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Migration, Decision-making and Consciousness

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Abstract

This thesis analyses the effect of migration of men on women and children left behind in rural households in Pakistan. Part one analyses the impact on left-behind women's participation in household decisions and number of hours of work. In part two, the effect on children's work, children's education expenditures and on gender differentials in expenditures are analysed. In the last part, it is tested if participation of women in household decisions and women's consciousness of gender equality, reduce gender differentials in households' education expenditures. Analysis is based on longitudinal data of rural households in Pakistan (Pakistan Rural Household Panel Survey, IFPRI & IDS, 2012; 2014). Additional data from a sub-sample of the panel collected by the author in the year 2017 has been appended to the panel. Results of the analyses suggest that men's migration and remittances affect women's participation in household decisions differently in extended family and nuclear family households. Women are more likely to participate in household's expenditure decisions if they receive remittances. However, left-behind wives' participation in households expenditure decisions increases due to remittances only in nuclear households. For agricultural production decisions, left-behind wives in nuclear family households are more likely, while those in extended family households are less likely to participate if they do not receive remittances. Migration of men reduces women's time spent in households' own enterprise-related and domestic work. Remittances lower hours spent by recipient women in paid and domestic work. However, left-behind wives in extended family households who do not receive remittances, spend more hours in domestic work. Migrant households do not have significantly higher expenditures on children's education than non-migrant households. However, remittances increase households' education expenditures. Independent of remittances, migrant households have higher share of education expenditures spent on education of girls. Girls are also more likely to be sent to school and receive higher education expenditures in migrant households. The analysis also suggests that households where women participate in decisions regarding children's education have higher shares of expenditures spent on education of girls in the secondary school age group. Households where women participate in education decisions and exhibit consciousness towards gender equality in education, girl children are more likely to attend school. The results also suggest that households where women participate in decisions spend more on the education of girl children.

Zusammenfassung

Diese Arbeit analysiert die Auswirkungen der Migration von Männern auf Frauen und Kinder, die in ländlichen Haushalten in Pakistan zurückgelassen werden. Im ersten Teil werden die Auswirkungen auf die Beteiligung zurückgelassener Frauen an Haushaltsentscheidungen und deren Arbeit untersucht. Im zweiten Teil werden die Auswirkungen auf die Arbeit der Kinder, die Bildungsausgaben für Kindern und auf die geschlechtsspezifischen Unterschiede bei den Ausgaben analysiert. Im letzten Teil wird geprüft, ob die Beteiligung von Frauen an Haushaltsentscheidungen und das Bewusstsein der Frauen für die Gleichstellung der Geschlechter die geschlechtsspezifischen Unterschiede bei den Bildungsausgaben der Haushalte verringern. Die Analyse basiert auf Längsschnittdaten ländlicher Haushalte in Pakistan (Pakistan Rural Household Panel Survey, IFPRI & IDS, 2012; 2014). Zusätzliche Daten aus einer Teilstichprobe des Panels, die der Autor im Jahr 2017 erhoben hat, wurden dem Panel beigefügt. Die Ergebnisse der Analysen deuten darauf hin, dass die Migration und Überweisungen von Männern die Beteiligung von Frauen an Haushaltsentscheidungen in Großfamilien- und Kernfamilienhaushalten unterschiedlich beeinflussen. Frauen sind eher an den Ausgabenentscheidungen der Haushalte beteiligt, wenn sie Rücküberweisungen erhalten. Jedoch nimmt die Beteiligung der zurückgelassenen Ehefrauen an den Ausgabenentscheidungen der Haushalte aufgrund von Rücküberweisungen nur in Kernfamilienhaushalten zu. Bei Entscheidungen über die landwirtschaftliche Produktion sind zurückbleibende Ehefrauen, wenn sie keine Rücküberweisungen erhalten, in Kernfamilienhaushalten wahrscheinlicher an Ausgabenentscheidungen beteiligt, als diese Frauen in Großfamilienhaushalten. Die Migration von Männern verringert die Zeit, die Frauen in Haushalten mit eigener Unternehmens- und Hausarbeit verbringen. Rücküberweisungen verringern die Stunden, die die Empfängerfrauen mit bezahlter Arbeit und Hausarbeit verbringen. Zurückgebliebene Ehefrauen in Großfamilienhaushalten, die keine Rücküberweisungen erhalten, verbringen jedoch mehr Stunden mit Hausarbeit. Migrantenhaushalte haben keine wesentlich höheren Ausgaben für die Ausbildung von Kindern als Nicht-Migrantenhaushalte. Allerdings erhöhen Rücküberweisungen die Bildungsausgaben der Haushalte. Unabhängig von Rücküberweisungen haben Migrantenhaushalte einen höheren Anteil an den Bildungsausgaben, die für die Bildung von Mädchen aufgewendet werden. Mädchen aus Migrantenhaushalten werden mit einer höheren Wahrscheinlichkeit zur Schule geschickt und erhalten höhere Bildungsausgaben. Die Analyse deutet auch darauf hin, dass Haushalte, in denen Frauen an

Entscheidungen über die Bildung von Kindern beteiligt sind, einen höheren Anteil an den Ausgaben für die Bildung von Mädchen im Sekundarschulalter haben. Haushalte, in denen Frauen an Bildungsentscheidungen beteiligt sind und ein Bewusstsein für die Gleichberechtigung der Geschlechter in der Bildung zeigen, haben eine höhere Wahrscheinlichkeit, dass Mädchen die Schule besuchen. Die Ergebnisse deuten auch darauf hin, dass Haushalte, in denen Frauen an Entscheidungen beteiligt sind, mehr für die Bildung von Mädchen ausgeben.

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1 Introduction

1.1 Country Context

Inequality between men and women in Pakistan is manifest in the country's development and social indicators. Pakistan ranked 130 out of 159 on the United Nation's Gender Inequality Index (GNI) in 2016. In the year 2017, the country's GNI rank was 133, the lowest rank in 2017 was 159. The Global Gender Gap Index placed the country at 143rd place out of 144 countries in 2016, and in 2018 the country was placed at the 148th place in 149 countries (UNDP, 2016; WEF, 2016; WEF, 2018).

Table 1-1 provides national level social indicators disaggregated by sex¹. These statistics provide a snapshot of the differences in the social progress of men and women. These summary indicators are from Pakistan Social and Living Standards Measurement Survey (PSLM, 2014-15) and Pakistan Labour Force Survey (LFS, 2017-18). The PSLM and LFS are publicly available data of the Government of Pakistan. The indicators from the PSLM and LFS are compared with the estimates of these indicators from the latest publicly available round (round 3, year 2014) of the Pakistan Rural Household Panel Survey (PRHPS, IFPRI & IDS, 2013-14). The analysis conducted in this thesis is based on this dataset².

Foremost, Table 1-1 shows the skewed sex ratio of the country, there are more men than women in Pakistan. 50.8 percent of the population surveyed for the Labour Force Survey was male, and 49.2 percent were female³. This sex ratio is corroborated by the Population Census of Pakistan. According to the Population Census of Pakistan 2017, the sex ratio of the population was 105.07 males for 100 females. The sex ratio of the country may be attributable to gender inequality in the country of which son preference is a characteristic feature. Son preference contributes to neglect of health of girl children. For example, girls have been observed to have lower rates of immunization than boys (Masud & Farooq, 2012). This may lead to higher mortality of girl children.

¹ PSLM is collected from 80,000 households across the country. It provides indicators of socioeconomic characteristics of households at the district levels. A district is the third-tier administrative unit in Pakistan after the provinces. Both PSLM and LFS are conducted by the Pakistan Bureau of Statistics (PBS), Statistics Division, Government of Pakistan. The definitions of the indicators are copied verbatim from the source documents.

² Details of the PRHPS (IFPRI & IDS, 2012:2014) are provided later in this chapter.

³ The census of Pakistan reports that there are around 10,000 transgender individuals in the country. The PSLM and the LFS do not report sexes other than males and females.

Table 1-1: Pakistan's Social Indicators by Sex

	PSLM (2014-15)				PRHPS (2013-14)	
	Overall		Rural		Male	Female
	Male	Female	Male	Female		
Population Distribution (LFS, 2017-18)	50.8	49.2	50.4	49.61	50.6	49.3
Adult Literacy Rate	70	49	63	38	56.2	32.6
Net Enrolment Rate (Primary, age 6-10)	72	62	69	56	53.8	49.4
Net Enrolment Rate (Middle, age 11-13)	39	34	36	27	29	22
	Labour Force Survey (2017-18)					
Adult Literacy Rate	72.5	51.8	66.3	40.4	-	-
Education (<10 years of School) *	42.9	30.5	44.7	28.4		
Education (>10 years of School)	21	14.8	16.5	8.8		
Tertiary Education Rate	6.8	5.0	3.6	2.2	2	1.4
Labour Force Participation (refined)	68	20.1	68	25.6	65	14.5
Labour Force Participation (augmented)	51.6	34.7	57.3	45.6	-	-

Sources: Pakistan Social and Living Standards Measurement Survey (PSLM), 2014-15. Pakistan Bureau of Statistics, Statistics Division, Government of Pakistan. Labour Force Survey, (LFS), 2017-18. Pakistan Bureau of Statistics, Statistics Division, Government of Pakistan.

* The percentage of population aged 10 and above who attended school but completed less than 10 years of education. The category is the sum of population proportions in three categories. These categories are 1. Kindergarten (KG) but below primary (<5 years of school) 2. Primary but below middle (<8 years of school) and 3. Middle but below Matric (<10 years of school).

Definitions from the PSLM:

Net Enrolment Rate (NER) at Primary Level: Primary NER is the number of children aged 6 to 10 years attending primary level (classes 1-5) divided by the number of children aged 6 to 10 years.

Net Enrolment Rate (NER) at Middle Level: Middle NER is the number of children aged 11 - 13 years attending middle level (classes 6 - 8) divided by number of children aged 11 - 13 years.

Literacy rates: Population aged 10 years and older that is literate expressed as a percentage of the population aged 10 years and older where literacy is defined as the ability to read a newspaper and to write a simple letter.

Definitions from LFS:

Refined Activity Rate: Refined activity rate is the currently active population expressed as a percentage of the population 10 years and above.

Augmented Activity: Augmented activity rate is based on probing questions from the persons not included in the conventional measure of labour force, to net-in marginal economic activities viz subsistence agriculture, own construction of one's dwelling etc. Conventionally, persons 10+ aged reporting housekeeping and other related activities are considered out of labour force. However, from the perspective of time use, they are identified as employed if they have spent time on a specific set of marginal economic activities mentioned afore.

Tertiary Education: Percentage of population aged 10 and above who have completed graduate or above level of education.

Definitions for PRHPS:

Literacy is defined as ability to read, write and basic numeracy

NER at primary level is calculated as the percentage of children aged (6-10) enrolled in school of the total children aged (6-10).

NER at Middle level calculated as the percentage of children aged (11-13) enrolled in school and attending grades 4 or above of the total children aged (11-13).

Statistics from the PRHPS are author's own calculations.

There is insufficient evidence of infanticide. However, media reports suggest that practice is not absent and female infanticide is more common than male infanticide. Son-preference in other countries in South Asia has given rise to sex-selective abortions. In Pakistan, reliable data on sex-

selective abortions is difficult to obtain. Abortion laws of the country are vague and general perception regarding abortion is that it is legal only in cases where a pregnant woman's life is in danger. Second, access to foetal sex-determination is low, particularly in the rural areas. Hence, abortions have been reported to be common but sex-selective abortions have not been observed to be pervasive in the country. Hence the skewed sex ratio could be due to the general neglect of health of girls and women in the country.

Table 1-1 also shows the Net Enrolment rates (NER) for boys and girls at primary and middle school levels, adult literacy rates, rates of tertiary education completion and labour force participation of men and women. These indicators show that boys and girls have different access to schooling and that men and women have different access to labour markets. Women's literacy rates are abysmally low, depending on the different data source, the overall literacy rates of women lie between 49-52 percent and a mere 38-40 percent in the rural areas. Although universal literacy for men has also not been achieved, rate of literacy among men is higher as compared to women, 70-72.5 percent overall and 63-66 percent in the rural areas. The enrolment rates of boys and girls suggest that literacy will not improve substantially in the near future. The net enrolment rate for girls, that is, the proportion of girl children aged 6-10 who are enrolled in school of the total number of girl children aged 6-10 is 62 percent overall and 56 percent in the rural areas. Disparities exist between the enrolment rates for boys and for girls. The NER at primary level for boys is 72 percent overall in the country and 69 percent in the rural areas. Similarly, the rates of enrolment at the middle level for girls, that is, proportion of girl children aged 11-13 who are enrolled in school, out of the total number of girl children aged 11-13 is 34 percent overall and 29 percent in the rural areas. While the NER at middle level for boys overall in the country is 39 percent and 36 percent in the rural areas. The enrolment rates for boys and girls at the middle level are lower than the enrolment rates at the primary level. That points to high rates of school dropouts; children who are enrolled in primary school drop out before middle school. The gaps between the enrolment rates of boys and girls remain at the primary and the middle levels and this gap is wider for the rural areas, as shown in Table 1-1.

The rate of completion of tertiary education is extremely low for women. Tertiary education refers to completion of 14 year of schooling. In Pakistan, secondary school is 10 years of schooling, referred to as Matriculation (Matric/Secondary School Certificate). Higher

Secondary School is another 2 years of schooling, referred to as Intermediate (Inter/ Higher Secondary School Certificate) level. Tertiary education is the bachelor's level, that is, two years of college after the Higher Secondary School Certificate⁴. Hence, anyone who has successfully completed 14 years of education is considered as having tertiary education. Only 2.2 percent of women in the rural areas have completed some tertiary level of education according to the Labour Force Survey of 2017-18.

The Labour Force Participation rates of women in Pakistan are also low. One reason behind the low levels of women's participation in the labour force may be gender division of labour. According to the division of labour based on gender, men are expected to work outside the home and women are responsible for housework and care of children and the elderly. The overall labour force participation rate for women 20.1 percent. The participation of women in the labour force is higher in the rural areas (25.6 percent) due to a number of women who work in agriculture sector as wage/paid labourers. Augmented Labour Force Participation rates are also shown in Table 1-1. The augmented labour force participation rate is calculated after including the participation of individuals in work on own farm or subsistence activities. The augmented labour force participation rate of women in the rural areas is considerably higher than the refined labour force participation rate, 45.6 percent compared to 25.6 percent. This higher rate of augmented labour force participation suggests that women participate in work but are more likely to engage in activities that are not remunerated. The gap between these two measures of women's participation in the labour force is indicative of the overall low status of women. It shows that women in the rural areas spend time in activities that are not remunerated.

The corresponding values of the indicators estimated from the PRHPS (round 3, year 2014) are also provided in Table 1-1. According to the PRHPS, 56 percent of men and 32 percent of women above the age of 10 are literate in the sampled rural households. The NER for girls at the primary and middle levels is 49 percent and 22 percent, respectively. Although, there are differences in the values estimated from the PRHPS and the data from the PSLM and LFS, the overall picture to emerge is the same. Women's literacy is low⁵, enrolment rates for boys and girls differ for both primary and middle level and rate of tertiary education and labour force participation

⁴ This system is being replaced by 4 years of college to keep up with the international norms of college education. Colloquially a 4-year college degree is referred to as B.A honours or B.Sc. Honours. However, universal replacement of the 2-year bachelor program has not yet taken place.

⁵ In the PRHPS estimates of literacy rates, literacy is defined as the ability to read and write in any language and the ability to perform simple numeracy.

for women are low. The differences in the estimated values from the official data may be due to two reasons. First, the definition of rural areas used by the Pakistan Bureau of Statistics and the one used by the PRHPS may be different. Second, for the PRHPS some parts of the country were excluded from the sampling universe due to adverse security situation. Nazli and Haider (2012) report that the PRHPS is over-sampled for the province of Sindh and under-sampled for the province of Khyber Pakhtunkhwa. As the estimates presented in Table 1-1 are not adjusted for sampling weights, the estimates are different from those in the government data.

