***	0.001***	0.000	0.000**	-0.000***	0.001***	-0.000***	0.001***	-0.93	3.20
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(2.10)	(2.45)
Father's education	0.013***	0.012***	0.005***	0.003***	0.011***	0.011***	0.011***	0.011***	125.22***	177.93***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.38)	(15.37)
Paternal grandfather's education	0.002**	0.001	-0.001	0.001	0.002*	0.001	0.002*	0.001	50.93**	123.40***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(19.38)	(25.13)
Paternal grandmother's education	-0.005***	-0.003*	0.003	-0.000	-0.004***	-0.003*	-0.005***	-0.003*	135.01**	-0.15
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(43.65)	(58.28)
Marital relations	0.016**	0.000	0.035***	0.035***	0.016**	0.002	0.015*	0.001	45.76	192.14
	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(89.82)	(109.46)
Caste (omitted category: Brahmin)										
Forward/General (except Brahmin)	-0.011	-0.009	0.008	-0.013	-0.009	-0.009	-0.010	-0.008	-8.38	988.17*
	(0.012)	(0.011)	(0.013)	(0.012)	(0.012)	(0.011)	(0.012)	(0.011)	(416.96)	(384.28)
OBC	-0.042***	-0.011	-0.002	-0.007	-0.038**	-0.008	-0.038**	-0.008	-298.34	46.27
	(0.012)	(0.010)	(0.013)	(0.012)	(0.012)	(0.010)	(0.012)	(0.010)	(390.37)	(349.26)
Scheduled Caste	-0.059***	-0.052***	-0.001	-0.008	-0.050***	-0.042***	-0.050***	-0.042***	-735.23	-405.27
	(0.013)	(0.011)	(0.014)	(0.013)	(0.013)	(0.012)	(0.013)	(0.012)	(395.33)	(356.78)
Scheduled Tribe	-0.061***	-0.051***	0.012	-0.024	-0.046**	-0.033*	-0.046**	-0.032*	-69.80	497.18
	(0.017)	(0.015)	(0.020)	(0.019)	(0.017)	(0.015)	(0.017)	(0.015)	(406.51)	(393.70)
Others	-0.015	-0.048	-0.015	0.021	-0.015	-0.045	-0.014	-0.046	1,505.78	793.90
	(0.036)	(0.032)	(0.039)	(0.030)	(0.036)	(0.031)	(0.036)	(0.031)	(1,200.74)	(796.92)
Religion (omitted category: Hindu)										
Muslim	-0.067***	-0.100***	-0.024	-0.012	-0.070***	-0.103***	-0.068***	-0.103***	-375.33*	-558.75*
	(0.011)	(0.011)	(0.013)	(0.012)	(0.011)	(0.011)	(0.011)	(0.011)	(145.96)	(232.91)
Sikh, Jain, Christian & Others	0.006	-0.022	0.019	0.029	0.002	-0.022	0.001	-0.023	408.74	85.45
	(0.014)	(0.014)	(0.016)	(0.015)	(0.014)	(0.014)	(0.014)	(0.014)	(291.53)	(360.29)
Urban residence	0.020**	-0.001	0.041***	0.032***	0.014	-0.008	0.012	-0.009	866.50***	1,024.33***
	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)	(142.18)	(165.39)
Consumption per capita	0.002***	0.002***	-0.000	0.000	0.002***	0.002**	0.002***	0.002**	179.54***	212.42***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(19.08)	(23.21)
Government Aid	0.009***	0.006***	0.000	0.001*	0.009***	0.006***	0.009***	0.006***	-1.12	40.90
	(0.001)	(0.002)	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)	(0.002)	(17.29)	(21.46)
Constant	1.148***	1.140***	0.825***	0.789***	1.165***	1.158***	1.129***	1.127***		

	(0.033)	(0.029)	(0.037)	(0.034)	(0.032)	(0.029)	(0.033)	(0.030)		
Observations	13,515	15,319	13,515	15,319	13,515	15,319	13,515	15,319	11,320	12,891
R-squared	0.233	0.216	0.102	0.091	0.237	0.220	0.238	0.221		

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 33: Mothers' beliefs in support for old age and parental investment in children's education

	LPM Models					Marginal Effects	
	DV: Enrolment		DV: Mothers' belief in support for old age	DV: Enrolment		DV: Investment	
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Mothers' belief in support for old age	0.006	0.022**			0.020*	168.78	0.90
	(0.012)	(0.008)			(0.008)	(174.62)	(315.07)
Mother's Education (*omitted category: illiterate*)							
Primary			0.016	0.068***	0.068***		
			(0.011)	(0.009)	(0.009)		
Upper Primary			0.020	0.067***	0.067***		
			(0.013)	(0.009)	(0.009)		
Secondary & above			0.029*	0.058***	0.058***		
			(0.015)	(0.010)	(0.010)		
Mothers' employment (*omitted category: none*)							
Agriculture			-0.012	-0.026*	-0.025*		
			(0.012)	(0.011)	(0.011)		
Other			-0.002	-0.011	-0.011		
			(0.014)	(0.012)	(0.012)		
Mother's age	-0.001*	-0.002**	0.003***	-0.001	-0.001*	48.34***	73.47***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(10.23)	(12.79)
Maternal grandfather's education	0.004***	0.003***	-0.001	0.002*	0.002*	41.31**	69.87***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(15.89)	(18.96)
Maternal grandmother's education	-0.003*	-0.002	0.002	-0.002	-0.002	185.07***	189.34***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(34.23)	(47.26)
Child's age	-0.033***	-0.034***	-0.000	-0.034***	-0.034***	301.75***	359.91***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.38)	(22.02)
Siblings	-0.016***	-0.009**	-0.012***	-0.008**	-0.008*	-333.40***	-389.72***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(39.95)	(51.47)
Proportion of girls in household	0.001***	-0.001***	0.004***	-0.000***	-0.001***	-1.64	3.21
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(2.20)	(2.51)
Father's education	0.013***	0.014***	0.002	0.011***	0.011***	124.73***	178.06***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.26)	(15.40)
Paternal grandfather's education	0.001	0.002*	0.003	0.002*	0.002*	50.37**	123.44***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(19.32)	(25.13)
Paternal grandmother's education	-0.003*	-0.005***	0.003	-0.004***	-0.005***	134.44**	-0.15
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(43.62)	(58.24)
Marital relations	0.002	0.018**	-0.004	0.016**	0.016**	45.81	192.97
	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(89.94)	(109.14)
Caste (*omitted category: Brahmin*)							
Forward/General (except Brahmin)	-0.009	-0.010	-0.002	-0.009	-0.009	-8.93	987.78*
	(0.011)	(0.012)	(0.021)	(0.012)	(0.012)	(417.33)	(384.38)
OBC	-0.011	-0.043***	0.028	-0.038**	-0.039**	-303.97	46.07
	(0.010)	(0.012)	(0.020)	(0.012)	(0.012)	(390.36)	(349.55)
Scheduled Caste	-0.053***	-0.061***	0.039	-0.050***	-0.051***	-741.60	-405.68
	(0.012)	(0.013)	(0.021)	(0.013)	(0.013)	(395.05)	(356.98)
Scheduled Tribe	-0.052***	-0.063***	0.077**	-0.046**	-0.047**	-81.79	496.15
	(0.015)	(0.017)	(0.025)	(0.017)	(0.017)	(405.83)	(394.82)
Others	-0.047	-0.017	0.040	-0.015	-0.015	1,500.00	794.19
	(0.032)	(0.036)	(0.054)	(0.036)	(0.036)	(1,199.07)	(796.64)
Religion (*omitted category: Hindu*)							
Muslim	-0.101***	-0.068***	-0.015	-0.070***	-0.069***	-371.67*	-559.12*
	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(145.96)	(232.89)
Sikh, Jain, Christian & Others	-0.020	0.006	0.022	0.002	0.002	403.97	86.15
	(0.014)	(0.014)	(0.019)	(0.014)	(0.014)	(292.23)	(359.66)
Urban residence	0.001	0.023**	-0.005	0.014	0.014	865.82***	1,025.17***
	(0.007)	(0.007)	(0.009)	(0.007)	(0.007)	(142.49)	(165.18)
Consumption per capita	0.002***	0.002***	0.003**	0.002***	0.002***	179.05***	212.43***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(19.04)	(23.20)