The condition of women in Pakistan can also be judged from pervasive violence against women. This violence occurs within households as well as in the public spaces. Table 1-2 shows prevalence of domestic violence against women and girls. These rates are reported from the Pakistan Demographic and Health Survey (DHS, 2017-18). Comparable estimates from the Pakistan Rural Household Panel Survey (IFPRI & IDS, 2013, round 2, year 2013) are also presented in the same table (Table 1-2).

Table 1-2: Domestic Violence against Women

	DHS (2017-18)			PRHPS ¹ (2012-13)
	Urban	Rural	Total	
Domestic Violence ²				
Physical	24.2	29.6	27.6	19.6 (3255)
Sexual	5.5	5.8	5.7	16.0 ³ (2301)

1. The module reporting women’s experience of domestic physical and sexual violence committed against them by their husbands is available only for round 2 (year 2012-13) of the PRHPS. The number of observations from which the percentages are calculated are shown in parentheses.

2. Percentage of women who have experienced any physical or sexual violence (committed by a husband or anyone else) since age 15.

3. The estimate is based on the responses of married women to the question, “Has you husband ever forced you to perform sexual acts when you did not want to”.

Estimates of prevalence of domestic violence from the Demographic and Health Survey (DHS, 2017-18) suggest that around 30 percent of women respondents from the rural areas had experienced violence at home. Despite underreporting of domestic violence in surveys, these prevalence rates are high. The percentage of women who reported experiencing physical violence at home in the PRHPS is lower than those who have reported experiencing violence in the DHS. The possible reason behind these different estimates is that the DHS was conducted all over the

country including the province of Baluchistan and the Federally Administered Tribal Areas (FATA). These regions have the highest rates of domestic violence against women according to the DHS. Baluchistan and FATA were excluded from the sampling universe of the PRHPS due to the adverse security situation in the areas. However, a significant proportion of women experience violence in the rural areas of the country according to both sources. It has been observed in the DHS (2017-18) women with low levels of education and low incomes are more likely to experience violence at home.

The above statistics do not provide an exhaustive view of the status of women and girls in the country. The statistics are not meant to be exhaustive; these statistics are presented here to indicate the low status of women and girls in Pakistan. This observation will be taken for granted throughout this thesis, that girls and women in Pakistan have lower status than men and boys. Girls and women are discriminated against within households and in the public sphere. It can be said that gender disparities are deep and wide (MHRC, 2016). It is, however, pertinent to add that women in Pakistan are not a homogenous category. There exist large differences between the conditions of women in various parts of the country. This diversity is explored in some detail in sections below.

It is intuitive that women's low rates of education lead to their low rates of participation in the labour force that mean lower incomes. Low income levels lead to women's higher dependence on men for their subsistence that makes women vulnerable to violence, abuse and exploitation. However, the question why these discrepancies arose in the first place has been explored by social scientists. Historical contingencies that have led to these discrepancies between the status of men and women specifically in Pakistan have been explored. Among these contingencies are the creation of Pakistan as an Islamic state, anti-women laws in the country and the influence of religion and culture on the society (Kandiyoti, 1991a). A brief overview of this historical and cultural context is provided in the next section.

1.2 Historical Background⁶

Pakistan came into being in August 1947 after the end of British rule of India. At the end of the British rule, India was divided into a Muslim majority state of Pakistan and the Hindu majority, albeit secular, state of India. The British had taken over India from the Mughals. Mughals were Muslims who had ruled various parts of India for several centuries. Jalal (1991) contends that under the Mughal rule, men's control over their families, particularly on the lives of women in their family was a way of preserving Muslim identity, norms, and values. The need to preserve this identity arose out of the necessity to blunt the Mughal empire's Muslim character in public for political expediency. Since the areas that the Mughal emperors ruled were heterogeneous in terms of peoples' religions and belief systems, Mughal emperors did not want to antagonize allies from within their empire by implementing Islamic codes of conduct and laws on entire populations. However, fear of the loss of Muslim values, Islamic religious practices and Muslim identity led to emphasis on adherence to these values within homes and families (Kandiyoti, 1991a). As women were responsible for the sustenance of these values through transferring to the next generations, women were controlled and were expected to uphold these values more firmly than men. Overthrow of the Mughal empire, by the British, increased the fear of loss of Muslim identity. This anxiety, entrenched further, the need to assert it within homes and families. Furthermore, Muslims saw their status being relegated from rulers to being ruled by a foreign power and adherence to Islamic practice and preservation of own norms was among the ways Muslims symbolically resisted colonial rule (Jalal, 1991). Attempts to regain influence under the colonial rule also included educational reforms and literary movements. These reforms and movements included carving out appropriate "roles" of Muslim men and women and popularized Muslim women's status as symbolic of Islamic civilization (Devji, 1991). Control over private lives and over women were ideals formed by these movements (Gilmartin, 1991). A category Muslims in Colonial India also used the debate on women's education and their role within families to assume the position of representatives of Muslims in India (Gilmartin, 1998).

At the time of India's independence from British rule and partition of India into two states, largescale violence erupted between the Muslims and Hindus. At the time, large number of women

⁶ The section presents politico-historical reasons specific to Pakistan that are theorized as having led to inferior status and men's control over women in Pakistan. This context can be read with the general theories of gender inequality including that of Boserup (1970), empirically tested by Alesina et al (2013) and Mies (1988). The origin of gender inequality remains a contested subject of study.

from Muslim as well as Hindu communities were subject to sexual violence and rape. Sexual violence against women of one community was perpetuated by members of the other community to inflict humiliation on the victim's community due to the symbolic status of women as the reserve of identity, norms and honour of their community (Jayawardena & de Alwis, 1996). Sexual violence against women was, on one hand triggered by this idea that viewed women as bearers of honour, identity, and norms of community and on the other hand, this violence entrenched the idea further. Protection of community identity, norms and honour became synonymous with protecting women against their "defilement" through rape by the members of the other community. Therefore, Muslim men felt obligated to "protect" Muslim women from the members of the other community. This protection also entailed strict imposition of norms of modesty and *purdah* on women⁷. Symbolically, *purdah*, that means seclusion, to veil or to cover, is presumed to protect women from sexual violence.

However, status of women in Pakistan in the contemporary time is not a linear projection from the time of the inception of the country. Jalal (1991) contends that after independence, power to rule Pakistan fell into the hands of a certain segment⁸ that did not want to devolve this power. Among the ways that this segment justified their dominance was the need to protect Pakistan from foreign aggression. This rhetoric was framed as the need for protection of religion and religious identity from foreign aggression and popularized as the defence of the of the state's ideological character, that is, Islamic character. Given that the violence at the time of independence of the country was along religious lines, there was fear among Muslims that Islam was under threat from non-Muslims. This narrative of defence of Islam, of Muslims and their religious identity, culture and norms permeated into questions on the status of women (Alavi, 1988). This narrative was used to justify subservient status of women to men. Since Pakistan, in this narrative, was a state that came into being to protect Muslims, to protect Islam, to uphold Muslim values, religious practices and religious identity and women were the symbolic reserve of Muslim identity and culture, their purity had to be preserved. The preservation of the purity of the Muslim woman meant that it be protected from western or foreign influences (Kandiyoti, 1991b). Any improvement in the status

⁷ The concept of *purdah*, however, predates partition violence. That women should dress with modesty and appropriately cover themselves is part of Islamic beliefs.

⁸ Political scientists contend that this segment largely consisted of the military and civilian bureaucracy, owners of large land holdings and industrialists. Over years, the composition of what can be termed as the elite ruling segment has changed considerably. See Akhtar, A. S. (2018). *The Politics of Common Sense: State, Society and Culture in Pakistan*. Cambridge University Press.

of women in the country came to be seen as a threat to the religious character of the state (Jafar, 2005)⁹.

Low rates of women's participation in the labour force and low rates of education are also partly due to cultural norms that are enmeshed with the symbolic status of women. These cultural norms have contributed to low rates of women's educational attainment and labour force participation (Papanek, 1971; Mirza 1999). Women's participation in the labour force has remained low historically. According to Census of Pakistan (1961), of the total population of 115 million, 600,000 women were engaged in non-agricultural employment in 1961 (quoted in Papanek, 1971). This pattern continued from the 1960s to the 1990s (Mirza, 1999). *Purdah* remains an aspect of these norms that affects women's education and participation in the labour force. The norms of *purdah* exist throughout the country but are enforced in different degrees. *Purdah* norms dictate women to stay within the homes. It limits the intermingling of women with men outside their families and kin. *Purdah* is also entwined with the sexual division of labour. Women are expected to be stay confined within homes due to *purdah* and are simultaneously expected to be primarily responsible for domestic work. *Purdah* norms are not applicable to men and hence men are expected to work outside the home and participate in public life.

Cultural norms have also been translated into formal laws. Several laws have been introduced in the country that limit women's participation in public life (Korson & Maskiell, 1985). For example, the Hudood laws and the laws of Evidence. The law of evidence considered the witness of women as half of that of a man. Parts of the Hudood laws related to rape and adultery. The Hudood Laws made rape practically unreportable for women making public spaces unsafe and dangerous for women. As per the Hudood Law, rape of a woman was only considered rape if the crime was witnessed by four adult men of good character. If a woman filed a rape charge without presenting four adult male witnesses to the crime, a rape charge was considered as admission of sexual intercourse by the woman that remains a crime in the country¹⁰. This admission/confession for sexual intercourse made the woman liable to punishment. The laws of evidence and Hudood laws are not the only laws in the country that discriminate women. According to the laws of inheritance of the country, female heirs of deceased receive half of the

⁹ It should be mentioned here that women's relationship with the state, state power and changes in this relationship have not been adequately analysed in literature. Akhtar, A. S (2019). *The Overdeveloped Alavian Legacy* in McCartney, M & Zaidi, S. A (2019) eds. *New Perspectives on Pakistan's Political Economy*. Cambridge University Press.

¹⁰ Sexual intercourse outside of marriage.

value of share received by the male heirs. That is, between two siblings of the opposite sex, the girl inherits 1/3rd of her parents' inheritance and the boy inherits 2/3^{rds}. The law therefore lowers women's access to productive resources such as land and to other assets. However, even though the law entitles female heirs to some part of inheritance, it remains a norm for women to not receive any inheritance. Women give up their rights in favour of their brothers and other male relatives. The Law of Qisas give families of murder victims the right to forgive the murder. Honour killings is the term used to refer to murder of women by members of their own family in the event of transgressing of moral boundaries by women. If a woman is killed by her own family members in the name of honour, her family has the right to forgive her murderers (her own family members). This law allows families to get away with honour killings. The law also entrenches the idea of women as repositories of their family's honour. Many other laws remain in place that discriminate against women.

In addition to laws, governments have also issued codes of public conduct that regulate women's lives more strictly than those of men. The codes of conduct issued under the military regime (1977-1988) required women to cover their heads, dress with modesty and cover themselves with shawls at workplace. Unmarried women were barred from serving in the foreign services. Women sports teams were discouraged from participating in international events and women in sports were generally discouraged. The military regime of the 1977-1988 was especially detrimental to the overall status of women in the country. The laws and edicts passed by the regime served to transform the general perception regarding women. The general perception relegated women confined within homes and imposed codes of moral conduct on women (Jafar, 2005). The laws promulgated under the military regime were not overturned after the end of the regime. They continued to affect the perception of women in the country long after the end of the regime.

1.3 Diversity within monotony¹¹

The overall lopsided gender context of the country notwithstanding, the context is neither homogenous nor static. Women and girls have pushed back at the state and continue to make space for themselves within the context. The country has witnessed movements for women's rights. The women's movement was particularly strong during the time period of the military regime of 1977-

¹¹ The phrase is loosely borrowed from the title of Naila Kabeer's paper, "Gender equality, economic growth, and women's agency: the "endless variety" and "monotonous similarity" of patriarchal constraints."

1984 when the State posed the greatest threat to the status of women¹². The country has also witnessed small scale/localized movements of women. Women in Pakistan have not just fought for equal rights for men and women but have also participated in the movements for democracy, fair employment, and land rights. There are also differences between women within the country. Pakistani women are visible in science and in the academia all around the world. Pakistan has had a woman Prime Minister and a woman speaker of the Parliament. Women have also occupied important positions in cabinets of various governments such as the minister of foreign affairs. Within the bureaucracy, at one time, the position of the Secretary of Economic Affairs of Pakistan was held by a woman¹³.

However, juxtaposing the country's social indicators shown in Table 1-1 and Table 1-2 with the visibility of women in the government, in academia and sciences reveals disparities among the conditions of women in the country. Women in Pakistan are different from each other. Women in the urban areas and in the big cities have access to education. Women in the urban areas and in big cities participate in the labour force. Women belonging to the different ethnicities and those residing in the different provinces face different cultural norms. Socio-economic class of households from which women belong affects their status within and outside their homes. All of this is to say that women of Pakistan is not a homogenous category, various categories of women exist. However, it also remains true that women from each of these categories are disadvantaged with respect to men in that same category.

Social scientists emphasize that the analytical category of women must be qualified. This thesis analyses the lives of women in the rural areas of three provinces in the country. As shown in Table 1-1 women (and girls) in the rural areas comprise 31.5 percent of the country's population. Among the rural women, only forty percent (aged 10 years and above) have had any formal education and 8.8 percent completed between 10 and 13 years of school. There also exist differences between women in the rural areas of the province of Punjab, Sindh, and Khyber Pakhtunkhwa. The differences between women in these provinces can be seen in the (Appendix Table A1). All figures Table A1 will not be repeated here but for a perspective it is worth noting that the literacy rate of women in rural Punjab is 48 percent while it is 25 percent in the province

¹² See Saigol, R. (2016). *Feminism and the Women's Movement in Pakistan Actors, Debates, and Strategies*. Islamabad: Friedrich Ebert Stiftung. <http://library.fes.de/pdf-files/bueros/pakistan/12453.pdf>. Accessed on 06 October 2019.

¹³ The position is regarded as one of the most powerful positions within the bureaucracy.

of Sindh. Similarly, labour force participation rate of women in rural Punjab is 34 percent while in the province of Khyber Pakhtunkhwa is 12 percent. This is despite the fact that Punjab is the most populated province of the country. As mentioned earlier, differences between men and women exist in all categories. So, women in rural Punjab have lower rates of literacy and schooling as compared to men in rural Punjab and women in rural Sindh have lower rates of literacy and education than men in rural Sindh. This data reinstates that women in Pakistan are not a homogenous category and yet in each of the different categories that women fall into, they remain disadvantaged vis a vis men in the same category.

Within the category of women in the rural areas of these three provinces, the focus of the first chapter is on the women who are left behind in the rural areas. Rural-urban migration and transnational migration affects the socio-economic conditions of the moving populations. However, this movement potentially affects the conditions of life of not just the movers but also of the non-movers. There is ample research on the effects of rural urban migration on the socio-economic conditions of the migrant households and its effects on migrants. However, the left-behind women have not been a focus. The first part of this thesis is an attempt to analyse the effect of migration of men on the women left behind in the rural areas. In order to assess the potential change engendered by migration on the future generations of women in the rural areas, the second part analyses the effect of migration on children, particularly girl children in the left-behind migrant households. In the last part of the thesis, the focus is broadened to all women and girls in the rural areas. In this part, women's consciousness of gender equality and their participation in household decisions on girls' education in the rural areas is analysed.

1.4 Women as a category of Analysis and Gender Theory¹⁴

The analysis throughout this thesis categorizes individuals into men/women and boys/girls. These categories are based on the sex of these individuals. Gender theory emphasizes differentiating between sex and gender. The term sex refers to the categorization of individuals based on anatomical and physiological characteristics of human bodies. Individuals are therefore categorized as male if they have the corresponding anatomical features of a male body and

¹⁴ There does not exist a universal acceptance of aspects of gender theory. The field and its ideas are debated and contested. See Butler, J. (2019) What threat? The campaign against gender ideology. *Glocalism, Journal of Culture, Politics and Innovation* (3) 3-12, DOI: 10.12893/gjcp.2019.3.1 for a discussion.

individuals are characterised as female if they have the anatomical features of a female body. In this analysis men/boys have male physiological characteristics and women/girls have female physiological characteristics.

The term gender refers to the meanings ascribed to the sexed bodies in a given society. That means, gender refers to peoples' understanding of the sexed body in the society. Gender subsumes roles, sanctions, rights, and responsibilities of the sexed bodies. For example, girls (female human body) do not play sports, girls cover their heads, girls take responsibility of domestic work. That a female human head should be covered is an example of the cultural ascription on a female human form. The difference that boys do not cover their heads (in certain societies) and girls do is gender. Similarly, A woman's role is to take care of domestic tasks in the household and a man is responsible for earning a living is also gender. Gender affects men/boys and women/girls throughout their lives. However, there is variation between the cultural meanings ascribed to sexed bodies across societies and these meanings have changed over years and continue to change. This non-naturalness of gender or its constructed character makes gender differences possible to change. It is emphasized that sex is natural or given while gender is ascribed and constructed. What follows is that gender differences that disadvantage women (or any particular sex) can be altered (since they are constructed).

However, it is also opined that categorizing individuals into two distinct sexes may itself be part of construction of gender (Michel Foucault quoted in Butler, 1999). Physiological characteristics of human bodies do not fall strictly under two categories, there is an array of the bodily forms that are put under each category. So, each of the two categories does not conform to one particular natural bodily form. That is, the category of men subsumes within it an array of physical forms that come to be categorized as men. In a way then, the two categories of sex are also culturally/socially/historically constructed and hence are not natural. Then, to use the phrase that gender is a construct while sex is natural or given may also be not be complete (Butler, 1986; 1988).

Sex may also be social/historical/cultural construct because the categorization of humans into two sexes, by emphasizing a difference that is (assumed to be natural) contributes to the reinforcement of gender difference. That is, if gender is based on natural difference, of sex, then gender differences can be considered as mutable to only a certain extent. Strictly within this

framework, an emphasis on the category of women runs the risk of reinforcing categories that form the basis of advantage of one type of human bodies on other types (Butler, 2006). In this thesis however, analysing categories, men/boys and women/girls is unavoidable. This is not to suggest that the use of these categories for the purpose of analysis does not require reflection¹⁵. These categories are used here because these are the only sex/gender categories that are recognized in the Pakistani context.

Additionally, in this context sex and gender are used interchangeably. The reason is that people categorized as male/boys/men at birth continue to live as men/boys throughout their lives. So, reflecting on gender differences is the same as reflecting on conditions of life faced by two sexes. The presence of transgender individuals makes it important to emphasize the difference between sex and gender (that is, it becomes important to clarify what is being talked about). Difference between the sexes would refer to differences between individuals born male and female, regardless of the gender they choose to live as. And differences between genders would refer to differences between men (cis and transmen) and women (cis and transwomen). There a small population of transgender people in Pakistan. The transgenders in most cases are born intersex. In some cases, individuals categorized as male at birth also choose to identify as transgender (According to the census of Pakistan 2017, there are 10,000 transgender individuals in the country out of the total population of 200 million). The transgender population has only recently started to be recognized officially. Transgender individuals can now obtain citizenship cards and government jobs. The transgender population lives at the margins of society in communities of their own. Parents of children born intersex usually give up their children to these communities where they are raised by older members of the transgender community. They earn their livelihood by dancing at occasions like weddings or engage in sex work. Hence, for the purpose of analysis the categories of women and men are used.

Moreover, the focus of this analysis is households organized around a heterosexual marriage. It is the focus of this analysis because a heterosexual marriage is the only acceptable form of familial organization in Pakistan. It is predominantly monogamous however, polygamy is legal. Cohabiting heterosexual couples without marriage is almost unheard of. Families consists

¹⁵ Butler (2006) hints at the position taken by gender and feminist theorists on the use of the category of women for theorizing and analysis. She points out that Gayatri Chakravorty Spivak and Julia Kristeva are of the opinion that the category of women may be strategically used to propagate women's concerns.

of two adults of different sex who are married and have children. Often, families continue to live with their adult children after the children are married. Girls and women move out of their parents' home after marriage and move in with their husband's family where they live with their husband's family including his parents, siblings and sometimes the families of his male siblings including his wife and children. These are called joint family/extended family households and they are common in both urban and rural areas. Consensual homosexual partnerships/relationships are a taboo. In certain parts of the country though pederasty is common and is tolerated. However, men who engage in pederasty maintain a heterosexual marriage and have children.

The discussion above is meant to lay the groundwork of the analysis in the rest of this thesis. To summarize, the analysis is focused on women in rural areas of Pakistan. Women in Pakistan have lower status than men, and women in the rural areas are worse off than women in the urban areas. There exist, however, differences between rural women in different parts of the country. Furthermore, the analysis is specific to a context where men and women exist as two sexes. Intimate relationships are based on marriage. Marriages are between people of opposite sexes.

1.5 Research Questions, Overview and Data

The thesis is divided into four parts. In addition to this introductory section, there are three empirical chapters and a concluding section¹⁶. Each chapter attempts to answer one or more research questions. In the first chapter, the following research questions are explored:

- Does migration of men from rural households increase women's role in household decisions concerning household expenditures and household agricultural production?
- Does migration of men from rural households increase women's work in domestic activity, paid activity and household enterprise-related activities?

In the second chapter, the following questions are explored:

- Does migration of men from rural households lead to increase in households' expenditure on children's education?

¹⁶ I refer to the empirical chapters as chapters.

- Does migration of men from rural households reduce gender differentials in households' expenditures on children's education?
- Does migration of men from rural households increase work of children in domestic activity, paid activity and household enterprise-related activities?

and in the third chapter, the following questions are explored:

- Does women's increased participation in household decisions and women's consciousness of gender equality lead to reduction of gender differentials in households' expenditures in children's education?

Each chapter is divided into multiple sections. The sections are organized as this: 1. Introduces the research problem and articulates the research question (s) 2. Reviews literature that has attempted to answer the same or similar question (s) and highlights the gaps that this research has attempted to fill 3. Summarizes relevant data 4. Proposes an estimation strategy (s) 5. Presents the results of empirical analysis and 5. Discusses the results. A short summary of the chapter is provided at the beginning of each chapter.

All analyses are based on longitudinal data of rural households in Pakistan. The dataset is the Pakistan Rural Household Panel Survey (IFPRI & IDS, 2012; 2014) gathered by the International Food Policy Research Institute (IFPRI). The panel consists of three rounds conducted in years 2012, 2013 and 2014. Additional data from a sub-sample of the panel was collected in the year 2017. This data has been appended to the panel. However, it makes the nature of the panel unbalanced due to the smaller number of households surveyed in the year 2017 (round 4).

The PRHPS contains data from 2090¹⁷ rural households from the provinces of Punjab, Sindh, and Khyber Pakhtunkhwa. The fourth province, province of Baluchistan, and some areas in the province of Khyber Pakhtunkhwa were not surveyed due to adverse security situation¹⁸. The sampling universe of the dataset also excludes areas with special administrative status¹⁹. The total number of rural households in Pakistan is 20 million according to the census of Pakistan 2017 (Fewer in year 2012, the year sampling for the survey was conducted). The PRHPS represents 15 million households due to the exclusion of the province of Baluchistan, 13 districts in the province

¹⁷ Number of sampled households and attrition is detailed below

¹⁸ Baluchistan has the smallest population among the four provinces.

¹⁹ These are the Federally Administered Tribal Areas (FATA) and these were not part of any province at the time of the sampling.

of Khyber Pakhtunkhwa²⁰ and of the Federally Administered Tribal Areas (FATA)²¹. This means that the dataset has a wide coverage even though it is not nationally representative. Detailed description of the data collection methodology can be found in Nazli & Haider (2012). Data collected in the year 2017 by the author was limited to the sample of households in the Khyber Pakhtunkhwa province and from one district of province of Punjab²². The data from year 2017 consists of 300 households, it will henceforth be called round 4. The province of Khyber Pakhtunkhwa was chosen for a few reasons. In the three provinces that were surveyed in the PRHPS, the province of Punjab and Khyber Pakhtunkhwa were more easily accessible than the province of Sindh. Province of Khyber Pakhtunkhwa was chosen because, the province has higher rates of migration of men. Secondly, women in the province face more restrictive cultural norms than women in the province of Punjab. Although the social indicators of women in rural areas of Sindh and Baluchistan are worse than those for women in Khyber Pakhtunkhwa, Khyber Pakhtunkhwa was surveyed due to its accessibility.

The dataset is thematically extensive. The data gathering instrument consisted of two questionnaires, one for female respondents and one for male respondents from each household. These questionnaires were filled out by enumerators after interviewing one adult man and one adult woman from each of the household. The respondents were the households' self-reported head of the household and the spouse of the head of the household. In majority of households, a man was reported as being the head, hence, the male questionnaire was filled after interviewing the head of the household and the female questionnaire was filled after interviewing his wife. For households that did not have an adult man (woman) available for interview, a part of the male (female) questionnaire was filled out after interviewing the woman (man) respondent, these parts are called supplementary questionnaire. Information on all members of the household regarding age, marital status, employment, education, migration status etc were collected. Additionally, certain modules of the female questionnaire, especially those related to women's participation in household decisions, include the responses of up to two other women in the household in addition

²⁰ There are 25 districts in the province of Khyber Pakhtunkhwa only 11 of these were included in the sampling universe. A district is an administrative unit lower than that of a province. Pakistan consisted of 114 districts in 2012 that increased to 122 in 2017. There is considerable variation in district populations, for example, population of district Hamai was 97,017 individuals according to the population census of the year 2017 while the population of Lahore district was 11,126,285 individuals (GOP, 2017).

²¹ For details on the sampling methodology and the sampling frame see <http://pssp.ifpri.info/files/2011/12/007-Pakistan-Rural-Household-Panel-Survey-2012-Round-1-Methodology-and-Community-Characteristics.pdf>

²² These districts are Districts Nowshera and Mansehra in Khyber Pakhtunkhwa province and District Attock in Punjab province.

to the main woman respondent. The variables used in the analyses are not consistently available for all rounds. Therefore, the number of rounds used for different analyses differ, these are detailed in the relevant sections.

As PRHPS is a longitudinal dataset, loss of household data due to attrition in between rounds has occurred. Attrition is primarily due to migration and households' refusal to participate in subsequent rounds of the survey. In the first round of the survey, total 2124 households were sampled for survey. In this round, complete data was collected from 2056 (96.8 percent) households. 34 households (1.6 percent) refused to provide data, 33 households (1.55 percent) provided partial data and in one household no adult respondent was available. In the second round, out of the 2090 households visited for the re-survey, 93 percent households provided complete data; 90 households (4.31) had moved or migrated, 41 households (2 percent) were either not found or respondent was not available, 14 households (0.7 percent) refused to provide any data and 8 households (0.4 percent) provided incomplete information. In the third round, out of the 2019 households visited, 1876 (93 percent) provided complete information; 64 households (3.2 percent) had moved or migrated, 29 households (1.4 percent) refused to provide information and another 50 households (2.5 percent) could not be found. In round 4, 315 households in three districts were revisited, data was collected from 292 households (93 percent); 14 (4.4 percent) households had moved or migrated, 5 households (1.6 percent) refused to provide any data.

Attrition may introduce selection in the dataset. In a sample being surveyed, units who refuse to participate or migrate in between rounds may have certain characteristics that differentiate them from the units that remain or continue to participate in the survey. These differences may be observed or unobserved. This selection of units can bias the estimated effects depending on the research questions. Therefore, an assessment of attrition is advised. It can be tested if units that do not participate in the survey due to any reason differ significantly from the units that choose to participate. However, such an assessment can only be made for observed characteristics of units. It is plausible that units that do not participate in the survey differ from the units that remain in the survey in terms of characteristics that are not observed.

The rates of attrition between rounds in the PRHPS are low. In developed country contexts, large longitudinal datasets with high rates of attrition have been shown to have no impact on estimated effects (Alderman et al, 1999). However, for attrition to not bias estimated effects, the

magnitude of these rates, matter less than its randomness. In order to assess if households lost to attrition differ significantly in terms of observables from households that remain in the sample, the mean values of their characteristics are compared. Appendix Table A2 shows the comparison of means for households that were surveyed in one round but were lost to attrition either due migration or refusal to participate in a subsequent round. First, it is compared if there is significantly more or less attrition of households from one province. Overall, 4.2 percent households had migrated between round 1 and 2, however these rates differ for the three provinces with higher percentage of households migrating in the provinces of Sindh and Khyber Pakhtunkhwa than in Punjab. These differences appear to be significant. One reason could be that the province of Sindh experienced floods that forced several households to migrate. While the rates of migration in Khyber Pakhtunkhwa have remained historically higher than those in Punjab because the province lies in area of lower agricultural productivity. The refusal rate in Sindh is also slightly higher than the rate in Punjab. Between round 2 and 3, the pattern remains the same, higher rates of household migration in Khyber Pakhtunkhwa and Sindh than those in Punjab, but the differences are not statistically significant.

Thereafter, the primary explanatory variables are compared. That is, if households that had a migrant member or a temporary migrant²³ in one round, were more or less likely than households that did not have a migrant member, to migrate *en masse* or refused to participate in the subsequent round than households that did not have a migrant member. Between rounds 1 and 2, of the households that did not have either a permanent or a temporary migrant, 4.3 percent had migrated and households that had a permanent migrant, the same percentage (4.3 percent) had migrated. A smaller percentage of households with a temporary migrant migrated between rounds 1 and 2 than the non-migrant households, 1.6 percent, however the differences are not statistically significant. As for refusals, a higher percentage of households that had a permanent migrant refused to participate in round 2 of the survey than the households that did not have a permanent or a temporary migrant (4.3 percent compared to 0.65 percent) but the difference is not statistically significant. None of the households that had a temporary migrant in round 1 refused to participate in round 2, that is, all households that had a temporary migrant in round 1 participated in round 2

²³ The definitions of permanent and temporary migrants are provided in the data section of empirical chapter 1 and chapter 2. Concisely, a household is considered as having a permanent migrant if a member had left the household for employment in between rounds and was away from the household at the time of the subsequent round. A household is said to have a temporary migrant if a member had moved for employment in between rounds but had come back to the household.

of the survey. Similarly, in between the subsequent rounds the migration rates of households with a permanent or a temporary migrant are not significantly different from the rates of migration of other households. There are differences, but in the absence of a pattern it can be said that these differences are by chance.

The socioeconomic status of the households that refused to participate in the survey or migrated in between rounds manifest in their income, income per person and wealth index is also compared with households that participated in the survey and chose to stay in the subsequent round. There appear to be no statistically significant differences between the income and income per person of these households for all 4 rounds. The average value of the wealth index however, appears to be smaller for households that migrated in between rounds 1 and 2 and between rounds 2 and 3. As the wealth index is based on the asset ownership of households including ownership of animals and household durables, households that plan to migrate may have sold their owned assets or may have accumulated fewer assets to ease the process of migration. It also appears that the number of household members, that is the household size, is smaller for households that had migrated in between rounds. This is again intuitive provided that it is relatively easier for smaller households to migrate together than it is for larger households.

The average expenditure of households on children's education and the share of households' education expenditure spent on the education of girls are dependent variables of the analyses in the following chapters. The average values of these variables are compared for households that had migrated or refused with the average values of these for households that remained in the survey. Households that had migrated in between rounds have slightly higher education expenditures on children's education than the average education expenditures of other households. It may be that households that wish to invest more in the education of their children migrate to urban areas to access better educational opportunities that are difficult to access in the rural areas. Similarly, the share of education expenditures spent on the education of girls are higher for households that had migrated in between rounds perhaps suggesting that households that wish to spend on the education of girl children are more likely to migrate from rural areas to the urban areas. Similarly, the percentage of households that had girls of the school going age who were not attending school at the time of the survey is lower for households that had migrated in between

rounds 1 and 2. However, no such difference is observed for households that migrated in between rounds 2 and 3 and those between 3 and 4.