Government Aid	0.006***	0.009***	0.000	0.009***	0.009***	-1.17	40.91
	(0.002)	(0.001)	(0.000)	(0.001)	(0.001)	(17.26)	(21.46)
Constant	1.176***	1.196***	-0.215***	1.165***	1.169***		
	(0.028)	(0.032)	(0.048)	(0.032)	(0.032)		
Observations	15,319	13,515	13,515	13,515	13,515	11,320	12,891
R-squared	0.214	0.231	0.211	0.237	0.237		

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 34: Community IPV norms as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.056**	0.060***	0.068***	0.052***	-197.43	-308.40	75.03	71.54	-197.75	-316.79
	(0.009)	(0.008)	(0.017)	(0.017)	(0.009)	(0.008)	(193.84)	(202.95)	(225.06)	(295.48)	(193.77)	(203.51)
Upper Primary	0.066***	0.050***	0.068***	0.051**	0.066***	0.050***	99.76	-74.90	-188.08	-740.77	98.57	-78.06
	(0.009)	(0.009)	(0.018)	(0.017)	(0.009)	(0.009)	(232.46)	(290.03)	(368.73)	(412.36)	(232.54)	(290.14)
Secondary & above	0.055***	0.034***	0.070***	0.046***	0.055***	0.034***	2,168.03***	1,839.49***	1,423.59**	52.61	2,166.80***	1,838.61***
	(0.010)	(0.009)	(0.016)	(0.014)	(0.010)	(0.009)	(286.51)	(346.58)	(473.97)	(576.71)	(287.21)	(346.52)
Mother's Employment (*omitted category: Not working*)												
Agriculture	-0.026*	-0.049***	-0.025*	-0.048***	-0.011	-0.063***	48.70	-142.13	31.13	-198.74	145.04	467.42
	(0.011)	(0.010)	(0.011)	(0.010)	(0.018)	(0.016)	(194.52)	(195.07)	(193.53)	(192.25)	(254.56)	(270.01)
Other	-0.010	-0.044***	-0.010	-0.043***	-0.014	-0.089***	98.28	94.20	95.19	90.06	241.96	-489.56
	(0.012)	(0.011)	(0.012)	(0.011)	(0.023)	(0.024)	(317.52)	(412.71)	(316.12)	(410.79)	(355.68)	(525.48)
Community IPV norms	0.026**	0.035***	0.027	0.041**	0.031**	0.023*	876.70***	990.58***	636.84**	311.65	930.54***	1,124.09***
	(0.010)	(0.009)	(0.015)	(0.014)	(0.011)	(0.010)	(215.33)	(230.33)	(201.85)	(250.68)	(266.73)	(278.91)
Primary#Community norms			0.023	-0.015					-477.14	-595.45		
			(0.026)	(0.025)					(461.52)	(474.96)		
Upper Primary#Community norms			-0.004	-0.003					529.55	1,223.76		
			(0.026)	(0.024)					(584.98)	(646.77)		
Secondary & above#Community norms			-0.024	-0.021					1,261.62	3,075.70***		
			(0.022)	(0.019)					(746.04)	(809.55)		
Agriculture#Community norms					-0.030	0.028					-186.60	-1,245.47**
					(0.027)	(0.026)					(391.62)	(430.70)
Other#Community norms					0.007	0.081*					-260.43	979.57
					(0.034)	(0.034)					(786.32)	(1,253.85)
Mother's age	-0.001*	-0.001	-0.001*	-0.001	-0.001*	-0.001	62.27***	101.95***	60.87***	99.14***	62.32***	101.49***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.62)	(18.73)	(14.53)	(18.79)	(14.61)	(18.75)
Maternal grandfather's education	0.002*	0.003***	0.002*	0.003***	0.002*	0.003***	35.70	79.27**	35.36	77.60**	35.52	80.23**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(22.99)	(27.82)	(22.97)	(27.82)	(23.06)	(27.83)
Maternal grandmother's education	-0.002	-0.002*	-0.002	-0.002*	-0.002	-0.002*	218.36***	231.21**	217.43***	227.81**	218.46***	229.98**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(50.16)	(70.67)	(50.04)	(70.39)	(50.20)	(70.73)
Child's age	-0.034***	-0.033***	-0.034***	-0.033***	-0.034***	-0.033***	454.17***	538.44***	455.44***	539.31***	453.94***	538.36***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(32.10)	(33.98)	(31.91)	(33.94)	(32.20)	(34.05)
Siblings	-0.007*	-0.015***	-0.007*	-0.015***	-0.007*	-0.015***	-426.21***	-519.94***	-426.24***	-516.98***	-425.77***	-515.88***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(56.95)	(73.86)	(56.99)	(73.62)	(57.01)	(73.82)
Proportion of girls in household	-0.000***	0.001***	-0.000***	0.001***	-0.000***	0.001***	-2.03	5.28	-2.17	5.21	-2.03	5.27
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(3.02)	(3.55)	(3.01)	(3.55)	(3.02)	(3.54)
Father's education	0.012***	0.011***	0.012***	0.011***	0.012***	0.011***	138.52***	219.82***	138.54***	219.49***	138.72***	219.63***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.22)	(22.52)	(20.17)	(22.48)	(20.18)	(22.56)
Paternal grandfather's education	0.002	0.001	0.002*	0.001	0.002	0.001	61.28*	166.09***	59.60*	163.61***	61.13*	165.49***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(28.55)	(36.90)	(28.58)	(36.88)	(28.54)	(36.91)
Paternal grandmother's education	-0.004***	-0.002	-0.004**	-0.002	-0.004***	-0.002	170.38**	-16.32	166.34*	-23.86	170.54**	-16.26
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(64.31)	(84.23)	(65.21)	(84.12)	(64.27)	(84.14)
Marital relations	0.016**	0.002	0.017**	0.002	0.016**	0.002	-58.68	210.55	-69.57	183.52	-60.56	203.07
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(130.21)	(158.96)	(129.65)	(158.70)	(130.05)	(158.84)

Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.009	-0.010	-0.009	-0.009	-0.009	7.15	1,406.48*	29.71	1,428.12*	5.66	1,414.84*
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(589.16)	(554.54)	(588.96)	(554.44)	(590.09)	(554.42)
OBC	-0.037**	-0.008	-0.037**	-0.008	-0.037**	-0.008	-366.49	176.49	-357.66	187.00	-367.53	185.24
	(0.012)	(0.010)	(0.012)	(0.010)	(0.012)	(0.010)	(554.30)	(511.59)	(554.36)	(512.25)	(554.90)	(511.80)
Scheduled Caste	-0.047***	-0.040***	-0.047***	-0.040***	-0.047***	-0.040***	-990.47	-465.02	-988.67	-462.33	-992.15	-453.83
	(0.013)	(0.011)	(0.013)	(0.011)	(0.013)	(0.011)	(561.44)	(523.66)	(561.96)	(524.26)	(562.42)	(524.22)
Scheduled Tribe	-0.046**	-0.034*	-0.046**	-0.034*	-0.045**	-0.035*	-136.00	717.34	-123.38	722.37	-133.76	730.54
	(0.016)	(0.015)	(0.016)	(0.015)	(0.016)	(0.015)	(573.09)	(572.08)	(571.97)	(572.59)	(573.30)	(572.06)
Others	-0.006	-0.044	-0.007	-0.044	-0.006	-0.043	1,885.03	1,200.81	1,920.15	1,260.54	1,882.89	1,230.65
	(0.035)	(0.031)	(0.035)	(0.031)	(0.035)	(0.031)	(1,469.44)	(1,115.50)	(1,463.82)	(1,111.67)	(1,469.42)	(1,115.15)
Religion (*omitted category: Hindu*)												
Muslim	-0.069***	-0.102***	-0.069***	-0.102***	-0.069***	-0.102***	-525.27*	-710.65*	-525.29*	-707.45*	-523.94*	-706.39*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(219.26)	(357.30)	(219.41)	(356.24)	(219.35)	(358.66)
Sikh, Jain, Christian & Others	0.000	-0.024	0.000	-0.024	0.000	-0.023	542.81	73.17	548.38	89.74	542.48	67.40
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(402.39)	(514.30)	(402.93)	(513.89)	(402.21)	(514.45)
Urban residence	0.013	-0.010	0.013	-0.010	0.013	-0.010	1,068.81***	1,325.43***	1,063.25***	1,309.59***	1,067.65***	1,311.48***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(205.31)	(240.89)	(205.36)	(240.82)	(205.27)	(241.62)
Consumption per capita	0.002***	0.002**	0.002***	0.002**	0.002***	0.002**	250.79***	295.01***	248.79***	290.06***	250.78***	294.43***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(27.51)	(34.43)	(27.42)	(34.00)	(27.51)	(34.41)
Government Aid	0.009***	0.006***	0.009***	0.006***	0.009***	0.006***	-2.13	58.58	-2.06	58.65	-2.12	58.46
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(25.13)	(31.16)	(25.08)	(31.10)	(25.13)	(31.12)
Constant	1.143***	1.139***	1.141***	1.135***	1.142***	1.144***	-773.72	-4,315.66***	-582.72	-3,809.14**	-795.74	-4,346.72***
	(0.032)	(0.029)	(0.033)	(0.029)	(0.032)	(0.029)	(1,009.58)	(1,243.97)	(998.40)	(1,237.31)	(1,010.75)	(1,238.17)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.220	0.237	0.220	0.237	0.221						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 35: Caste as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.040	-0.018	0.068***	0.052***	-188.33	-298.15	496.24	777.82	-193.47	-306.01
	(0.009)	(0.008)	(0.039)	(0.030)	(0.009)	(0.008)	(194.14)	(202.54)	(880.61)	(942.86)	(194.36)	(203.16)
Upper Primary	0.067***	0.051***	0.037	0.004	0.067***	0.051***	123.66	-37.91	2,343.25	105.90	121.93	-70.30
	(0.009)	(0.009)	(0.034)	(0.031)	(0.009)	(0.009)	(232.70)	(289.87)	(1,764.80)	(1,256.81)	(233.40)	(290.64)
Secondary & above	0.057***	0.035***	0.050	-0.012	0.057***	0.035***	2,220.68***	1,881.47***	3,966.40***	2,423.74*	2,233.64***	1,874.75***
	(0.010)	(0.009)	(0.031)	(0.026)	(0.010)	(0.009)	(287.40)	(346.00)	(1,053.62)	(1,172.58)	(289.07)	(345.69)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.025*	-0.049***	-0.152	-0.014	49.48	-144.68	27.18	-140.80	-1,667.43*	986.80
	(0.011)	(0.010)	(0.011)	(0.010)	(0.108)	(0.053)	(194.76)	(195.42)	(194.40)	(196.46)	(733.98)	(923.54)
Other	-0.011	-0.043***	-0.011	-0.044***	0.019	-0.048	73.88	106.59	50.32	98.73	-2,748.09*	3,063.53
	(0.012)	(0.012)	(0.012)	(0.012)	(0.041)	(0.044)	(317.11)	(413.48)	(319.30)	(414.73)	(1,077.77)	(3,225.36)
Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.010	-0.002	-0.063*	-0.006	-0.006	3.37	1,396.21*	1,251.35*	1,986.95**	-288.52	1,724.83**
	(0.012)	(0.011)	(0.031)	(0.026)	(0.012)	(0.011)	(589.12)	(555.27)	(503.49)	(762.11)	(637.42)	(555.45)
OBC	-0.037**	-0.008	-0.053	-0.043	-0.038**	-0.009	-385.65	157.50	806.34	518.35	-639.16	429.00
	(0.012)	(0.010)	(0.029)	(0.024)	(0.012)	(0.010)	(554.09)	(512.04)	(432.67)	(662.38)	(603.63)	(517.68)
Scheduled Caste	-0.048***	-0.042***	-0.060*	-0.089***	-0.053***	-0.046***	-1,027.96	-507.50	395.86	113.56	-1,331.20*	-398.40
	(0.013)	(0.012)	(0.029)	(0.024)	(0.013)	(0.012)	(561.35)	(524.07)	(442.84)	(677.50)	(614.77)	(537.75)
Scheduled Tribe	-0.045**	-0.033*	-0.063*	-0.069*	-0.035	-0.026	-109.59	725.47	1,198.06*	1,090.72	-119.74	869.78
	(0.016)	(0.015)	(0.032)	(0.027)	(0.021)	(0.017)	(573.41)	(572.69)	(466.58)	(703.18)	(681.14)	(640.36)

Others	-0.007	-0.045	-0.041	-0.084	0.011	-0.040	1,839.39	1,203.76	1,063.87	490.48	1,537.88	1,028.14
	(0.035)	(0.031)	(0.066)	(0.053)	(0.033)	(0.033)	(1,473.05)	(1,117.95)	(754.59)	(935.01)	(1,662.98)	(1,021.17)
Primary#Forward/General			0.009	0.096**					-861.09	-1,104.21		
			(0.043)	(0.035)					(961.69)	(1,063.52)		
Primary#Other Backward Castes (OBC)			0.044	0.060					-403.27	-1,074.22		
			(0.041)	(0.032)					(945.28)	(982.53)		
Primary#Scheduled Castes (SC)			0.005	0.080*					-732.54	-1,130.65		
			(0.042)	(0.034)					(921.16)	(990.36)		
Primary#Scheduled Tribes (ST)			0.055	0.050					-1,169.39	-1,667.02		
			(0.049)	(0.042)					(956.02)	(1,041.16)		
Primary#Others			0.086	0.103					-1,253.24	-912.26		
			(0.116)	(0.090)					(1,274.94)	(1,464.02)		
Upper Primary#Forward/General			-0.002	0.057					-2,381.02	-561.02		
			(0.038)	(0.035)					(1,819.17)	(1,369.19)		
Upper Primary#Other Backward Castes (OBC)			0.031	0.036					-1,774.52	186.72		
			(0.036)	(0.033)					(1,804.95)	(1,316.20)		
Upper Primary#Scheduled Castes (SC)			0.050	0.079*					-3,091.96	-572.35		
			(0.038)	(0.035)					(1,805.82)	(1,325.04)		
Upper Primary#Scheduled Tribes (ST)			0.048	0.021					-3,081.25	466.28		
			(0.044)	(0.048)					(1,958.48)	(1,673.87)		
Upper Primary#Others			0.219**	0.073					-1,615.36	2,833.57		
			(0.081)	(0.080)					(2,690.76)	(3,437.37)		
Secondary & Above#Forward/General			-0.023	0.068*					-1,587.70	-696.29		
			(0.034)	(0.029)					(1,154.74)	(1,307.46)		
Secondary & Above#Other Backward Castes (OBC)			0.015	0.031					-2,026.72	-288.88		
			(0.032)	(0.027)					(1,117.50)	(1,268.47)		
Secondary & Above#Scheduled Castes (SC)			0.018	0.065*					-2,233.21	-1,404.91		
			(0.033)	(0.029)					(1,204.73)	(1,304.08)		
Secondary & Above#Scheduled Tribes (ST)			0.016	0.038					-969.51	240.16		
			(0.043)	(0.038)					(1,546.60)	(1,633.77)		
Secondary & Above#Others			-0.024	-0.010					4,126.95	1,846.32		
			(0.076)	(0.079)					(3,860.16)	(3,243.19)		
Agriculture#Forward/General					0.121	-0.061					1,529.59	-1,613.37
					(0.113)	(0.061)					(941.42)	(1,044.32)
Agriculture#Other Backward Castes (OBC)					0.130	-0.034					1,685.43*	-1,284.29
					(0.109)	(0.055)					(773.92)	(945.32)
Agriculture#Scheduled Castes (SC)					0.134	-0.027					1,980.41**	-561.41
					(0.110)	(0.056)					(764.19)	(979.53)
Agriculture#Scheduled Tribes (ST)					0.115	-0.040					1,347.92	-1,260.60
					(0.111)	(0.058)					(817.94)	(1,002.36)
Agriculture#Others					-0.011	-0.021					-234.09	-3,390.58
					(0.183)	(0.120)					(1,739.78)	(1,748.13)
Other#Forward/General (except Brahmin)					-0.071	-0.037					3,869.74**	-4,839.92
					(0.050)	(0.053)					(1,417.99)	(3,353.42)
Other#Other Backward Castes (OBC)					-0.031	0.020					2,944.34*	-3,237.33
					(0.045)	(0.047)					(1,235.26)	(3,313.11)
Other#Scheduled Castes (SC)					0.006	0.027					2,848.76*	-2,841.47
					(0.046)	(0.049)					(1,163.91)	(3,260.39)
Other#Scheduled Tribes (ST)					-0.061	-0.032					2,094.08	-1,938.20
					(0.052)	(0.056)					(1,217.68)	(3,379.87)
Other#Others					-0.066	-0.091					6,058.32	7,992.01
					(0.148)	(0.130)					(3,268.06)	(10,846.34)
Mother's age	-0.001*	-0.001	-0.001	-0.001	-0.001	-0.001	64.53***	103.38***	62.93***	103.54***	64.51***	103.94***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.70)	(18.75)	(14.86)	(18.66)	(14.73)	(18.71)
Maternal grandfather's education	0.002*	0.003***	0.002*	0.003***	0.002*	0.003***	36.90	79.95**	37.60	80.10**	35.81	80.82**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(23.00)	(27.80)	(22.86)	(27.89)	(22.99)	(27.80)
Maternal grandmother's education	-0.002	-0.002*	-0.002	-0.002*	-0.002	-0.002*	217.85***	231.58**	212.03***	230.67**	217.58***	231.11**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(50.24)	(70.72)	(49.88)	(71.31)	(50.10)	(70.59)
Child's age	-0.034***	-0.033***	-0.034***	-0.033***	-0.034***	-0.033***	454.75***	539.59***	456.84***	539.14***	454.59***	539.61***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(32.07)	(34.04)	(32.04)	(34.06)	(32.08)	(34.23)
Siblings	-0.007*	-0.015***	-0.007*	-0.015***	-0.007*	-0.015***	-426.33***	-523.55***	-423.04***	-521.68***	-427.82***	-522.96***

	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(57.06)	(74.07)	(56.87)	(74.02)	(57.20)	(74.13)
Proportion of girls in household	-0.000***	0.001***	-0.000***	0.001***	-0.000***	0.001***	-1.86	5.08	-1.95	4.95	-1.92	4.74
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(3.02)	(3.55)	(3.03)	(3.57)	(3.03)	(3.56)
Father's education	0.012***	0.011***	0.012***	0.011***	0.012***	0.011***	139.65***	220.79***	140.05***	220.10***	138.25***	221.80***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.30)	(22.52)	(20.05)	(22.44)	(20.25)	(22.48)
Paternal grandfather's education	0.002*	0.001	0.002*	0.001	0.002*	0.001	63.16*	169.23***	62.69*	169.81***	62.74*	170.10***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(28.53)	(36.88)	(28.70)	(36.87)	(28.43)	(36.87)
Paternal grandmother's education	-0.004***	-0.003*	-0.004**	-0.003*	-0.004***	-0.002	171.72**	-17.82	161.43*	-20.73	171.56**	-19.53
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(64.25)	(84.31)	(64.34)	(83.91)	(63.99)	(84.62)
Marital relations	0.017**	0.002	0.017**	0.002	0.017**	0.002	-44.68	223.02	-39.86	237.99	-49.07	217.62
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(130.64)	(159.06)	(129.62)	(159.95)	(131.27)	(159.57)
Religion (*omitted category: Hindu*)												
Muslim	-0.070***	-0.103***	-0.073***	-0.102***	-0.069***	-0.103***	-540.64*	-723.11*	-500.45*	-719.24*	-545.36*	-744.08*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(219.55)	(357.66)	(222.54)	(358.50)	(221.47)	(360.32)
Sikh, Jain, Christian & Others	0.001	-0.023	0.001	-0.024	0.001	-0.023	578.61	108.68	570.94	117.67	553.25	96.67
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(403.36)	(515.63)	(406.62)	(512.85)	(404.70)	(515.24)
Urban residence	0.015*	-0.008	0.015*	-0.009	0.015*	-0.008	1,115.28***	1,369.86***	1,124.64***	1,374.77***	1,100.00***	1,358.73***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(205.24)	(240.38)	(205.86)	(240.18)	(205.51)	(241.77)
Consumption per capita	0.002***	0.002**	0.002***	0.002**	0.002***	0.002**	250.80***	296.27***	250.06***	295.39***	252.27***	294.17***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(27.57)	(34.51)	(27.64)	(34.56)	(27.54)	(34.49)
Government Aid	0.009***	0.006***	0.009***	0.006***	0.009***	0.006***	-2.38	59.07	-3.69	58.36	-2.99	55.79*
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(25.21)	(31.11)	(24.18)	(30.44)	(25.22)	(27.81)
Constant	1.151***	1.152***	1.159***	1.194***	1.151***	1.152***	-522.94	-3,978.83**	-1,732.42	4,478.07***	-370.52	4,114.60***
	(0.032)	(0.028)	(0.040)	(0.034)	(0.032)	(0.028)	(1,002.40)	(1,244.38)	(987.10)	(1,277.24)	(1,020.99)	(1,174.39)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.238	0.220	0.237	0.220						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 36: Religion as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.062***	0.042***	0.069***	0.052***	-188.33	-298.15	-104.27	-373.77	-197.68	-309.79
	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)	(0.008)	(194.14)	(202.54)	(213.13)	(213.30)	(194.22)	(203.49)
Upper Primary	0.067***	0.051***	0.061***	0.042***	0.067***	0.052***	123.66	-37.91	202.61	60.15	119.51	-44.63
	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)	(232.70)	(289.87)	(255.48)	(324.23)	(232.57)	(290.51)
Secondary & above	0.057***	0.035***	0.051***	0.019*	0.057***	0.036***	2,220.68***	1,881.47***	2,188.97***	1,704.67***	2,217.20***	1,867.04***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(287.40)	(346.00)	(308.82)	(383.74)	(287.63)	(345.78)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.027*	-0.051***	-0.021	-0.046***	49.48	-144.68	53.55	-152.94	92.14	-227.42
	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(194.76)	(195.42)	(193.98)	(192.26)	(199.34)	(195.21)
Other	-0.011	-0.043***	-0.011	-0.044***	0.006	-0.031*	73.88	106.59	73.46	83.77	-188.01	-399.57
	(0.012)	(0.012)	(0.012)	(0.011)	(0.013)	(0.012)	(317.11)	(413.48)	(316.89)	(409.40)	(340.58)	(349.92)
Religion (*omitted category: Hindu*)												
Muslim	-0.070***	-0.103***	-0.087***	-0.131***	-0.060***	-0.096***	-540.64*	-723.11*	-492.81*	-895.22**	-550.94*	-946.19**
	(0.011)	(0.011)	(0.015)	(0.015)	(0.012)	(0.011)	(219.55)	(357.66)	(219.60)	(274.02)	(229.18)	(296.63)
Sikh, Jain, Christian & Others	0.001	-0.023	0.005	-0.054*	0.012	-0.018	578.61	108.68	817.31	-213.46	465.74	-176.23
	(0.014)	(0.014)	(0.026)	(0.026)	(0.014)	(0.014)	(403.36)	(515.63)	(604.67)	(645.82)	(463.80)	(594.99)
Primary#Muslim			0.028	0.057*					-199.43	488.98		
			(0.025)	(0.026)					(418.57)	(572.15)		
Primary#Sikh, Jain, & Others			0.011	0.032					-880.03	141.95		
			(0.038)	(0.035)					(981.50)	(945.31)		
Upper Primary#Muslim			0.044	0.049					-37.64	-251.24		
			(0.027)	(0.026)					(627.59)	(654.18)		
Upper Primary#Sikh, Jain, & Others			-0.009	0.030					-1,134.67	-1,008.86		
			(0.034)	(0.037)					(980.08)	(1,083.74)		
Secondary & Above#Muslim			0.051*	0.092***					-20.57	727.79		
			(0.023)	(0.022)					(802.46)	(1,229.88)		
Secondary & Above#Sikh, Jain, & Others			-0.008	0.076**					218.22	1,240.50		
			(0.029)	(0.029)					(1,009.37)	(1,166.45)		
Agriculture#Muslim					-0.027	-0.026					-1,224.98	172.96
					(0.057)	(0.049)					(768.56)	(575.76)
Agriculture#Sikh, Jain, & Others					-0.053	-0.005					-768.61	790.81
					(0.050)	(0.050)					(636.36)	(1,109.63)
Other#Muslim					-0.094**	-0.085*					802.64	4,105.37
					(0.036)	(0.041)					(783.31)	(3,098.34)
Other#Sikh, Jain, & Others					-0.032	-0.041					1,978.63	2,179.94
					(0.045)	(0.052)					(1,743.71)	(1,940.51)
Mother's age	-0.001*	-0.001	-0.001	-0.001	-0.001	-0.001	64.53***	103.38***	64.57***	103.40***	64.10***	103.63***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.70)	(18.75)	(14.63)	(18.83)	(14.73)	(18.75)
Maternal grandfather's education	0.002*	0.003***	0.002*	0.003***	0.002*	0.003***	36.90	79.95**	37.25	80.47**	37.11	79.37**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(23.00)	(27.80)	(22.99)	(27.73)	(23.02)	(27.82)
Maternal grandmother's education	-0.002	-0.002*	-0.002	-0.003*	-0.002	-0.002*	217.85***	231.58**	217.93***	230.03**	217.12***	228.89**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(50.24)	(70.72)	(50.32)	(70.66)	(50.29)	(70.93)
Child's age	-0.034***	-0.033***	-0.034***	-0.033***	-0.034***	-0.033***	454.75***	539.59***	454.84***	538.13***	455.02***	539.39***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(32.07)	(34.04)	(31.98)	(33.69)	(32.11)	(34.06)
Siblings	-0.007*	-0.015***	-0.007*	-0.015***	-0.007*	-0.015***	-426.33***	-523.55***	-428.15***	-524.58***	-425.70***	-528.95***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(57.06)	(74.07)	(56.96)	(73.94)	(57.14)	(74.58)
Proportion of girls in household	-0.000***	0.001***	-0.000***	0.001***	-0.000***	0.001***	-1.86	5.08	-1.77	5.03	-2.06	5.05
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(3.02)	(3.55)	(3.03)	(3.56)	(3.03)	(3.57)
Father's education	0.012***	0.011***	0.012***	0.011***	0.012***	0.011***	139.65***	220.79***	140.28***	221.35***	138.81***	219.17***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.30)	(22.52)	(20.10)	(22.30)	(20.33)	(22.30)
Paternal grandfather's education	0.002*	0.001	0.002*	0.001	0.002*	0.001	63.16*	169.23***	62.23*	167.66***	62.71*	167.69***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(28.53)	(36.88)	(28.46)	(36.97)	(28.51)	(36.96)
Paternal grandmother's education	-0.004***	-0.003*	-0.004**	-0.003*	-0.004***	-0.002	171.72**	-17.82	170.74**	-19.15	170.09**	-20.14
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(64.25)	(84.31)	(64.14)	(85.23)	(64.19)	(84.31)