As some of the analysis in the following chapters is at the individual level, it is worthwhile to observe attrition rate at the individual level. This individual attrition is both because the household had migrated or refused to participate in the survey and because individual members of household left the household for reasons ranging from employment, marriage, or others. Attrition rates of individual data because the households had migrated or refused are as follows. Between round 1 and 2, individuals who were no longer part of the survey because the household had migrated *en masse* were 3.1 percent of the data. Those whose households had refused participation in round 2, constituted 0.72 percent of the data and those who were not a part of the survey because the household was not found, or other reasons constituted 0.16 percent of the sample. Between Round 2 and round 3, 2.8 percent individuals were not part of round 3 because their households had migrated, 1.2 percent because their households refused to participate in round 3, and 0.03 percent because the household did not participate for other reasons. Between round 3 and 4, 4 percent individuals were lost from the data because their household had migrated, 2.1 percent because the household refused to participate and another 0.1 percent due to other reasons.

In between round 1 and 2, individuals who were no longer the part of the households that participated in the second round as they had left the household constituted 4.3 percent of the individuals in the dataset. Among them, 1.9 percent had established new households or moved to a new household, 0.05 percent had migrated for work, 1.2 percent had gotten married and 0.5 percent had left for other reasons (imprisonment, kidnapped, divorced or left due to safety concerns). Another 0.5 percent individuals had died. Between Round 2 and round 3, 5.3 percent individuals had moved individually, 2.8 percent had moved to a new household or established a new household, 1.1 percent had moved for work, 1.2 percent got married and moved from the household and 0.33 percent had left the household due to other reasons. Between round 3 and 4, 4 percent individuals were lost from the data because, 7 percent individuals have either moved to new household or established separate households, 3.1 percent individuals had migrated for work, 4.3 percent got married and moved from the household, 0.4 percent left the household due to other reasons. The individual attrition rates between these two rounds, round 3 and 4, are slightly higher

than those between the previous rounds. This may be because a longer duration passed between rounds 3 and 4 than had passed between the previous rounds.

In appendix Tables A3 and A4, individuals in households that had remained in the subsequent rounds of the survey but had left the household are compared in terms of the dependent variables of the analysis. So, the number of hours spent by women in various tasks are compared for women who had left the households with those who stayed in the household. Similarly, the number of hours worked by children who had left the households in between rounds and expenditures on their education are compared with the children who stayed in the household in between rounds. Appendix Table A3 shows these for children in between rounds 1 and 2, 0-4 shows it for children between 2 and 3 and 0-5 shows it for rounds 3 and 4.

There appear to be no statistically significant differences between the time spent by women in domestic tasks for women who stayed and those who left. This is true for both rounds 1 and 2 and rounds 2 and 3. There does appear to be a difference in the average time spent by women in domestic tasks with the time spent in these tasks by women who subsequently left the households in between rounds 3 and 4. For women who moved to new households or established own households this may be because the household they had previously belonged to were large extended family households and due to the division of domestic tasks among women in the same household, the time spent by one woman was less than the average time spent by women. For girls who left the household due to marriage, their domestic work hours are also less than the average work hours which could be because the predominant responsibility of household tasks falls on the wives and daughters in law of households. However it is also the case that teenage daughters in household are expected to help their mothers in household work and the overall time spent by girls of marriageable age, late teens to early twenties, in domestic tasks is considerable in which case that the time spent in domestic tasks by girls who left the household due to marriage is less than the average time spent by women is a conundrum. A conundrum that can be resolved by looking at the average domestic work hours of girl children who had left the household due to marriage. These are considerably higher than the average work hours of girl children who had stayed.

The average number of hours spent by women in paid work for women who participate in paid work are 19 hours. For women who had left the household in between rounds 1 and 2 due to

marriage, these hours are significantly lower (12 hours). This is not a pattern observed for women who had left households in between the subsequent 3 rounds.

The number of hours spent in own work by the women who had left households after marriage are lower than the average number of hours spent by women in own work. As in the case of number of hours spent in domestic work, if read with the time spent by girl children who had left in between rounds due to marriage that is higher than the average time spent by girl children who stayed within the household in between rounds, it can be inferred that the time spent in own work by girls of marriageable age may not be different for girls who stayed and girls who left the household due to marriage.

It can be said that attrition of households as well of individuals does not pose a serious risk of bias in the estimated effects for a number of reasons. First, the rates of attrition in between rounds are low and second, the dependent and explanatory variables do not appear to be systematically correlated with likelihood to drop out of the survey.

2 Migration of Men and Left Behind Women: Decision Making and Work

Summary: In this chapter, the effect of men's labour migration on decision-making role and work of women in left behind households in the rural areas is estimated. Changes in women's role in response to men's migration are gauged for two categories of household decisions; 1. decisions regarding household expenditures; both small and large and 2. decisions regarding households' agricultural activity. To assess the effect of men's migration on work of women in left-behind rural households, three categories of women's work are analyzed 1. women's self-reported time spent in domestic tasks, 2. women's self-reported time spent in household's business and agricultural activity and 3. women's self-reported time spent in paid work. All effects are estimated for all women in left-behind household and separately for left-behind wives of migrants. For left-behind wives, effects are disaggregated for wives living in extended family households and those living in nuclear households. Furthermore, the dataset allows separation of the effects of remittances from the effect of migration of men on the variables of interest and hence the two effects are separated. Fixed and random effects logistic regression is employed to estimate the effects on women's participation in household decisions. For the analysis of women's work, fixed effects regression analysis is used. Fixed effects allow to tackle endogeneity arising due to self-selection of migrants and migrant households. Results suggest that left-behind migrant wives are more likely to participate in some agricultural production decisions in nuclear family households. However, no significant effect on participation in these decisions is observed for left-behind wives in extended family households. Furthermore, results suggest that women's participation in expenditure decisions is influenced by women's receipt of remittances. Women who themselves receive remittances are more likely to participate in decisions regarding households' small and large expenditures. Similarly, results for impact on women's work suggest that women who receive remittances spend less time in paid and domestic work. While left-behind wives of migrants spend more hours in paid work. There is also some evidence that suggests that women in left-behind households spend fewer hours in households' own agricultural and non-agricultural enterprise work.

2.1 Introduction

Migration of members of household may bring about several changes in the left-behind household²⁴. Left-behind households are households from where one or more members migrate leaving others in the area of origin creating spatially divided families/households. In the left-behind household, foremost, labour of the migrant member is lost, this loss is compensated by members left behind. These members take up tasks previously undertaken by the migrant member. In the event of migration of a husband, the left-behind wife may take up tasks previously undertaken by the migrant in a two-adult nuclear family household²⁵. In an extended family household set-up, members other than the wife of the migrant may take up tasks previously undertaken by the migrant. An extended family (or a joint family) household consists of multiple nuclear families²⁶ living in the same house and sharing resources. These nuclear families may belong to the same or different generations.

Second, left-behind household may receive remittances from the migrant member. Changes in household's income due to remittances may affect household consumption, investment, production, and labour allocation. Receipt of remittances by the left-behind household and the direction of the change in household income due to remittances depends on several factors. These factors include migrant's success in finding employment in the destination area and the difference in the income earned by the migrant before and after migration. Moreover, changes in household income due to remittances is also dependent on the time passed since migration. In the time²⁷ following migration of a member, households may not receive any remittances. This may be because the migrant is unable to secure a job or is forced to use income from the new job for own settlement at the destination. Remittances may also be used (either by the migrant or by the receiving household) to pay off any debts incurred (by the migrant or the migrant household) to finance migration of the member. If the left-behind household receives remittances, household's

²⁴ Ye et al (2013) note that in migration research the term "left-behind" has been used to describe 1. Families and households who have a migrant member away from the household 2. Families and households in migrant sending communities who do not have a migrant away from the household and hence they are considered as being "left-behind" 3. Rural communities that have been "left behind" the development process. In this thesis, left behind refers to non-migrant members of households from where one or more members migrates leaving the other members in the place of origin.

²⁵ The term "nuclear family" refers to the societal unit consisting of two adults of the opposite sex, married to each other living together with their children.

²⁶ In this thesis, the term "household" refers to members of a nuclear family/or members of related nuclear families who live together and share/pool resources. A household with a single nuclear family is referred to as a "nuclear" family household. A household with multiple nuclear families is referred to as an extended or joint family household. Both types of households, nuclear family households and extended (joint) family households, exist in the rural areas.

²⁷ This may be a few months or even a year or longer.

consumption, investment, production, and labour allocation may be affected. In case of migration of a husband, the left-behind wife may be the recipient of remittances in a nuclear family household. In an extended family household, the left-behind migrant wife may not receive remittances from her husband; members other than the wife may be the recipients of remittances.

Third, household decision making process may change due to migration of a member. The absent migrant member may not be involved in household production, consumption and resource allocation decisions taken in the left-behind household (Clemens and Tiongson, 2017). In case of migration of a man from a nuclear family household, the left-behind wife may be solely responsible for taking household decisions. In an extended family household, the responsibility of taking household's consumption, production, and resource allocation decisions, may fall on members other than the left-behind wife of the migrant.

That means that migration of a member of the household may affect work burden and decision-making roles of left-behind members. This also means that migration of men from the household, may affect women's work burden and the women's decision-making roles in the left-behind household. In a nuclear family household, migration of a man (husband) can be expected to affect the work burden and decision-making role of the left-behind wife. While in an extended family household, migration of a man may affect the work burden and decision-making role of all women, including the migrant's wife, in the left behind household. This chapter assesses these effects. That is, it attempts to assess the effect of men's migration on women's work and women's role in household decisions in the left-behind household. Specifically, it assesses the effects of men's migration on the work and decision-making role of his left-behind wife. The effect is estimated for left-behind wives in nuclear family households and those in extended/joint family households.

These two aspects, work burden and decision-making, are focused because they reflect women's well-being as well as women's position in the household. Increased burden of work may decrease wellbeing especially in contexts where women are overburdened with unpaid domestic work. Women's role in household decisions is a loose indicator of their bargaining power (Agarwal, 1997). Greater decision-making power reflects improvement in women's position within the household. Women's decision-making role is also part of women's empowerment and is used in indicators of women's empowerment (Ibrahim and Alkire, 2007; Alkire et al, 2013).

Women's greater role in household decisions has also been observed to tilt household expenditure in favour of children's education and health (Duflo, 2003; Antman, 2010; Antman, 2011a; Clemens & Tiongson, 2017). These effects assume salience in contexts where women are disadvantaged compared to men. If women face high burden of work relative to men, any further increase in their work burden is unwelcome. Alternatively, if women are incapacitated from taking household decisions, then a change in their relative power in household decisions is welcome.

An analysis of the effect of migration on left-behind women is also worthwhile when migration patterns are gendered. Migration patterns may be called gendered when certain types of migration are undertaken by specific genders. For example, in the context of South Asia, migration for marriage is undertaken almost exclusively by women. Similarly, in the context of rural Pakistan, migration for employment is predominantly undertaken by men. Gendered migration points towards sexual/gender division of labour. If men migrate to work and earn a living and women stay behind to take care of domestic work, then such is the division of labour. In contexts where gender division of labour is strictly observed, men's and women's work may be differently valued. It is common that men's tasks are valued more than women's, and by extension men are valued more than women. If women are not valued, then the effect of migration on women (positive or negative) may be neglected in the households' decision to send their member away/or may not figure in the migrants' decision to migrate. Disregard for the effect of migration on women's lives due to the devaluation of women may lead households to misestimate the effects of migration for the household. In reality, left-behind women may be bearing the burden of migration of men, for example, by being overburdened by work. On the other hand, gendered migration may have the potential for changing gender relations. Women may be left with greater choice by the absence of men. These choices in turn could improve their own lives and the lives of future generations of women.

Migration of people within and outside national borders is common in Pakistan. Although, numbers of people in the region historically migrated due to economic and political shocks (Hasan, 2010; Hamid, 2010). People also migrate to access economic opportunities and to diversify economic risks (Todaro, 1969; Harris & Todaro, 1970; Stark, 1991; Arif & Irfan, 1997). In Pakistan, migration for employment is undertaken by men. It is common for men to migrate for employment leaving families behind in the rural areas (Mansuri, 2006a; Mansuri 2006b). This

pattern of migration also holds for migration of labour to the Gulf States²⁸ where laws of residential rights of migrants discourage migrants to be accompanied by family members (Gazdar, 2003; Wickramasekara, 2016). Gulf migration has been a significant part of men's migration from the rural areas of Pakistan since the 1970s. It is temporary and is predominantly undertaken by semi-skilled or low skilled workers (Arif & Irfan, 1997). Migration to the Gulf region comprised 96 percent of all international outmigration from Pakistan in 2013 (Wickramasekara, 2016). In Pakistan, it is uncommon for individual women to migrate for employment. Women migrate for marriage or with family (Hamid, 2010).

Research on the impact of migration from Pakistan has focused on its effect on labour markets and on governments' policy response. This research has explored income, consumption and asset accumulation of remittance receiving households, gendered impacts have not been studied in this body of research (Addleton; 1984; Adams, 1998). Studies also explored the effects of remittances on macroeconomic indicators of Pakistan economy (Burney, 1987). Later studies have estimated the impact of remittances on poverty and development (Ballard, 2005; Amjad, 2006; Amjad, 2010; Irfan, 2011; Javid, Arif, & Qayyum; 2012).

The impact of migration on women and girls in the Pakistan context has been analysed by Mansuri (2006a) and Mansuri (2006b). She analyses the impact of migration on health and education outcomes of male and female children in migrant households. Qualitative studies on the impact of migration on women left behind in the rural areas of Pakistan are more common. Lefebvre (1999) has observed the effect of migration of men on two villages in the Punjab province. The author has also detailed his observations on the impact of men's migration on the lives of women left behind in the villages. Siegmann (2010) has specifically explored the impact of male migration on left-behind women in the context of rural Pakistan. However, Siegmann focusses on an area of Khyber Pakhtunkhwa province; her observations may not be generalizable for other rural areas. Similarly, Lefebvre's work is based on observations from two villages in Punjab. Moreover, both works are qualitative and although provide brilliant insights into the lives of women left-behind their observations are geographically limited. Siegman (2010) and

²⁸ The Gulf States refer to the countries in the Cooperation Council of the Arab States in the Gulf (GCC) including Kingdom of Saudi Arabia, United Arab Emirates, Oman, Sultanate of Qatar, Kingdom of Bahrain and Kuwait.

Lefebvre's (1999) observations inform the analysis of this chapter and this chapter can be seen as providing of empirical support to these observations.

Existing empirical works on the effect of male migration on women's role in household decisions is scarce and inconclusive. These works are briefly reviewed in the next section. Empirical analysis of migration on the labour market participation/paid work of left-behind household members is more extensive. However, this work is deficient with respect to the effect of men's migration on domestic work of the left behind household members. As the burden of domestic work or the easing of domestic work affects women more than men, a gendered analysis of the effect of migration without the inclusion of domestic work is incomplete. Furthermore, there are no empirical studies that are based on longitudinal data that have assessed the impact of migration of men on women left behind in the rural areas of Pakistan. This chapter attempts to fill this gap.

The effect of men's migration on the decision-making role and work burden of women left behind in the rural areas of Pakistan is estimated. These effects are estimated on women's role in household decisions regarding the following:

1. Household expenditures, and
2. Households' agricultural activity

Household expenditure decisions are divided into two categories, a) decisions related to everyday expenditures of the household and b) decisions related to large expenditures of the household including purchase of large assets. Households agricultural activity decisions are divided into three categories, a) decisions related to production of crops on household's own farm primarily produced for household's own consumption, b) decisions related to production of crop on household's own farm primarily produced for sale in the market and c) decisions related to livestock raising/farming.

To estimate the effect of men's migration on women's work burden, women's self-reported time (measured as number of hours per week spent in that activity) spent in 1. Paid work. 2. Domestic work and 3. Household's own business and agricultural work are used.

In the next section, studies on the effects of migration on members of left behind households are briefly reviewed. These studies include qualitative studies that have focussed on the impact of male migration on left-behind women. Existing empirical studies on the impact of

male migration on household decision making are also reviewed. Furthermore, empirical works on the effects of migration on the labour force participation/paid work are also reviewed. However, from studies on the effects on labour force participation/paid work, results for left-behind women are highlighted.