Marital relations	0.017**	0.002	0.016**	0.002	0.017**	0.002	-44.68	223.02	-45.86	221.29	-41.68	225.85
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(130.64)	(159.06)	(130.89)	(159.81)	(130.83)	(160.59)
Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.010	-0.010	-0.013	-0.010	-0.010	3.37	1,396.21*	-6.65	1,345.50*	-17.61	1,390.11*
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(589.12)	(555.27)	(591.62)	(557.32)	(589.59)	(555.34)
OBC	-0.037**	-0.008	-0.038**	-0.012	-0.037**	-0.008	-385.65	157.50	-385.79	122.54	-415.49	146.52
	(0.012)	(0.010)	(0.012)	(0.010)	(0.012)	(0.010)	(554.09)	(512.04)	(553.68)	(511.21)	(554.59)	(511.13)
Scheduled Caste	-0.048***	-0.042***	-0.050***	-0.047***	-0.049***	-0.042***	-1,027.96	-507.50	-1,031.24	-558.85	-1,039.25	-515.36
	(0.013)	(0.012)	(0.013)	(0.011)	(0.013)	(0.011)	(561.35)	(524.07)	(560.63)	(522.30)	(561.12)	(524.00)
Scheduled Tribe	-0.045**	-0.033*	-0.048**	-0.037*	-0.046**	-0.034*	-109.59	725.47	-106.02	714.70	-133.30	714.06
	(0.016)	(0.015)	(0.017)	(0.015)	(0.016)	(0.015)	(573.41)	(572.69)	(573.42)	(570.34)	(573.08)	(573.06)
Others	-0.007	-0.045	-0.009	-0.051	-0.008	-0.045	1,839.39	1,203.76	1,837.81	1,198.31	1,829.86	1,244.14
	(0.035)	(0.031)	(0.035)	(0.031)	(0.034)	(0.031)	(1,473.05)	(1,117.95)	(1,480.44)	(1,118.09)	(1,473.39)	(1,120.22)
Urban residence	0.015*	-0.008	0.015*	-0.008	0.015*	-0.008	1,115.28***	1,369.86***	1,118.33***	1,374.48***	1,115.16***	1,382.64***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(205.24)	(240.38)	(205.65)	(241.01)	(205.47)	(239.78)
Consumption per capita	0.002***	0.002**	0.002***	0.002**	0.002***	0.002**	250.80***	296.27***	250.87***	296.54***	250.67***	296.14***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(27.57)	(34.51)	(27.58)	(34.59)	(27.54)	(34.52)
Government Aid	0.009***	0.006***	0.009***	0.006***	0.009***	0.006***	-2.38	59.07	-2.51	59.14	-3.30	59.03
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(25.21)	(31.11)	(25.21)	(31.13)	(25.28)	(31.18)
Constant	1.151***	1.152***	1.156***	1.165***	1.149***	1.149***	-522.94	-3,978.83**	-539.66	-3,882.03**	-511.11	-3,911.57**
	(0.032)	(0.028)	(0.032)	(0.029)	(0.032)	(0.028)	(1,002.40)	(1,244.38)	(1,000.23)	(1,241.78)	(999.72)	(1,239.74)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.237	0.221	0.237	0.220						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 37: Consumption as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.077***	0.053***	0.068***	0.052***	-188.33	-298.15	-578.75*	-594.14	-186.05	-282.02
	(0.009)	(0.008)	(0.015)	(0.014)	(0.009)	(0.008)	(194.14)	(202.54)	(274.49)	(407.33)	(194.20)	(202.44)
Upper Primary	0.067***	0.051***	0.072***	0.091***	0.067***	0.051***	123.66	-37.91	-261.36	-460.96	123.06	-36.88
	(0.009)	(0.009)	(0.015)	(0.015)	(0.009)	(0.009)	(232.70)	(289.87)	(480.20)	(437.97)	(233.12)	(289.61)
Secondary & above	0.057***	0.035***	0.092***	0.072***	0.056***	0.034***	2,220.68***	1,881.47***	295.11	88.90	2,209.57***	1,851.31***
	(0.010)	(0.009)	(0.014)	(0.012)	(0.010)	(0.009)	(287.40)	(346.00)	(500.17)	(673.89)	(288.56)	(346.67)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.023*	-0.045***	-0.023	-0.029	49.48	-144.68	-117.53	-326.41	459.66	931.74**
	(0.011)	(0.010)	(0.011)	(0.010)	(0.019)	(0.016)	(194.76)	(195.42)	(189.91)	(192.33)	(514.59)	(308.57)
Other	-0.011	-0.043***	-0.009	-0.041***	-0.028	-0.064***	73.88	106.59	-6.91	-2.84	101.24	-985.04
	(0.012)	(0.012)	(0.012)	(0.012)	(0.018)	(0.017)	(317.11)	(413.48)	(313.76)	(406.42)	(661.70)	(1,038.26)
Consumption per capita	0.002***	0.002**	0.005***	0.005***	0.002***	0.002**	250.80***	296.27***	99.14***	157.74**	253.54***	295.96***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(27.57)	(34.51)	(29.26)	(51.60)	(28.19)	(35.57)
Primary#Consumption per capita			-0.002	-0.001					75.23	62.70		
			(0.002)	(0.002)					(57.30)	(70.31)		
Upper Primary#Consumption per capita			-0.001	-0.006***					83.15	85.62		
			(0.002)	(0.002)					(73.63)	(67.84)		
Secondary & above#Consumption per capita			-0.005**	-0.005***					250.75***	227.88**		
			(0.002)	(0.001)					(54.32)	(75.83)		
Agriculture#Consumption per capita					-0.001	-0.005					-98.06	-269.85***
					(0.004)	(0.003)					(139.33)	(64.65)
Other#Consumption per capita					0.003	0.003*					-2.94	159.42
					(0.002)	(0.002)					(105.72)	(190.57)
Mother's age	-0.001*	-0.001	-0.001	-0.001	-0.001*	-0.001	64.53***	103.38***	61.08***	104.92***	64.24***	100.94***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.70)	(18.75)	(14.69)	(18.81)	(14.76)	(19.13)
Maternal grandfather's education	0.002*	0.003***	0.002*	0.003***	0.002*	0.003***	36.90	79.95**	37.62	81.10**	36.67	80.57**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(23.00)	(27.80)	(22.95)	(27.78)	(22.97)	(27.85)
Maternal grandmother's education	-0.002	-0.002*	-0.002	-0.002	-0.002	-0.003*	217.85***	231.58**	198.33***	208.54**	217.25***	226.00**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(50.24)	(70.72)	(49.45)	(68.64)	(50.20)	(71.06)
Child's age	-0.034***	-0.033***	-0.035***	-0.033***	-0.034***	-0.033***	454.75***	539.59***	467.25***	547.88***	455.72***	540.49***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(32.07)	(34.04)	(32.19)	(34.37)	(32.02)	(34.14)
Siblings	-0.007*	-0.015***	-0.007*	-0.014***	-0.007*	-0.015***	-426.33***	-523.55***	-453.16***	-570.37***	-429.71***	-531.76***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(57.06)	(74.07)	(55.28)	(75.14)	(57.10)	(73.85)
Proportion of girls in household	-0.000***	0.001***	-0.000***	0.001***	-0.000***	0.001***	-1.86	5.08	-1.85	5.45	-1.79	4.98
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(3.02)	(3.55)	(3.00)	(3.54)	(3.03)	(3.57)
Father's education	0.012***	0.011***	0.011***	0.011***	0.012***	0.011***	139.65***	220.79***	148.87***	225.93***	140.41***	217.14***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.30)	(22.52)	(20.03)	(22.51)	(20.39)	(21.87)
Paternal grandfather's education	0.002*	0.001	0.002*	0.001	0.002*	0.001	63.16*	169.23***	59.43*	164.81***	63.28*	169.30***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(28.53)	(36.88)	(28.19)	(36.41)	(28.40)	(36.86)
Paternal grandmother's education	-0.004***	-0.003*	-0.004**	-0.002	-0.004***	-0.003*	171.72**	-17.82	157.28*	-30.50	170.54**	-29.72
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(64.25)	(84.31)	(63.97)	(84.76)	(64.24)	(81.28)
Marital relations	0.017**	0.002	0.017**	0.002	0.017**	0.003	-44.68	223.02	-70.77	220.38	-40.21	236.58
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(130.64)	(159.06)	(129.66)	(158.30)	(130.84)	(158.68)
Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.010	-0.009	-0.010	-0.009	-0.009	3.37	1,396.21*	-5.31	1,423.07*	0.47	1,431.63**
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(589.12)	(555.27)	(585.00)	(555.28)	(590.74)	(548.41)
OBC	-0.037**	-0.008	-0.038**	-0.009	-0.037**	-0.007	-385.65	157.50	-378.83	190.72	-383.81	190.20
	(0.012)	(0.010)	(0.012)	(0.010)	(0.012)	(0.010)	(554.09)	(512.04)	(550.42)	(513.99)	(555.03)	(510.76)