2.2 Literature Review

2.2.1 Migration and Women's Decision Making

Qualitative studies have documented effects of migration of men on aspects of lives of women left behind. Engel (1986) and Brettell (1988) detail the changes that occurred in the lives of women due to largescale outmigration of men from the rural areas of Russia and Portugal in the late nineteenth century (Pedraza, 1991). Engel (1986) reports that in villages in Russia male migration gave women more freedom but entailed higher work burden. In addition to domestic work, left behind wives of migrants became responsible for households' agricultural work. Brettell (1988) focuses on households' living arrangements and observes that in rural areas of Portugal, migration of men gave rise to women headed households. Largescale migration altered marriage customs; among others it became common for women and their husbands to reside in the woman's parents' home after marriage.

Qualitative studies on contemporary migrations have observed that in the absence of men, left-behind women take the role of the head of the household, receive remittances and command influence on remittance income. However, the effect of male migration on women left behind is contingent on the social context, on the living arrangements of the left-behind household and the amount and frequency of the remittance receipts (Sadiqi & Ennaji, 2004; Ghosh, 2009; Siegman, 2010; Lopez-Ekra, Aghazarm, Kötter, & Mollard, 2011; McEvoy, Petrzalka, Radel, & Schmook, 2012; Rashid, 2013). There is also considerable variation in the effects due to the type of migration. Women in left-behind households of international migrants are more likely to receive higher amounts of remittances and report lower work burden. However, type of migration is endogenous. International migrants' households are more likely to be better off economically as international migration is costlier than domestic migration. The left behind women in these households have lower work burden as they are better off economically and can afford to hire domestic help and invest in domestic labour-saving technology (de Haas & van Rooij, 2010). For women left behind in the rural areas of Pakistan, Lefebvre (1999) and Siegmann (2010) have observed that women's role in household decisions, specifically those related to large expenditures or household's production and investment decisions does not change in extended family households.

A few empirical studies have estimated the effect of male migration on women's participation in household decisions (Hadi, 2001; Maharjan, Bauer & Knerr, 2012; Sinha, Jha & Negi, 2012). Hadi (2001) finds that migrant households have greater participation of women in household decisions. Maharjan et al (2012) also report that households with male migrant have higher participation of women in household decisions. Sinha et al (2012), on the other hand, find that migration of men from the household does not significantly affect the decision-making role of women who are left behind. Similarly, for China, households with male migrant do not have a significantly different role of women in household decisions (Mu & Van de Walle, 2011). Desai & Banerjee (2008) present evidence that women's role in household decisions in left-behind households is affected by the living arrangement of the household. Women in who head their own nuclear family in the left behind households are more likely to take decisions in the household on their own. These studies corroborate the observations of qualitative studies that women's participation in household decisions in response to migration of men depends on household residence (urban or rural), living arrangement of the left-behind household and remittances (Sinha, Jha and Negi, 2012; Maharjan, Bauer and Knerr, 2012). With the exception of Mu & Van de Walle (2011), these studies are based on cross sectional data and endogeneity of migration has not been tackled by the authors. There are no empirical studies on the effect of male migration on the decision-making role of left-behind women in rural areas of Pakistan known to the author.

Antman (2011a) provides indirect evidence of increased women's role in household decisions due to male outmigration. The paper shows that households where the head of the household has migrated to the US have significantly lower shares for boys in their total clothing expenditures and households where the male migrant has returned have significantly higher shares for boys' in their total clothing expenditures. These observed changes in expenditure patterns are attributed to decision-making role of women in the absence of the husband and takeover of decision-making by the husband upon his return. In an earlier paper, Antman (2010) estimated changes in decision making roles due to migration of a member of a household. She observed an increase in decision-making power of male household heads upon their return from migration experience. However, due to data limitations Antman (2010) has not estimated the effect of migration on decision making role of women left behind by the migration of men when the migrant was away.

Clemens and Tiongson (2017) have estimated the effect of migration on household decision-making roles of migrants. Their results show that this role is decreased, however, lower participation of the migrant in household decisions does not mean that left-behind women have higher participation. This is less obvious in extended family households.

2.2.2 Migration and Women's Work

The effect of migration on labour market and paid-work participation of members of left-behind household has received more attention in empirical research. Migration affects labour markets of sending regions as well as the behavior of members of migrant sending households. Areas of largescale outmigration of labour experience a decrease in labour force. This increases real wages in the sending areas and hence labour market responses of workers left behind in the area. Remittances also affect economic activity in the receiving areas. Remittances may be invested by households in productive activities, in turn, generating labour demand.

At the household level, household members, including left-behind women, may be forced to decrease their participation in paid work due to increase in domestic work or increase in unpaid work on household agriculture caused by the absence of the migrant member. Left behind members' participation in paid work may also be affected by changes in income of the household due to migration. If the migrant was an earning member prior to migration and is unable to secure employment after migration, then left-behind household members, including women, may be forced to enter the labour market or increase their hours of work following migration. In other cases, households may face financial constraints due to the cost of migration borne by the household thereby inducing members of the household to increase their labour market participation (Amuedo-Dorantes & Pozo; 2006). Conversely, once left-behind households start receiving remittances, they may reduce their labour supply in favour of more leisure (Acosta, 2007). For women in remittance recipient households, remittance income can ease domestic work burden if remittances are invested in technology that eases domestic work (Siegmann, 2010). This lowered domestic work may result in more time spent in paid work by women. Remittance receiving households may also invest remittance income in non-agricultural business or in own agriculture. In this case, household members may be observed to withdraw from the labour market or lower the hours of work in paid work to work in their own enterprise.

Since theoretically, the impact of migration and remittances on the labour market responses of left-behind members can be positive or negative. Empirical studies have attempted to estimate the effects of remittances, migration of members and both on labour market responses of left-behind members. The results of these empirical investigations vary according to the level of disaggregation of both the dependent variable and the explanatory variable and on the disaggregation of the unit of analysis.

Funkhouser (2006) uses longitudinal data from Nicaragua and estimates diff-in-diff estimates of the effect of emigration and remittance receipts on labour market participation of members in the left -behind household. Several categories of households are created in both the rounds to identify the effects precisely. For example, households with no migrants in 1998, with a migrant after 1998 but without remittances are compared with households with no migrants in 1998, with a migrant after 1998 and with remittances. His results suggest that migration has no effect on labour market participation of the left-behind members. Similarly, remittances also do not affect the labour market participation of left-behind members. The study has not separated the effects for left-behind men and women.

Kim (2007) has estimated the effect of remittances on labour supply of individuals in remittance recipient households in Jamaica. The study employs both cross sectional data and pseudo panel data. The results of the study, not controlled for endogeneity, suggest that left-behind members participate less in the labour market. However, the number of hours worked in the labour market are unaffected by remittances. The paper has not conducted separate analysis for women and men.

Acosta (2006), for left behind households in El Salvador, shows that remittances reduce women's labour supply and have no effect on the labor supply of men. The study tackles endogeneity by using Propensity Score Matching (PSM) and Instrumental Variables (IVs). Acosta (2007) also employs Instrumental Variables to estimate the impact on labour force participation as well as for the number of hours worked by left-behind women in migrant sending households. The study captures the effect of remittances separately from the effect of having an outmigrant. Furthermore, the study identifies households in rural and urban areas. The results suggest a decrease in the labour force participation of women in response to remittances. These effects are found to be stronger for women in rural households.

Amuedo-Dorantes & Pozo (2006) use instrumental variables to estimate the effect of remittances on the labour supply of members of remittance recipient households in Mexico. They find that remittances reduce women's labour supply. The paper has focused on the impact of remittances and not of men's absence.

Cox-Edwards and Rodriguez-Oreggia (2009) find no evidence of negative effects of remittances on the labour force participation of left-behind members of the family in Mexico. The study uses propensity score matching to tackle selection of migrant households. They have differentiated between persistent and unstable remittance patterns. They found that in urban areas women in remittance recipient households have higher rates of participation in the labour force.

Funkhouser (2006) and Kim (2007) have not separated the effects for men and women. Acosta (2007) and Amuedo-Dorantes & Pozo (2006) show results separately for women and men. The different effects of remittances on the labour supply of men and women suggest that women's work is affected differently by migration of men than that of left-behind men. However, none of these studies have estimated the effect of migration and remittances on women's domestic work.

Lokshin & Glinskaya (2009) assess the effect of male migration on the labour market responses of women in Nepal. The results suggest that migration of men leads to lowering women's participation in waged work. However, the study notes that these effects are dependent on household characteristics, notably on households' land ownership patterns.

Binzel & Assaad (2011) use cross sectional data of Egypt and instrumental variables to estimate the effect remittances and migration on work participation of left-behind women. Their analysis concludes that in the rural areas, women increase work participation in response to male migration, but this increase is in non-waged work. In the urban areas, women decrease participation in wage work. The study notes that changes in participation in work is due to migration and not due to remittances.

Mendola & Carletto (2012) assess the effect of male migration on the labour market response of men and women who are in the left behind households in Albania using cross sectional data. The study uses IVs to tackle endogeneity. Their results show that women's paid work decreases, and unpaid work increases in response to migration of men. Women in the left-behind households have lower participation in paid work while their nonpaid work increases.

Broadly, studies that have estimated the effect of remittances on women's participation in paid work generally find a negative association between women's participation in paid work and remittances. However, studies that disaggregate women's work and disaggregate the effects of remittances and migration provide a better picture. This picture is consistent with the view that women's work, domestic, unpaid, and work on household production activities increases due to migration. While women's participation in paid work/wage work reduces in response to migration.

Recently, Roth & Tiberti (2017) have used propensity score matching to estimate the effect of migration on hours worked in employment by left behind household members. Their results suggest that left behind household members reduce their participation in economic activity. However, they have not disaggregated these effects by sex.

Vadean, Randazzo, & Piracha (2017) study the effect of migration on labour force participation on members in the left behind household in Tajikistan. The study estimates the effect on labour force participation and participation in paid work by members in left-behind household of migrants. The study is restricted to the effect on the labour force participation of men. The study finds no evidence that migration of members and remittances lead to reduction of the number of hours of labour supplied by members in the left behind household.

These studies point to gendered effects of migration on the time spent by the remaining members in various tasks. None of these studies have estimated the impact on time spent in domestic work due to migration of a member. It is, however, implied that left behind women experience an increase in domestic work as they take up household tasks previously undertaken by the migrant (Binzel & Assaad, 2011; Mendola & Carletto, 2012; Wu & Ye, 2016). This increase in domestic work reduces time left for women for paid work and may be the reason behind women's observed withdrawal from paid work in response to their husbands' migration (Amuedo-Dorantes & Pozo, 2006; Lokshin & Glinskaya, 2009; Mendola & Carletto, 2012; Cabegin, 2013). There are, however, differences observed in the responses of rural and urban women even in their response to wage/paid work. Rural women increase work participation, mostly in non-waged work, while urban women decrease wage work (Acosta, 2007; Binzel & Assaad, 2011). In qualitative studies, women report an increase in domestic work due to the migration of men (Siegmann, 2010; de Haas & van Rooij, 2010; Rashid, 2013; Siriwardhana et al, 2015).

The study by Mu & Van de Walle (2011) is an exception. The study examines the effect of migration of men for employment on the time allocations and work participation of the women who are left behind in the rural areas. The study uses panel data for rural households in China. To tackle simultaneity, they use lagged values of explanatory variables for estimation. To tackle omitted variable bias, they exploit the panel nature of their dataset and estimate the relationships in first difference. They include individual fixed effects and cluster the standard errors at the village level. They observe increase in farm work by women but do not find evidence that women are in decision making roles. The study, however, has not included remittances received by women as possible mechanism for the observed changes.

This chapter adds to this literature by 1. Estimating the effect of migration using longitudinal data. Longitudinal data allows the comparison of households before and after migration thereby reducing endogeneity of migration and outcomes of interest (Adams, 2011; Antman, 2012). 2. Estimating the effect of migration and remittances both. 3. Estimating the effect of men's migration on women's domestic work; a category that has remained ignored in literature. 4. Using women's reported participation in household decisions to directly estimate the effect of male absence on this role 5. Estimating these relationships for rural households in Pakistan. 6. Disaggregating the effects of men's migration with respect to the living arrangement of the left behind household. That is, for nuclear and joint family households.

2.3 Data and Methods

All rounds of the PRHPS have information on migration of household members that had taken place in the year preceding the survey. Data on remittances received by the household is also available.

Table 2-1: Non-Migrant and Migrant (Left Behind) Households by Round

Round	1	2	3	4	Total
	Freq. (Percent [^])	Freq. (Percent)	Freq. (Percent)	Freq. (Percent)	Freq. (Percent)
<i>Non-Migrant Households</i>	2066 (98.9)	1918 (95.8)	1740 (92.8)	240 (81.4)	5964 (95.2)
<i>Migrant Households (Left-Behind Households)</i>	24 (1.1)	84 (4.2)	136 (7.2)	55 (18.6)	299 (4.7)
<i>Total</i>	2090	2002	1876	295	6263

Note: Only those households where a member of the household had migrated for employment and was away at the time of the survey are considered migrant (left-behind) households.
[^]Percentages in parentheses

Table 2-1 shows the number of households that had at least one member who had migrated from the household for *employment, during the year preceding the survey and was away at the time of the survey*. The number of left-behind households is lower than migrant households reported by other studies on rural areas in Pakistan. Mansuri (2006a) has used the Pakistan Rural Household Survey (PRHS) 2001-02 and reports that 24 percent of rural households were migrant households. However, Mansuri has considered households with a member having ever had migration experience as a migrant household including households with return migrants and households that have had temporary migration episodes of members. Furthermore, not all migrants in Mansuri's definition had had migrated for employment (She reports that about 80 percent of migrants had gone in search or for employment). In this chapter, households with migrants who had migrated in the year preceding the survey, had gone for employment and were away at the time of the survey are considered as left-behind households. This definition is used as the aim of the analysis is to assess the impact of the absence of one or more male member on the women left behind. Throughout this thesis, the term permanent migrants is used to refer to the category of migrants shown in Table 2-1. That means that this member had migrated sometime between two

rounds of the survey and had not returned²⁹. Later in the thesis, households with temporary migrants are also analysed.

In the data shown in Table 2-1, left-behind households in round 1 are fewer than in other rounds because people who had not lived in the household for at least three months in the year preceding the survey were not considered household members and hence even if they had migrated, they were not recorded as migrants. Also, in Table 2-1 there is a higher proportion of left-behind households in round 4 as compared to the other rounds. This is because round 4 was limited to two districts in Khyber Pakhtunkhwa province and one district in Punjab. Khyber Pakhtunkhwa consists of areas with low levels of agricultural productivity and therefore larger number of people from these areas migrate for work. The migration of low skilled labour from Pakistan to the Gulf is also larger from Khyber Pakhtunkhwa (Gazder, 2003; Hasan 2010).

Of the left-behind households shown in Table 2-1, ninety six percent had a male member who had migrated for work. Thirty five percent of these migrants were international migrants and thirty four percent (of all migrants) were in the Gulf States. That is, ninety eight percent of all international migrants had gone to the Gulf States. This is in line with the pattern of migration from Pakistan. In the year 2012 and 2013, 98.4 and 98.1 percent of all migration outflows from Pakistan was to the countries in the GCC (Wickramasekara, 2015). All of the international migrants in the data used here in this thesis were men.

As mentioned earlier, migration for employment is gendered in Pakistan. Migration of male members for employment can be attributed to gender division of labour in the rural areas of Pakistan. The gender division of labour prescribes that men earn to financially support their families. Men work outside their homes and engage in public life to perform this role. Women are responsible for domestic work. Waged work in rural areas is taken up mostly by women from poor households (Zia, 2018). However, the stringency of these patterns varies within the rural areas of the country; women in the Khyber Pakhtunkhwa province are different from women in the province of Punjab in terms of their participation in public life and waged work. However, as the data suggests more men migrate from the rural areas for employment than women. Women migrate

²⁹ For round 1 of the survey, household members were asked about migration of any members during the year prior to the survey. Moreover, the members were asked to state if the migration was intended to be of permanent or temporary nature. For round 1 therefore, household members who were reported to have permanently migrated are counted as permanent migrants.

for marriage or to join their family and if they migrate for employment, then they migrate with other family members (Hamid, 2010).

Table 2-2 shows that there are a few differences in the composition of left behind and non-migrant households. Left-behind households have fewer adult men and fewer boys under the age of 18. Although these differences are statistically significant, they are of little practical importance. The differences in male members could only be because migrant themselves are male. Fewer men and boys in left behind household points to the gendered pattern of migration for employment where it is more likely that men and boys migrate to seek employment. However, the difference in the number of adult women in left behind and non-migrant household may be more insightful. As pointed out earlier, migration of men from the rural areas is plausible if there are adult men to be left behind in the household (Mansuri, 2006a). However, the data in Table 2-2 shows, it may also be easier for men to migrate from rural households if the left-behind household is an extended family rural household. That means, older adult women, like the mother of the male migrant, stay behind in the migrant’s household while he is away (or it is easier for a man to migrate if the household has an older woman living in the household).

Table 2-2: Summary Statistics, Household Demography of Migrant and Non-Migrant household

Variable	Non-Migrant Households	Migrant Households
No of Obs	5963	299
Household Size	6.5 (3.0)	6.5 (3.2)
Men	1.8** (1.1)	1.6** (1.1)
Women	1.7*** (1.1)	2.1*** (1.2)
All Children	3.0 (2.2)	2.8 (2.3)
Girls	1.5 (1.4)	1.4 (1.5)
Boys	1.5** (1.4)	1.4** (1.4)
Standard Deviation in parentheses		
*** p<0.01, **p<0.05		
Men and Women refer to adult members (Age>18)		
Boys and girls refer to minor members (Age<18)		

The PRHPS is designed to capture the role of women in household decisions. The survey instrument of the PRHPS consisted of two questionnaires. The female questionnaire was filled after interviewing an adult female from each household (Primary female respondent of the household). The primary female respondent was in most cases the wife of the head of the household. If the wife of the head of the household was not available at the time of the survey, another adult female (daughter or daughter in law) was interviewed to fill the female questionnaire. The female questionnaire contains information (as provided by the primary female respondent) on all women and children present in the household including information on their age, education, employment etc. The primary female respondent was additionally interviewed for the decision-making module of the female questionnaire. In the decision-making module, the primary female respondent has reported her participation in household decisions. That is, she was not asked to inform on behalf of the other women in the household regarding their decision participation. To assess the participation of other women in the household in household decisions, two other women from the household were also selected for interview. These two other women were 1. The oldest woman in the household and the 2. Youngest woman over the age of 16. Therefore, women members of the surveyed household who have reported their participation (or lack of participation) in household decisions were, 1. The primary female respondent from each household. 2. The oldest woman in the household and 3. The youngest woman over the age of 16 in the household. As noted earlier, many households in rural Pakistan are extended/joint family households. It is possible to have more than one adult woman (or man) living in the same household³⁰. These extended family households consist of multiple nuclear families³¹ that live in the same house and share resources. These families may belong to the same or different generations. From each household in the sample therefore, at least one and at maximum 3 women have reported their participation in household decisions³². If a household did not have women in these categories, for example, the household was a nuclear family household with two adults of each sex, living with their children who were all under the age of 16, only one woman could be interviewed. In other cases, there could have been more women than the above-mentioned categories present in the household but only three

³⁰ This is in contrast with the concept of nuclear family household that consists of two adults of the opposite sexes living together with their minor children.

³¹ The definition of members of one household used in the PRHPS was that all members who have lived in the household for at least three months in a year and cooked and ate from the same kitchen. "Household members are those who have lived at least 3 months in the household over the past year, living and sharing meals often with the household", PRHPS 2012, roster.

³² Only for households that had no adult women available this module is not available.

were interviewed. The effect of migration of men on decision making role of all women respondents of the decision-making module of the questionnaire is analysed. That is, change in decision making role of between one and three women in each household. The number of women respondents of decision-making module of the questionnaire in the relevant categories of analysis are shown in Table 2-3.

Table 2-3: Women Respondents in Migrant (left behind) and Non-Migrant Households

	Round 2	Round 3	Round 4
	Obs (Percentage)	Obs (Percentage)	Obs (Percentage)
Women respondents in Migrant Households (left behind)	159 (4.9)	261 (8.3)	105 (21.1)
Respondent women in Joint Family Migrant Households (joint family left behind households)	105 (3.2)	168 (5.3)	79 (15.9)
Respondent women receiving remittances	54 (1.7)	254 (8.1)	24 (4.8)
Respondent women receiving remittances in Joint Family households	23 (0.7)	123 (3.91)	17 (3.42)
Respondent women who are migrant wives	23 (0.7)	45 (1.4)	18 (3.6)
Respondent women in Joint Family Households who are migrant wives	23 (0.7)	31 (1.0)	12 (2.4)
Total married respondents	2301 (70.7)	2202 (70.0)	342 (68.8)
Total number of respondents	3255	3144	497

Note: Round 1 does not have a women's role in decision making module. All percentages are from the total number of respondents.

Table 2-3 shows that majority of women respondents in migrant households (left behind households) reside in joint family households. This is in line with the observation made by Mansuri (2006a; 2006b) and mentioned earlier, that men from the rural areas are more likely to migrate if there are other adult men/women available to be left behind in the rural areas. The number of women respondents who report receiving remittances is lower than the number of women in left-behind household, this implies that that not all women in left behind households receive remittances. Also, fewer women than those who reside in left behind extended family households report receiving any remittances, meaning that in extended family households', remittances are received by other members. However, some respondent women in non-migrant households also reported receiving remittances. These remittances are sent by members of women's natal families. Hence, it is possible that a woman in a non-migrant (non-left behind household) reports receiving

remittances. It should be noted that the number of migrant wives or the number of women who receive remittances in the households included in the survey could be higher than the numbers included in Table 2-3. However, those women were not the respondents of the decision-making module and hence cannot be shown in Table 2-3 as they were not the selected respondents of the decision making module.

Women respondents have reported in the survey who in the household usually takes the decisions regarding different aspects of household life including, household expenditures and household’s production decisions. Women’s participation in these decisions is the first dependent variable of the analysis.

Table 2-4: Percentage of women in Migrant (Left-behind) and Non-Migrant Household who reported participating in Household Decisions

Decisions	Non-Migrant Households (% participated)	Migrant HHs (Left-behind) (% participated)
Number of Obs	6333	514
Large Expenditure	40	50
Small Expenditure	49	61

Note: The figures reported in this table are percentages of women in migrant (non-migrant) households that reported having participated in household decisions regarding the given category out of all women respondents in migrant (non-migrant) households. So, column 1, row 1 says that 40 percent of women in left behind migrant households solely or with other members of the household take decisions regarding large expenditures of the household.

Women’s decision participation is captured using dummy indicators based on responses to the following questions, Dummy=1 if women reported sole or joint decision making in response to the following questions:

Who in your household decides to allocate money for occasional large expenditures of the household?

Who in your household decides to allocate money for food for the household? (The question asked in round 2 used the term “small everyday expenditures”).

Table 2-4 shows women’s reported participation in household decisions regarding 1. large household expenditures and 2. Everyday household expenditures. Table 2-4 shows the *percentage of respondent women out of the total respondent women who said that they alone or together with other household members took these decisions*. For example, sixty one percent of women in left-behind households reported solely deciding or with other members of the household on allocation of household budget for everyday expenditures. Women’s participation in household production decisions is shown in a separate table below (Table 2-5) because this data is available for round 3 and 4 only.

Table 2-5: Women's Participation in Households' Production Decisions in Non-Migrant and Migrant (Left Behind) Households

"When decisions are made regarding the following aspects of household life, who normally takes the decision?"	No of Obs	Households engaged in Agri Production	Non-Migrant	Migrant (Left behind)
Food Crop Farming	3336	1854	19**	29**
Cash Crop Farming	3336	1664	17**	24**
Livestock Farming	3336	2590	34	45

Note: Women are considered having participated in these decisions if she reported that she herself alone or with other members of the family usually took these decisions. Additionally, if the woman's response was "family jointly" or "Female members of the household together", she is considered as having participated in these decisions.
 ***p<.001, **p<0.05, *p<0.10

Table 2-5 shows women's participation in household production decisions. This data is not available in Rounds 1 and 2 of the PRHPS. However, women respondents in Round 3 and 4 (Years 2014, 2017) reported their participation in households' production decisions. The respondents were asked to state, "When decisions are made regarding the following aspects of household life, who normally takes the decision?" The aspects recorded are, 1. Food Crop Farming 2. Cash Crop Farming and 3. Livestock Farming. As shown in Table 2-5 majority of women respondents reported not participating in decisions regarding farming of food and cash crops in non-migrant households. However, it appears that women's participation in household's agricultural production decisions is higher in migrant (left-behind) households.

In the female questionnaire, the primary female respondent was requested to report the time spent by all female members of the household in various activities. Therefore, the dataset has information on the time spent by all female members above the age of 5 in various tasks. Tasks for which the number of hours spent were recorded include, cooking, cleaning own house, washing utensils, care of children and the elderly in homes, collecting water for household consumption, collecting fuelwood for household use and fodder for own cattle, washing laundry of household members and ironing, sewing of clothes for household members, preparing dung cakes for household use, household's own agriculture work, household's own non-agricultural enterprise, paid agricultural work, paid non-agricultural work, shopping for the household and maintenance and repair of house. These tasks are divided into three categories, 1. domestic work 2. paid work and 3. own work. Domestic work includes cooking, cleaning the house, washing utensils, care of

children and the elderly at home, collecting water for household, collecting fuelwood for household use and fodder for own cattle, washing and ironing laundry of household members, sewing clothes for household members and preparing dung cakes for household use. Paid work includes paid agricultural work and paid non-agricultural work. Own work includes household's own agriculture work and household's own non-agricultural enterprise.

Table 2-6 shows number of hours per week spent in domestic, own, and paid work by all women in migrant (left behind) and non-migrant households. The table shows that women spend more time in domestic work. Time spent by women in domestic work points towards gender division of labour where women are primarily responsible for household chores and care of children and the elderly. The table also shows that average time spent by women in paid work is low, for women migrant (left behind) and non-migrant households average time spent per week in paid work is 1.5 hours and 3.2 hours, respectively.

Table 2-6: Hours Spent per Week by Women in Migrant (left behind) and Non-Migrant Households

Variable	Non-Migrant Households	Migrant (left behind) Households
Number of Observations	10,042	621
Hours spent per Week in Domestic Work	39.5*** (1.12)	33.2*** (1.12)
Hours spent per week in Paid Work	3.2*** (0.42)	1.5*** (0.42)
Hours spent per Week in Own Work	4.3*** (0.33)	3.1*** (0.33)

Domestic work includes cooking, cleaning the house, washing utensils, care of children and the elderly in the home, collecting water for household consumption, collecting fuelwood for household use and fodder for own cattle, washing laundry of household members and ironing, sewing of clothes for household members and preparing dung cakes for household use.

Paid Work: Includes agricultural or non-agricultural work done in exchange for wage.

Own Work: Includes agricultural or non-agricultural work on household own enterprise.

*** p<0.01, ** p<0.05, * p<0.1

The time spent by women in households own agricultural and non-agricultural enterprise, is less than the time spent in domestic work but is more than the time spent in paid work. For women in migrant (left behind) and non-migrant households, women on average spend 3.1 and 4.3 hours per week on own work, respectively. This is also in line with the observation that women are more likely to engage in non-remunerated work. The table also suggests that women in migrant (left behind) households, spend fewer hours in all types of activities. This could be because migrant

households have higher incomes that are invested in technology that reduces the time needed for domestic tasks such as electric motor for pumping water for use or washing machines for laundry.

As mentioned earlier, women’s participation in household decisions is reported for between 1 and 3 women from all households. That is, all women members of the households have not reported their participation in household decisions. This means that an analysis of the impact of migration on decision making role of women cannot be conducted for all women in the households but only for select women (the respondent women only). Table 2-7 below shows the hours spent in migrant (left behind) and non-migrant households in domestic, own, and paid work by respondent women only. Table 2-7 shows trends seen in Table 2-6 above. Women spend more hours in domestic and own work than in paid work. Also, women in migrant (left behind) household spend fewer hours in all three types of activities.

Table 2-7: Hours Spent per Week by Respondent Women in Migrant (left behind) and Non-Migrant Households

Variable	Non-Migrant Households	Migrant (Left behind) Households
No of Observations	6327	514
Hours spent per Week in Domestic Work	37.5*** (0.33)	33.1*** (1.04)
Hours spent per week in Paid Work	3.8*** (0.14)	1.6*** (0.32)
Hours spent per Week in Own Work	4.7*** (0.11)	3.4*** (0.31)

Domestic work includes cooking, cleaning the house, washing utensils, care of children and the elderly in the home, collecting water for household consumption, collecting fuelwood for household use and fodder for own cattle, washing laundry of household members and ironing, sewing of clothes for household members and preparing dung cakes for household use.
Paid Work: Includes agricultural or non-agricultural work done in exchange for wage.
Own Work: Includes agricultural or non-agricultural work on household own enterprise.
*** p<0.01, ** p<0.05, * p<0.1

Table 2-6 and Table 2-7, however show the number of hours spent by women in work regardless of whether the women in question participated in these activities or not. In appendix Table A6, the number of hours spent in each type of work only for women who reported non-zero number of hours are presented. The table follows the patterns shown in Table 2-6 and Table 2-7; women in migrant households spend fewer number of hours in all three types of activities.

Variables used in different parts of the analysis are not available in all rounds of the PRHPS. Data on women's decision participation in households' expenditure decisions is not available for round 1, hence this analysis is conducted for rounds 2-4. Data on women's decision participation in household's agricultural production decisions is not available for rounds 1 and 2 both. Hence, this analysis is conducted for round 3 and 4 only. As already stated, women's participation in household decisions is not available for all women, it was only gathered from between 1-3 women from each of the surveyed households. Data on number of hours spent by women in various tasks is available for all four rounds of the survey and for all women over the age of the 16 in the surveyed households. Hence, the impact of men's migration on women's work burden is analysed for all for rounds and for all women in the surveyed households. Detail on the data used in each analysis, depending on its availability, are also provided before analysis.

2.4 Estimation and Identification Strategy

The effect of men’s migration on decision participation of women in the left behind household is estimated using equation (2.1) below:

$$\begin{aligned}
 Participates_{j,i,t} = & \alpha_1 Wife_{j,i,t} + \alpha_2 Remittance_{j,i,t} + \alpha_3 Wife * JointFamily_{j,i,t} + \alpha_4 Remittance_{j,i,t} \\
 & * Wife_{j,i,t} + \alpha_5 Y_{j,i,t} + \alpha_6 X_{i,t} + \omega_i + \Omega_t \\
 & + \varepsilon_{i,t} \dots\dots\dots(Eq 2.1)
 \end{aligned}$$

[i=1,2...2090]

[t=2,3,4]

[j=1,2,3]

Participates_{j,i,t} is a binary variable that has value one if woman j, in household i at time period t reports that she either alone takes a decision or participates in household decision with other members of household. *Wife_{j,i,t}* is a dummy variable that takes value 1, if woman j, in household i, at time period t was the left behind wife of a migrant. *Remittance_{j,i,t}* is a dummy variable that has value 1 if woman j, in household i, at time period t receives remittances. The dummy variable *Wife_{j,i,t}* and *Remittance_{j,i,t}* are interacted to estimate the effect of being left-behind wife of a migrant who receives remittances. The dummy variable *Wife_{j,i,t}* and *JointFamily_{i,t}* are interacted to estimate the effect of being left-behind wife of a migrant in a joint/extended family household. The coefficient of the interaction term, *Wife * JointFamily_{j,i,t}*, α_3 , captures the effect on decision participation of a left-behind wife living with her extended (or joint) family. That means that α_1 captures the effect of being left-behind wife of a migrant who does not receive remittances and lives in a nuclear family household. α_2 captures the effect of women receiving remittances who are not left-behind wives³³. The variables *Wife_{j,i,t}* and *Remittance_{j,i,t}* are not correlated as wives of migrants may not be receiving remittances. Furthermore, there are women who report receiving remittances, but the household does not report having a migrant. This is when a married woman living with her husband’s family receives

³³ As noted earlier, a migrant household is a household from where a male member left for employment sometime during the year prior to the survey and was away from the household at the time of the survey. The migrant wife is the wife of such a member. Whether a woman receives remittances or not does not depend on her being a migrant wife. The survey instrument contains a section on households’ receipt of remittances. This section records if the household members received any remittances and which member receives these remittances. It is possible for a household to be a non-migrant household and still be receiving remittances. These remittances could be sent by a non-member. Also, non-migrant wives have also reported receiving remittances, these may have been sent to them by members of their natal families.

remittances from a member of her natal family. $Y_{j,i,t}$ are characteristics of woman j in household i at time period t and. $X_{i,t}$ are characteristics of household i , at time period t . $\omega_{i,t}$ are individual fixed or random effects and Ω_t are time fixed effects. $\varepsilon_{i,t}$ is the random shock.