Scheduled Caste	-0.048***	-0.042***	-0.048***	-0.042***	-0.048***	-0.041***	-1,027.96	-507.50	-1,071.81	-492.39	-1,029.53	-464.15
	(0.013)	(0.012)	(0.013)	(0.011)	(0.013)	(0.012)	(561.35)	(524.07)	(557.64)	(524.99)	(562.98)	(522.87)
Scheduled Tribe	-0.045**	-0.033*	-0.043**	-0.032*	-0.045**	-0.034*	-109.59	725.47	-225.98	685.31	-138.14	676.23
	(0.016)	(0.015)	(0.016)	(0.015)	(0.017)	(0.015)	(573.41)	(572.69)	(571.04)	(572.20)	(576.55)	(570.92)
Others	-0.007	-0.045	-0.008	-0.045	-0.007	-0.044	1,839.39	1,203.76	1,884.66	1,248.42	1,829.32	1,279.90
	(0.035)	(0.031)	(0.035)	(0.031)	(0.035)	(0.031)	(1,473.05)	(1,117.95)	(1,485.47)	(1,124.33)	(1,475.53)	(1,105.80)
Religion (*omitted category: Hindu*)												
Muslim	-0.070***	-0.103***	-0.070***	-0.104***	-0.070***	-0.103***	-540.64*	-723.11*	-494.33*	-673.09	-538.03*	-737.30*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(219.55)	(357.66)	(216.34)	(359.66)	(220.37)	(342.92)
Sikh, Jain, Christian & Others	0.001	-0.023	0.001	-0.023	0.001	-0.024	578.61	108.68	578.72	120.01	577.57	76.52
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(403.36)	(515.63)	(403.21)	(516.27)	(402.46)	(516.97)
Urban residence	0.015*	-0.008	0.015*	-0.008	0.015*	-0.009	1,115.28***	1,369.86***	1,129.80***	1,385.15***	1,109.59***	1,343.15***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(205.24)	(240.38)	(205.92)	(238.68)	(204.85)	(241.11)
Government Aid	0.009***	0.006***	0.009***	0.006***	0.009***	0.006***	-2.38	59.07	-2.36	57.62	-2.25	58.46
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(25.21)	(31.11)	(25.33)	(31.04)	(25.22)	(30.61)
Constant	1.151***	1.152***	1.130***	1.129***	1.153***	1.152***	-522.94	-3,978.83**	815.71	-2,946.10*	-554.05	-3,945.58**
	(0.032)	(0.028)	(0.034)	(0.029)	(0.032)	(0.028)	(1,002.40)	(1,244.38)	(1,024.08)	(1,230.69)	(1,005.92)	(1,239.83)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.237	0.221	0.237	0.220						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 38: GEM as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
Variables	Girls Model 1	Boys Model 2	Girls Model 3	Boys Model 4	Girls Model 5	Boys Model 6	Girls Model 7	Boys Model 8	Girls Model 9	Boys Model 10	Girls Model 11	Boys Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.069***	0.053***	0.069***	0.053***	0.069***	0.053***	-152.22	-285.21	-111.23	-270.31	-151.78	-284.71
	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.008)	(193.31)	(203.35)	(197.79)	(203.52)	(193.61)	(203.31)
Upper Primary	0.067***	0.051***	0.066***	0.051***	0.067***	0.052***	133.35	-37.35	61.78	-100.98	122.00	-55.95
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(232.52)	(289.84)	(222.29)	(273.09)	(233.09)	(289.39)
Secondary & above	0.057***	0.035***	0.058***	0.035***	0.058***	0.036***	2,226.98***	1,873.51***	2,215.63***	1,856.77***	2,189.28***	1,837.23***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(287.01)	(345.37)	(282.19)	(345.12)	(290.42)	(346.72)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.025*	-0.048***	-0.026*	-0.048***	-0.026*	-0.049***	66.25	-133.79	101.03	-97.33	78.79	-79.17
	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(194.56)	(195.91)	(194.82)	(195.79)	(189.35)	(187.96)
Other	-0.010	-0.043***	-0.011	-0.043***	-0.010	-0.043***	90.06	117.88	102.02	110.99	111.04	135.65
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(316.04)	(412.70)	(318.59)	(413.28)	(309.55)	(411.06)
Gender Empowerment Measure (GEM)	0.057**	0.056**	0.057*	0.052*	0.056**	0.054*	1,965.81*	1,571.47	1,548.03	1,265.36	2,039.82*	1,656.15
	(0.021)	(0.021)	(0.022)	(0.022)	(0.021)	(0.022)	(791.51)	(1,082.70)	(802.35)	(1,111.59)	(798.07)	(1,088.26)
Primary#Gender Empowerment			0.005	0.002					359.47*	213.96		
			(0.008)	(0.008)					(174.43)	(199.46)		
Upper Primary#Gender Empowerment			0.003	0.007					817.34***	539.14		
			(0.009)	(0.008)					(231.82)	(289.37)		
Secondary & above#Gender Empowerment			-0.005	0.002					437.44	347.91		
			(0.007)	(0.007)					(251.59)	(286.75)		
Agriculture#Gender Empowerment					0.010	0.013					-320.79	-534.85**
					(0.011)	(0.011)					(163.78)	(182.78)
Other#Gender Empowerment					0.011	0.013					-536.93	-695.45