The estimation of equation (2.1) type relationships where the dependent variable is a binary variable poses methodological challenges in the context of panel data. Panel data allows comparisons of cross-sectional units while considering the differences in these cross-sectional units that are not observed. Panel data models including random effects models and fixed effects models, account for these differences. In fixed effects models, the effect is captured such that it is analogous to including a dummy variable for each cross-sectional unit in the regression equation. The dummy variable captures the effect of each cross-sectional unit not explained by the covariates. In practice, the data is transformed by subtracting the average values of variables from each observation and running a regression on the transformed variables. In this way, heterogeneity between cross sectional units is accounted for in the regression equation. A random effects model also involves transforming the data in a way that the heterogeneity between cross sectional units is accounted for. However, the difference between fixed and random effects models is the assumption regarding the relationship between the unobserved heterogeneity and the covariates in the model. In a random effects transformation, it is assumed that there is no correlation between the included explanatory variables and error term. That means that for random effects model there must not be any omitted variables in the model. Since with real data, it is difficult to account for all possible explanatory variables in a model, fixed effects models are more appealing.

Transformation of data for fixed effects estimates is not straightforward in non-linear models such as those with binary dependent variables. In a Probit model, a fixed effects transformation is not possible. While in a logit model, such a conditional transformation is possible. Therefore, a fixed effects logit model is more accurately described as a conditional fixed effects logit. However, even though estimation of equation (2.1) is possible using conditional fixed effects logit model for panel data. It is not possible to estimate the marginal effects of explanatory variables as the estimation of the unobserved heterogeneity is not possible with the logit

transformation³⁴. Hence, in the analysis below, marginal effects have not been reported instead the results are presented in terms of the odds ratios. The complete estimated equations are provided in the appendix.

To estimate the effect of migration on the number of hours spent in non-leisure activities by the left behind wife the following equation is estimated.

$$\begin{aligned}
 \text{Hours per Week}_{j,i,t} = & \\
 &= \beta_1 \text{Wife}_{j,i,t} + \beta_2 \text{Remittance}_{j,i,t} + \beta_3 \text{Wife} * \text{JointFamily}_{j,i,t} + \beta_4 \text{Remittance}_{j,i,t} \\
 &* \text{JointFamily}_{j,i,t} + \beta_5 \text{Wife}_{j,i,t} * \text{JointFamily}_{j,i,t} * \text{Remittance}_{j,i,t} + \beta_6 \text{AverageWage}_t \\
 &+ \beta_7 Y_{j,i,t} + \beta_8 X_{i,t} + \omega_i + \Omega_t + \varepsilon_{i,t} \quad \dots\dots\dots(\text{Eq 2.2})
 \end{aligned}$$

Where *Hours per Week*_{j,i,t} are the number of hours spent by woman j, in household i, at time period t in 1) Paid Work 2) Domestic Work and 3) Own work. The explanatory variables are the same as described above. However, for equation (2.2), *AverageWage*_t, average agricultural wage of women in the village at time period t, is used as a control variable to capture the opportunity cost of not engaging in paid work. Equation 2.1 is estimated for the respondent women of the survey described above. Equation (2.2), however, is estimated for all women over the age of 16 in the surveyed households. To summarize the estimated effects, the coefficient β_1 captures the change in number of hours spent in activity due to being a left-behind wife in a nuclear family household (who does not receive any remittances). β_2 captures the effect of receiving remittances by a woman on the number of hours spent in activity. β_3 captures the effect on number of hours spent in activity due to being a left-behind wife in an extended family household (who does not receive any remittances). β_4 suggests the effect on number of hours spent in an activity by a woman receiving remittances in an extended family household. β_5 captures the effect on number of hours spent in an activity by a left-behind wife of a migrant, living in extended family household but receiving remittances. As the dependent variable is a continuous variable, equation (2.2) is estimated using fixed effects model.

³⁴ In statistical package STATA, marginal effects after a logit model with random or fixed effects are calculated assuming these effects to be zero, see: <https://www.stata.com/manuals/rclogitpostestimation.pdf>, and <https://www.stata.com/manuals14/xtxtlogitpostestimation.pdf>. Accessed October 10, 2019.

Before estimating equations 2.1 and 2.2, however, the effect of migration of men from the household on the decision-making role and work of all women in the left behind household are also estimated. That is, the equations 2.1 and 2.2 take the forms of equations 2.1a and 2.2a

$$Participates_{j,i,t} = \gamma_1 MigrantHousehold_{i,t} + \gamma_2 Remittance_{j,i,t} + \gamma_3 JointFamily_{i,t} + \gamma_4 Y_{j,i,t} + \gamma_5 X_{i,t} + \omega_i + \Omega_t + \varepsilon_{i,t} \quad Eq (2.1a)$$

[i=1,2...2090]

[t=1,2,3,4]

[j=1,2,3]

The difference between equation 2.1 and equation 2.1a is that the explanatory $MigrantHousehold_{i,t}$ is a binary variable that takes value 1 if household i, at time period t has a migrant member. Unlike in equation 2.1, the explanatory variable is $MigrantWife_{j,i,t}$ that takes value 1, if woman j, in household i at time period t is the wife of a migrant. Hence, γ_1 captures the effect of migration of men on the decision making participation of all women in the left-behind household. While β_2 captures the effect of migration on decision making participation of the left-behind wife of the migrant in the left-behind household. All other explanatory variables are the same as those in equation 2.1. The interaction terms are not included in the estimates for all women left-behind because multiple women respondents are expected to be from extended family households only.

Similarly, a variant of equation 2.2 is estimated to assess the effect of men's migration on the work of all women in the left behind household

$$\begin{aligned} Hours\ per\ Week_{j,i,t} = & \\ & = \lambda_1 MigrantHousehold_{i,t} + \lambda_2 Remittance_{j,i,t} + \lambda_3 JointFamily_{i,t} \\ & + \lambda_4 AverageWage_t + \lambda_5 Y_{j,i,t} + \lambda_6 X_{i,t} + \omega_i + \Omega_t \\ & + \varepsilon_{i,t} \quad \dots\dots\dots(2.2a) \end{aligned}$$

The difference between equation 2.2 and equation 2.2a is that the explanatory variable $MigrantHousehold_{i,t}$ in equation 2.2a takes value 1, if household 1, at time period t had a male member who had migrated from the household. λ_1 captures the effect of migration of a member on the number of hours per week spent by all women in the left behind household. They may or

may not be the left-behind wife of the migrating member. Woman j , in household i could be the mother, sister, daughter-in-law or sister-in-law of the migrating member. All other explanatory variables are the same as equation 2.2. The interaction terms are not included in the estimates for all women left-behind because multiple women respondents are expected to be from extended family households only. Equations 2.1 and 2.1a are estimated using fixed effects and random effects logit. Equations 2.2 and 2.2a are estimated using fixed effects regression.

Identification

Estimation of the effect of migration on migrants, migrant households or migrant spouses is complicated by endogeneity of explanatory variables. There are at least three sources of endogeneity; 1. Omitted variables 2. Selection (of migrants, migrant households, and migrant wives) and 3. Simultaneity.

In the context of the analyses in this thesis. Migration of men and outcomes for women left behind in the migrant household (decision participation and work burden) may be affected by factors that affect both migration of members and women's outcomes but are not captured by the estimated model. These variables can be shocks that push members of households to migrate while pushing left-behind women to take on responsibility of the household including its decision making and work. Regression analysis of the effect of migration on women's decision participation (and work burden) may suggest that migration of men "causes" or leads to changes in women's participation (and work burden) while both outcomes may be the result of an underlying unobserved factor.

The other source of endogeneity is self-selection of migrants, migrant households and possibly of migrant wives. Literature on voluntary migration recognises that migrants (and migrant households) and non-migrants (and non-migrant households) differ in terms of their observed and unobserved characteristics. The observed characteristics of households that set them apart from non-migrant households may be higher socioeconomic status or household size. For example, in rural Pakistan, men's ability to migrate rests on the capacity of the left-behind household to function in the absence of one (or more) of its male members. One factor that may affect this capacity is the availability of male members other than the migrant in the household. Hence, men are more likely to migrate if they belong to households that have other male family members

(migrant's father, brother, sons or cousins) to be left behind with women members (Mansuri, 2008a; 2008b). Moreover, within the household itself, a particular member may be more likely to migrate because of his higher level of education than non-migrant members. This selection of migrant and migrant households means that cross-sectional comparisons of these lead to biased estimates of the effects of migration itself as existing differences between these may compound due to migration or estimates only capture these existing differences.

In a similar vein, migrant wives may also be different in terms of observable and unobservable characteristics from other married women thus allowing migrants to leave them behind and in charge of the left-behind household. Observable characteristics allowing them to stay behind may be age, number of children (number of sons) or level of education. Unobservable characteristics that allow them to stay behind may be their confidence, risk-taking ability, and management skills. In other words, left-behind wives of migrants may be women who are able to take more decisions within the household or are likely to work outside the home with or without the migration of men. This "selection" of migrant wives would also then imply that any estimated differences between decision participation of left-behind wives may not be the outcome of men's migration but only the differences between the type of women who become or are selected to become wives of migrants. Studies have noted that wives play a part in the process of migration (Gardner, 2006). Left behind wives take up the responsibility of care of children and elders in the household. These women take up the responsibility of managing farms and non-farm enterprise. Left-behind wives also engage in paid work to compensate the loss of income incurred to bear the cost of migration or to sustain the household if the migrant is unable to remit to the household. Furthermore, wives' dowry assets may be instrumental in the process of migration by helping finance their spouses' migration (Palriwala and Uberoi, 2005).

On the other hand, in extended family left-behind migrant households, these characteristics of left-behind migrant wives may not be as relevant to migration as the left-behind household. Households left behind by the migrants may have other members in the household who take up the responsibility of managing farms and non-farm enterprise. Households may have other members who join paid work after migration to cover the cost of migration.

Although selection of migrants and migrant wives cannot be established, it can be hinted at by comparing observed characteristics of migrants and non-migrants and those of migrant wives

and non-migrant wives (married women who are not left-behind wives of migrants). Migrant and non-migrant households have been compared in Table 2-2. Table 2-2 shows that on average, overall size of migrant and non-migrant households does not differ. However, it appears that migrant households have significantly more adult women present in the household than non-migrant households. There are small but statistically significant differences between the number of adult men in both types of households as well but that could be because migrants themselves are more likely to be men.

Table 2-8 below shows age, education and marital status of household members who had migrated from the household for employment during the year preceding the survey. Migrants have been split into two categories: permanent migrants and temporary migrants. Permanent migrants are members who had emigrated from the village to a city or to another country some time during the year preceding the survey and had not returned home since then. In this chapter, households with permanent migrants are considered as left-behind households. Temporary migrants are migrants who had emigrated from the village for work sometime during the year preceding the survey, had stayed 6 or less months away from the household, but had returned to the household during the same year. Households with temporary migrants are not considered as left-behind households as the members had already returned to their households. However, in chapter 2, effect of migration on children of both types of migrant households is analysed.

In Table 2-8, for each round, the characteristics of temporary and permanent migrants are compared with men aged 18 to 60 who had not migrated for employment from the village in the year preceding each round. Under both categories, only men who had migrated for employment are considered. The comparison group, men aged 18-60 may have migrated sometime during their lifetime from the village for employment, but during the four rounds of the survey, they were present in the village. Permanent and temporary migrants were not strictly within the age bracket of 18-60, some migrants were as young as 16 years. However, for comparison, the comparison group of men is limited to the working age (18-60).

Table 2-8: Migrant and Non-Migrant Men

Variable/Rounds	Round 1			Round 2			Round 3			Round 4		
	Men (Ages 18-60)	Permanent Migrants ¹	Temp Migrants	Men (Ages 18-60)	Permanent Migrants	Temp Migrants	Men (Ages 18-60)	Permanent Migrants ²	Temp Migrants	Men (Ages 18-60)	Permanent Migrants ³	Temp Migrants
No of Obs	2923	29	84	2895	95	19	2685	162	136	527	64	6
Average Age	36	-	29.75	35.7	26	26	36	27.9	26.8	35	28	34
Marital Status (percent currently married)	72	-	59.5	72***	40.5***	63.2	73***	51***	53	70***	43***	83
Education												
Years of Schooling	4.6** (2917)	-	6** (74)	4.7*** (2886)	6.9*** (78)	4.4 (14)	4.7*** (2671)	7.1 *** (132)	5.8** (100)	7.5* (526)	8.5* (61)	12 ** (4)
Percent Literate	58***		74***	59.5	81***	64.3	59.3***	85.7***	75***	85.3	93.4	100
Ever Attended School	62	80.7	73**	62.8***	80.7***	64.2	62.9***	86.3***	75**	86.9	93.4	100

1. Data on the age and years of schooling of permanent migrants not available for round 1

2,3. The marital status of permanent migrants in rounds 3 and 4 is based on the information from previous rounds, as information on their marital status was not available in the round that they were recorded as migrants. That is, if an individual was a member of a household in round 2 (year 2013) and in round 3 (year 2014) that member had emigrated from the village for work, his marital status was not recorded in round 3 (year 2014). The marital status of that individual is reported from round 2 (year 2013). Therefore, it is likely that the said individual got married between the two years and also emigrated.

***p<.001, **p<0.05, *p<0.10

Note: The number of migrants in this table are higher than the number of migrant households in Table 2-1 as there are migrant households with more than one migrant member.

Table 2-8 shows that individuals emigrating from the village in search for employment are young men. These men are less likely to be married at the time of migration. This can be inferred from the percentage of men aged 18-60 who are married and the percentage of permanent migrant men who were married. However, it should be noted that the marital status of permanent migrants was not reported for the years when they had already emigrated from the village. That is, if an individual was a member of a household in round 2 (year 2013) and that member emigrated from the village for work before round 3 (year 2014), his marital status was not recorded in round 3 (year 2014). The marital status of such an individual is reported from round 2 (year 2013). Therefore, it is likely that the said individual got married between the two years and also emigrated. However, it is also likely that young unmarried men migrate for employment prior to getting married in order to cover the cost of the marriage (Arif, 1999).

Both permanent and temporary migrants are also significantly more educated on average than men aged 18-60 who had not emigrated from the village. A high percentage of migrants were literate and had attended school than non-migrants. Moreover, migrants also had acquired more years of schooling on average. The data from rounds 2 and 3 indicates that permanent migrants are likely to have more years of schooling than the non-migrant men as well as than temporary migrants. It could be that among the migrants with varying levels of education, those on the higher end are more successful in securing employment outside of the village while those with less education return to their villages.

Table 2-9 shows age, education, employment, number of children and characteristics of natal family of the women who are the left-behind wives of migrants. The table also shows these characteristics of women who are wives of temporary migrants. That is, women whose husbands had migrated for work for over 6 months or less during the year preceding the survey but had returned to the household. Even though the analysis of the impact of men's migration on decision making and work burden conducted below is limited to wives of permanent migrants, the characteristics of women whose husbands had returned from a migrant experience are also noted in Table 2-9. The reason behind restricting the analysis for women who are left-behind is that men's absence is expected to change women's work burden as well as their role in household decisions. Wives of migrants whose husbands have already returned after the migration episode may again experience a change in their decision-making role as well as work burden.