					(0.011)	(0.012)					(383.58)	(438.92)
Mother's age	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	65.13***	103.49***	63.30***	102.65***	64.75***	103.65***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.70)	(18.74)	(14.70)	(18.72)	(14.71)	(18.76)
Maternal grandfather's education	0.002*	0.003***	0.002*	0.003***	0.002*	0.003***	35.94	80.42**	39.38	82.53**	36.77	80.53**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(22.94)	(27.81)	(23.13)	(27.98)	(22.90)	(27.79)
Maternal grandmother's education	-0.002	-0.002*	-0.002	-0.002*	-0.002	-0.002*	218.91***	233.61***	219.03***	234.30***	219.01***	233.68***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(50.14)	(70.55)	(50.07)	(70.54)	(50.03)	(70.50)
Child's age	-0.034***	-0.033***	-0.034***	-0.033***	-0.034***	-0.033***	453.94***	539.04***	456.23***	540.26***	454.84***	541.04***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(32.04)	(34.06)	(32.03)	(34.26)	(32.10)	(34.07)
Siblings	-0.007*	-0.015***	-0.007*	-0.015***	-0.007*	-0.015***	-432.34***	-523.99***	-433.94***	-526.37***	-434.58***	-528.19***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(56.66)	(73.89)	(56.59)	(73.96)	(56.57)	(73.95)
Proportion of girls in household	-0.000***	0.001***	-0.000***	0.001***	-0.000***	0.001***	-1.88	4.97	-2.02	5.21	-2.00	4.90
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(3.02)	(3.54)	(3.03)	(3.54)	(3.02)	(3.54)
Father's education	0.012***	0.011***	0.012***	0.011***	0.012***	0.011***	138.24***	219.79***	141.48***	222.17***	139.27***	220.85***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.27)	(22.42)	(20.24)	(22.55)	(20.21)	(22.45)
Paternal grandfather's education	0.002*	0.001	0.002*	0.001	0.002*	0.001	63.41*	168.69***	64.76*	169.55***	63.80*	170.97***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(28.53)	(36.91)	(28.48)	(36.93)	(28.45)	(36.90)
Paternal grandmother's education	-0.004**	-0.002	-0.004**	-0.002	-0.004**	-0.002	176.98**	-14.78	177.83**	-16.25	176.74**	-18.55
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(64.20)	(84.31)	(64.12)	(84.39)	(64.06)	(84.31)
Marital relations	0.017**	0.002	0.017**	0.002	0.017**	0.002	-30.51	226.85	-14.93	236.31	-32.53	239.86
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(130.79)	(159.04)	(131.21)	(159.59)	(130.67)	(159.10)
Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.010	-0.010	-0.010	-0.009	-0.009	10.30	1,393.60*	0.19	1,372.45*	-18.47	1,351.10*
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(589.30)	(555.56)	(588.84)	(555.97)	(589.68)	(556.75)
OBC	-0.038**	-0.008	-0.038**	-0.009	-0.037**	-0.008	-384.17	148.85	-397.24	139.76	-399.23	118.08
	(0.012)	(0.010)	(0.012)	(0.010)	(0.012)	(0.010)	(554.19)	(512.28)	(554.43)	(511.05)	(554.38)	(512.28)
Scheduled Caste	-0.048***	-0.042***	-0.048***	-0.042***	-0.047***	-0.041***	-1,006.80	-504.80	-1,009.67	-502.69	-1,033.79	-550.21
	(0.013)	(0.012)	(0.013)	(0.012)	(0.013)	(0.012)	(561.59)	(524.14)	(561.22)	(523.45)	(562.05)	(526.93)
Scheduled Tribe	-0.045**	-0.034*	-0.045**	-0.034*	-0.044**	-0.032*	-106.47	709.29	-115.61	699.18	-155.81	635.68
	(0.016)	(0.015)	(0.016)	(0.015)	(0.016)	(0.015)	(572.79)	(571.59)	(572.97)	(570.17)	(574.48)	(574.01)
Others	-0.008	-0.046	-0.008	-0.046	-0.007	-0.044	1,819.71	1,202.98	1,758.08	1,188.63	1,784.03	1,134.59
	(0.035)	(0.031)	(0.035)	(0.031)	(0.035)	(0.031)	(1,475.42)	(1,118.89)	(1,479.38)	(1,116.06)	(1,475.28)	(1,119.80)
Religion (*omitted category: Hindu*)												
Muslim	-0.069***	-0.103***	-0.069***	-0.103***	-0.069***	-0.103***	-530.54*	-716.79*	-553.54*	-733.85*	-531.23*	-698.76*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(219.47)	(357.52)	(218.45)	(356.04)	(219.28)	(356.00)
Sikh, Jain, Christian & Others	0.000	-0.024	0.001	-0.023	0.000	-0.024	520.40	77.11	491.92	71.38	510.26	76.62
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(399.13)	(510.68)	(399.18)	(510.73)	(399.54)	(510.88)
Urban residence	0.015*	-0.008	0.015*	-0.008	0.015*	-0.008	1,119.40***	1,382.70***	1,154.20***	1,400.68***	1,117.72***	1,382.78***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(205.20)	(241.22)	(204.51)	(239.74)	(206.11)	(241.61)
Consumption per capita	0.002***	0.002**	0.002***	0.002**	0.002***	0.002**	250.18***	294.97***	247.91***	293.94***	249.55***	294.00***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(27.53)	(34.56)	(27.28)	(34.37)	(27.44)	(34.53)
Government Aid	0.009***	0.006***	0.009***	0.006***	0.009***	0.006***	-1.14	59.45	-0.10	59.85	-0.43	59.93
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(25.27)	(31.08)	(25.18)	(31.01)	(25.26)	(31.02)
Constant	1.281***	1.277***	1.279***	1.274***	1.279***	1.277***	3,888.51	-418.01	3,461.97	-697.12	3,957.70	-347.30
	(0.058)	(0.057)	(0.058)	(0.057)	(0.058)	(0.057)	(2,077.57)	(2,797.15)	(2,082.71)	(2,818.23)	(2,090.91)	(2,805.09)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.220	0.237	0.220	0.237	0.220						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*

Table 39: GDI as a moderator in the relationship between mothers' education and employment and investment in children's education

	DV: Enrollment LPM Models						DV: Expenditures Tobit Models					
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Mother's Education (*omitted category: Illiterate*)												
Primary	0.068***	0.052***	0.066***	0.053***	0.068***	0.052***	-185.26	-284.25	-72.10	-218.37	-181.81	-281.02
	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.008)	(194.20)	(201.85)	(197.74)	(203.30)	(194.77)	(201.67)
Upper Primary	0.067***	0.051***	0.064***	0.049***	0.067***	0.051***	124.78	-44.51	99.42	-57.90	122.58	-49.00
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(232.69)	(289.94)	(220.04)	(281.13)	(232.40)	(290.46)
Secondary & above	0.057***	0.035***	0.063***	0.036***	0.057***	0.036***	2,217.41***	1,877.25***	2,209.34***	1,792.39***	2,208.28***	1,865.70***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(287.29)	(345.71)	(292.35)	(352.63)	(287.33)	(347.39)
Mother's Employment (*omitted category: Unemployed*)												
Agriculture	-0.026*	-0.049***	-0.026*	-0.049***	-0.025*	-0.049***	41.65	-173.51	38.07	-151.63	53.06	-172.94
	(0.011)	(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(194.94)	(195.76)	(194.41)	(196.82)	(207.19)	(198.45)
Other	-0.011	-0.043***	-0.011	-0.044***	-0.011	-0.042***	70.39	96.71	64.26	94.71	67.95	94.90
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(316.90)	(412.18)	(316.64)	(412.76)	(316.94)	(418.73)
Gender Development Index (GDI)	-0.007	0.002	0.009	-0.008	-0.006	0.002	-1,001.48	-3,074.57*	-1,658.68	-3,411.46**	-995.47	-3,072.43*
	(0.027)	(0.023)	(0.028)	(0.024)	(0.027)	(0.023)	(866.90)	(1,257.55)	(872.07)	(1,247.51)	(866.20)	(1,259.89)
Primary#Gender Development			-0.004	0.011					432.24*	-5.92		
			(0.009)	(0.008)					(192.60)	(205.51)		
Upper Primary#Gender Development			-0.005	0.019*					932.50***	444.14		
			(0.009)	(0.009)					(224.13)	(251.37)		
Secondary & above#Gender Development			-0.027***	0.010					692.92**	596.11*		
			(0.007)	(0.007)					(234.66)	(301.10)		
Agriculture#Gender Development					0.011	0.004					-46.16	-133.31
					(0.011)	(0.010)					(196.38)	(195.56)
Other#Gender Development					0.008	0.018					-314.73	-261.96
					(0.012)	(0.012)					(310.85)	(432.25)
Mother's age	-0.001*	-0.001	-0.001	-0.001	-0.001	-0.001	65.51***	104.96***	62.33***	103.21***	65.30***	104.93***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(14.73)	(18.80)	(14.79)	(18.84)	(14.73)	(18.81)
Maternal grandfather's education	0.002*	0.003***	0.002*	0.003***	0.002*	0.003***	37.33	79.22**	43.89	81.83**	37.66	79.46**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(23.01)	(27.80)	(23.00)	(28.03)	(23.00)	(27.81)
Maternal grandmother's education	-0.002	-0.002*	-0.002	-0.002*	-0.002	-0.002*	218.91***	230.52**	217.26***	230.68**	218.61***	230.53**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(50.25)	(70.64)	(50.16)	(70.54)	(50.22)	(70.63)
Child's age	-0.034***	-0.033***	-0.035***	-0.033***	-0.034***	-0.033***	454.00***	537.22***	456.71***	539.91***	454.43***	537.94***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(31.98)	(34.01)	(32.22)	(34.33)	(32.06)	(33.98)
Siblings	-0.007*	-0.015***	-0.007*	-0.015***	-0.007*	-0.015***	-427.12***	-525.26***	-423.10***	-524.62***	-427.07***	-525.75***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(57.07)	(73.93)	(56.77)	(73.97)	(56.98)	(73.87)
Proportion of girls in household	-0.000***	0.001***	-0.000***	0.001***	-0.000***	0.001***	-1.82	5.13	-1.98	5.48	-1.85	5.12
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(3.02)	(3.55)	(3.03)	(3.54)	(3.02)	(3.55)
Father's education	0.012***	0.011***	0.012***	0.011***	0.012***	0.011***	139.76***	221.66***	142.75***	223.23***	140.58***	222.25***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(20.29)	(22.51)	(20.28)	(22.61)	(20.26)	(22.51)
Paternal grandfather's education	0.002*	0.001	0.002	0.001	0.002*	0.001	62.96*	169.08***	66.34*	170.57***	63.29*	169.49***

	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(28.54)	(36.85)	(28.53)	(36.84)	(28.52)	(36.92)
Paternal grandmother's education	-0.004***	-0.003*	-0.004**	-0.003*	-0.004**	-0.003*	172.53**	-15.45	167.34**	-20.77	172.32**	-15.33
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(64.26)	(84.12)	(64.08)	(84.30)	(64.24)	(83.91)
Marital relations	0.017**	0.002	0.017**	0.002	0.017**	0.002	-57.79	203.54	-56.84	202.45	-62.60	202.91
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(130.93)	(159.32)	(130.57)	(159.34)	(131.04)	(159.96)
Caste (*omitted category: Brahmin*)												
Forward/General (except Brahmin)	-0.009	-0.010	-0.008	-0.011	-0.009	-0.009	11.50	1,401.68*	-14.66	1,368.32*	3.64	1,392.16*
	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(589.26)	(556.92)	(589.17)	(557.43)	(591.25)	(556.34)
OBC	-0.037**	-0.008	-0.036**	-0.009	-0.037**	-0.008	-380.00	152.03	-412.52	114.69	-380.38	144.80
	(0.012)	(0.010)	(0.012)	(0.010)	(0.012)	(0.010)	(554.22)	(512.98)	(555.22)	(512.36)	(554.79)	(512.72)
Scheduled Caste	-0.048***	-0.042***	-0.047***	-0.042***	-0.048***	-0.041***	-1,031.35	-535.93	-1,047.27	-566.21	-1,039.08	-549.59
	(0.013)	(0.012)	(0.013)	(0.012)	(0.013)	(0.012)	(561.53)	(523.41)	(561.45)	(523.13)	(563.41)	(523.97)
Scheduled Tribe	-0.045**	-0.033*	-0.044**	-0.034*	-0.044**	-0.033*	-79.70	803.64	-83.55	779.01	-95.62	784.21
	(0.016)	(0.015)	(0.016)	(0.015)	(0.016)	(0.015)	(573.70)	(577.82)	(572.40)	(576.99)	(576.64)	(579.19)
Others	-0.007	-0.045	-0.006	-0.046	-0.007	-0.044	1,812.94	1,147.69	1,737.63	1,102.70	1,809.52	1,131.90
	(0.035)	(0.031)	(0.035)	(0.031)	(0.035)	(0.031)	(1,474.98)	(1,116.66)	(1,476.18)	(1,115.11)	(1,475.12)	(1,118.48)
Religion (*omitted category: Hindu*)												
Muslim	-0.070***	-0.103***	-0.070***	-0.103***	-0.070***	-0.102***	-544.62*	-735.03*	-543.15*	-734.76*	-550.39*	-735.28*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(219.56)	(357.31)	(218.78)	(358.49)	(219.97)	(359.28)
Sikh, Jain, Christian & Others	0.001	-0.023	0.002	-0.023	0.001	-0.023	592.50	112.70	584.26	125.25	603.32	118.73
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(405.48)	(515.88)	(406.24)	(515.56)	(403.41)	(516.34)
Urban residence	0.015*	-0.008	0.014	-0.008	0.015*	-0.009	1,113.58***	1,369.40***	1,156.75***	1,394.74***	1,119.14***	1,371.09***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(205.38)	(240.32)	(205.57)	(238.48)	(205.72)	(240.83)
Consumption per capita	0.002***	0.002**	0.002***	0.002**	0.002***	0.002**	251.97***	299.43***	249.10***	297.59***	252.28***	299.49***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(27.75)	(34.73)	(27.56)	(34.55)	(27.73)	(34.70)
Government Aid	0.009***	0.006***	0.009***	0.006***	0.009***	0.006***	-2.09	59.38	-1.72	59.74	-1.78	59.46
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(25.20)	(31.02)	(25.19)	(30.90)	(25.20)	(31.04)
Constant	1.150***	1.152***	1.149***	1.153***	1.150***	1.153***	-814.27	-4,824.59***	-834.96	-4,785.56***	-812.03	-4,826.35***
	(0.033)	(0.029)	(0.033)	(0.029)	(0.033)	(0.029)	(1,042.83)	(1,330.23)	(1,044.77)	(1,330.48)	(1,042.52)	(1,328.34)
Observations	13,659	15,380	13,659	15,380	13,659	15,380	11,446	12,940	11,446	12,940	11,446	12,940
R-squared	0.237	0.219	0.237	0.220	0.237	0.220						

*Note: Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05, all models contain dummy variables for all states in India*