Table 2-9: Migrant Wives and Married Women

Variable/Round	Round 1			Round 2			Round 3			Round 4 ³	
	Married Women	Migrant Wives (P) ¹	Migrant Wives (T) ²	Married Women	Migrant Wives (P)	Migrant Wives (T)	Married Women	Migrant Wives (P)	Migrant Wives (T)	Married Women	Migrant Wives (P)
No of Observations ⁴	2506	64	48	2562	27	11	2397	56	72	395	21
Age	38.6***	31***	30***	38.6***	30***	28.1**	38.6***	30***	29.5	38**	31**
Education											
Years of Schooling	1.4	1.5	1.7	1.6**	3**	4**	1.7**	3**	3**	3.1	4
Ever Attended School	21	17	20	22.7***	50***	54.5**	25***	44***	41***	45	59
Literacy	18.9	17.2	20.8	21**	42**	54.5**	22***	46***	37**	44	58.8
Number of Children ⁵	2.9	2.6	2.3*	3	2.4	2	2.9	2.7	2.1***	2.5	2.3
Percent Employed ⁶				14	11.1	9	17.36	10.7	16.7	2.8	9.5
Value of Dowry (in PKR) ⁷							41886**	71570**	81262***	49742	63058
							(2156)	(45)	(59)	(299)	(17)
Value of Dowry (in PKR) (Ages 18-59) ⁸							45129**	73161**	82885***	54592	63058
							(1978)	(44)	(57)	(264)	(17)
Father's Education							1**	2.4**	1.9*	2.5	4
							(1521)	(31)	(30)	(225)	(15)
Mother's Education							0.35	.32	0.13	.41	0
							(1524)	(31)	(29)	(231)	(15)
Age at Marriage							20	19.7	18.9	18.1	19.9
							(1527)	(31)	(30)	(231)	(15)

***p<.001, **p<0.05, *p<0.10

1,2. Migrant Wives (P) refers to women who were the wives of migrants who had emigrated for employment and had been away from the household, that is, this refers to the left-behind wives of migrants. Migrant Wives (T) refers to women whose husbands had had migration experience but had returned to the village and were in the household at the time of the survey.

3. Temporary Migrants from the household could not be matched with their spouses in the dataset directly, due to the fewer number of temporary migrants in the round, no comparisons are made.

4. If the data summary provided in this table is based on number of observations that are lower than the number of observations in this row, the number of observations is shown in parentheses below the statistic.

5. The number of children for women above the age of 49 include only the number of woman's children living in the household at the time of the survey. It is possible that the women had other children who had moved away from the household.

6. Percentage who report participating in wage work. This could be different from the percentage on women who have their own earned income.

7. Data not available for Rounds 1 and 2. See footnote 35 on the next page for "dowry".

8. In order to make the value of dowry received at the time of marriage comparable, the age-group of women respondents is restricted to the age group of wives of temporary migrants.

Note: The number of migrant wives in this Table are more than the number of migrant wives in Table 2-3 because not all left-behind wives were respondents of decision-making module.

Table 2-9 shows that women who are left-behind wives of migrants, that is, wives of permanent migrants are on average younger than the all other married women in the sample. This is intuitive as the average age of migrants reported in Table 2-8 suggests that men who migrate for employment are young. However, the average age of wives of left-behind migrants is greater than the average age of migrants. This suggests that migrants emigrate before getting married and only after they have settled in an employment get married and leave their wives with their families. Men marrying younger women is the norm. As suggested above, a smaller proportion of migrant men report being married than the proportion of men aged 18-60 who were married.

Migrant wives also appear to be more educated than other married women. This is evidenced by the number of years of school attended by women who are migrant wives. Except for the left-behind wives in round 1, a larger proportion of left-behind wives reported having attended school and were literate. These women also have significantly more years of schooling than other married women in the sample. Again, this is intuitive as migrant men were also more educated than their non-migrant counterparts. Positive assortative matching would predict that these men have more educated wives. Moreover, the age group of the migrant wives also explains their higher levels of schooling. Nevertheless, the number of years of school attended by women remains abysmally low. Left behind wives of migrants who are on average 30 and 31 years of age have had on average attended between 1.5 to 3 years in school.

The wives of migrants, both of permanent and temporary migrants have on average fewer children. However, the differences are not significant in all rounds. The fewer number of children can be explained by the lower average age of migrant wives. They may not have had their desired number of children.

Migration has certain costs. These costs are covered by the migrants' or the households' savings, liquidation of assets or through loans. Some studies suggest that women's dowries are also used by migrants to finance the cost of migration. Hence, in Table 2-9 the value of dowry³⁵ reportedly received by other married women is compared with the value of dowries received by women who are left behind wives of migrants and women who are wives of men who have had

³⁵ The dowry received by women in Pakistan at the time of marriage is in the form of household goods such as furniture, consumer durables, jewellery, and items of household use. These items are bought by the woman's natal family for the bride and gifted to her. This dowry is not in the form of cash nor is it a payment paid by the bride's family to the groom. Respondent women in the PRHPS were asked to report the value of in-kind dowry that they had received at the time of their wedding. These reported values are compared in Table 2-9.

temporary migration experiences. It appears that women who are wives of migrants had received significantly larger dowries in value than other women. Given that the wives of migrants were on average younger than other married women, the value of the dowry received by other women could be because of the difference in the time that these dowries were received³⁶. As the reported value is the value of the dowry at the time of the woman's marriage. In order to make the comparison of value of dowries of migrant wives and other women, the values for married women in the age cohort of the migrant wives are compared. The difference in the values of dowries remains significant. The differences are significant only for round 3 and the data on the value of dowries for rounds 1 and 2 is not available. These dowries could have been a source of financing of the migration or migrant men are considered more desirable marriage partners and hence receive higher dowries from their wives' parents.

The average age at marriage is not significantly different for the women in these different groups nor are there any significant differences in the education of their mothers. However, for round 3 it appears that the fathers of women who are wives of migrants have had more years of schooling. Now, since marriages are arranged in Pakistan. It may be that educated fathers marry their daughters to educated boys who in turn have a higher likelihood to migrate.

These comparisons suggest that migrants differ from non-migrants and migrant wives differ from other married women whose husbands did not migrate for work. An argument can be made that these women were able to select migrants as their husbands in order to be able to have relatively higher decision-making power within households. However, in the rural marriage market in Pakistan, it is unlikely that these women choose their migrant partners themselves.

The rural marriage market in Pakistan has two notable features, one is that marriages are arranged by parents and/or elders and second, is consanguinity. In most arranged marriages, the couple, especially women do not have de facto power to oppose their parents' chosen partner for them. It can be said for a majority of migrant wives that they did not choose their (migrant) husbands themselves. It is more likely that migrants were chosen as husbands by the wives' parents. Migration and marriage research in Pakistan have focused on the marriage preferences of permanent migrants to the UK and Europe. Not a lot of research is available on the preferences of migrants to the Gulf or on the dynamics of the marriage market of internal migrants. However,

³⁶ As the year in which marriage took place has not been specified, the values of reported dowries cannot be homogenized for comparison.

Hussain (1999) cites Donnan (1988) and Naveed-i-Rahat (1999) and says that boys who leave their rural households for employment, their marriages are also arranged by their parents. If migrants themselves do not choose a wife with certain characteristics it does not follow that migrant wives are not “selected”, parents of migrants/potential migrants may choose a girl whom they believe is able to manage the household in the absence of the migrant.

The second feature of the rural marriage market, consanguinity, limits the choice of partners for migrants/potential migrants to some extent. For within arranged marriages, first cousins are most preferred by parents as partners for their children. This feature of the marriage market is the most highlighted in research. Estimates of the prevalence of consanguineous marriages range from 61.3-62.7 percent first or second cousin marriages in the sample of Pakistan Demographic Health Survey (DHS, 1990/91) (Afzal, Ali & Siyal, 1994; Hussain & Bittles, 1998). Recent studies report that 56.4 percent of all marriages in Pakistan are between first and second cousins (Sthandar, Bittles and Zahid, 2016). These studies note that the rates of consanguineous marriages are higher among the rural populations (Bittles, 2001). Arranged marriages and preference for first cousins as spouses has also been noted for migrants to the UK and Europe (Ballard, 1990; Shaw, 2001; Shaw and Charsely, 2006). Migration status, especially migration to the UK and Europe is valued and is desirable. A settled migrant presents an opportunity for the non-migrants of an improved life in the UK and Europe. (Charsely, 2005; Celikaksoy, Neilson and Verner, 2006). Given that cousin marriages remain predominant in the rural areas, it can be expected that left-behind migrant wives are also from the immediate family of the leaving migrant. Ballard (1990), in the context of Pakistani migrants to the UK observed that these migrants were less likely than their Indian contemporary migrants to have their wives join them in the UK. He reasoned that since cousin marriages are predominant among these migrants, their wives could stay behind with their in-laws with relative ease and comfort as the in-law’s household was also likely to be the household of an aunt or uncle and the parents in law were also the aunt or uncle of the wife who stayed behind.

Arranged and consanguineous marriages, however, do not rule out selection of migrant wives. The migrant characteristics presented in Table 2-8 and the characteristics of migrant wives presented in Table 2-9 suggest that migrants differ in terms of observable characteristics from men who did not leave the village for work. Migrant men are younger and more educated. Similarly,

migrant wives (both, left-behind wives, and wives of temporary migrants) are younger, slightly more educated and had received higher valued dowries at marriage. It may be inferred that migrants and migrant wives differ from non-migrants in terms of their unobserved characteristics as well.

Another source of endogeneity is simultaneity of decision making within the household. The household may decide that one or more members migrate for employment and the left-behind members, including the women, take on the responsibility of work on household enterprise or withdraw from work on household enterprise (including farming) in the absence of the migrant. Simultaneity of decisions would imply that any change in women's decision participation or women's work burden be not be the outcome of men's migration but resulted from collective decision process within the household of which the women themselves may be a part. Estimating the effect of migration on women's participation in household decisions would then ignore that women's participation in household decisions may have led to the migration and changed role of women in household decisions. It is difficult to assess if the decision to migrate coincides with households' decision to put women in charge of household decisions or put women in work.

The decision-making process behind migration can be assessed from the dataset used in the study. In the primary data collected in the year 2017 (round 4), all households from where a member had ever migrated for employment were asked to state whose decision was it for the member to migrate. Information on the decision to migrate is available for 95 migrants, 71 respondents (75 percent) (who were in most cases members of the migrants' family and not the migrant himself) reported that it was the solely the migrant himself (all of the migrants were men, hence "himself") who decided to migrate. 18 respondents (19 percent) reported that it was the decision of the migrants' male family member (father, brother, or uncle) that the migrant emigrate. Four respondents said that it was the migrants' parents' decision. Only one respondent suggested that it was the decision of the migrants' mother or sister and another one suggested that it was the collective decision of the migrant and his male family members including his father and brothers.

In the first place, this data contradicts migration literature that suggests that migration is a household decision rather than an individual decision. Secondly, no response suggests that the decision to migrate was jointly taken by the migrant and his wife. Only one response out of 95

includes women as having participated in the decision to migrate, but those women are the mother and the sister of the migrant. Migrant wives as being suggested to have not participated in the migration decisions could be because the decision to migrate takes place before marriage as suggested earlier. Or it may be the case that the response that the decision to migrate was only the migrant's decision subsumes the role of the wives. However, this can also be ruled out as it appears that the decision to migrate is taken by young men before marriage.

Joint decision making can also be elicited from the way migration was financed. If the household collectively financed migration, then it can be inferred that the decision to have one member migrate was also a collective decision. In the primary data collected (round 4), respondents were also asked to recall who had borne the cost of migration and how was it financed? 69 respondents (73 percent) reported that the migration cost was covered from migrants' own savings. 19 respondents (20 percent) said that it was the households' saving or the saving of another member of the household that was used to cover the cost of migration. 6 respondents said that the migrant or the household took a loan to cover the cost and 1 percent reported other sources. These data also seem to suggest that migration is an individual's decision.

However, it is naïve to suggest that an individual's decision to migrate is not contested within the household. Men's decision to migrate leaving their families behind has been observed to be contested by other members of the family including parents. Wives, however, appear to have little say in decisions regarding migration (Ahmad, 2008). Ahmad notes that some migrants understand that their wives left behind with his family (the woman's in-laws) experience lower voice and decision-making ability households due to their absence but do not take into account their wishes. It is worthwhile to quote Ahmed (2008) here: "*When asked what his wife said about his coming to Italy illegally, Faizal told me that 'wives in Pakistan say nothing. They say, "You know what's best".'* When probed, however, it emerged that his wife had been against his emigrating, but that he had ignored her wishes. '*When a man leaves,*' he explained, '*he goes for two years at a time,*' leaving his wife living alone with her in-laws, '*not knowing when he'll be coming back*'.".

In summary, endogeneity is expected to affect estimates of changes in women's decision-making roles and work burden within the household due to omitted variables, selection and simultaneous decision making. Although the observable characteristics of women suggests self-selection, in the context of the rural marriage markets, it seems unlikely that women are able to strategically select migrant partners in order to gain control within the household after the migration of men. Simultaneity of decision making whereby the migrant husband and his wife collectively decide that the migrant emigrate, and she is left-behind, is also unlikely as decision to migrate appears to have taken place before marriage and it also appears to be taken by men themselves. Estimated effects of men's migration on left-behind women then can be considered as being outcome of migration.

However, in the analyses below, endogeneity has been tackled econometrically. In the absence of natural experiments, in migration research, longitudinal data with fixed effects regression is considered a second-best alternative for tackling endogeneity. Longitudinal data tackles endogeneity that arises due to selection by comparing the same units of observation (household, individual) before and after migration. Longitudinal data can be used to apply "Fixed Effects" regression. Theoretically, fixed effects regression estimates the effects of the explanatory variable controlling for unobserved characteristics of individual units. As data on individual units is available for multiple time periods, unobserved characteristics of each unit are estimated as separate intercepts. In this way, the estimated effects can be more reliably said to have occurred due to migration. Fixed effects regression tackles migration selection and omitted variable bias. However, fixed effects cannot adequately tackle endogeneity arising due to simultaneity of decision making.

2.5 Results

2.5.1 Migration and Women's Decision-Making

Small and Large Expenditure Decisions

Prior to assessing if migration of men affects decision-making role of their left-behind wives, it is assessed if male migration affects decision making participation of all women in the left behind household. The effect of migration of a male member on the decision-making participation of women in the left-behind household is estimated using equation (2.1a).

Table 2-10 presents the estimated odds ratios from equation 2.1a. The regression equation is controlled for women's characteristics including, age, marital status, employment, number of children and the ratio of sons to daughters. The equation is also controlled for household characteristics including household size, ratio of adult women to men in the household, and household type (joint or nuclear family household). In columns (1) and (2) estimates are further controlled for individual fixed effects and year fixed effects. In column (3) and (4), estimates are controlled for random effects and year fixed effects. The equation does not contain interaction terms for women in extended family migrant households and women receiving remittances in extended family households as multiple women respondents, or multiple women in left-behind households are expected to be from extended family households only. Fixed effect regression equations are adjusted for survey weights. Standard errors are clustered at the household level.

The results of random effects model suggest that women in left-behind migrant households are more likely to participate in household decisions regarding small and large expenditures. This effect is not significant when controlled for individual fixed effects (fixed effects model in columns 1 and 2 of Table 2-10) but the positive sign is retained. The results, however, do seem to suggest that that women who receive remittances are significantly more likely to participate in household decisions concerning both small and large expenditure decisions. This effect is positive and statistically significant for both fixed effects and random effects models. Complete logit estimates are provided in appendix Table A7.

Table 2-10 Binary Dependent Variable: Woman's Participation in Large and Small Expenditure Decisions in the Household

VARIABLES	(1) FE Small Exp	(2) FE Big Exp	(3) RE Small Exp	(4) RE Big Exp
Migrant Household (Dummy Variable)	0.956 (0.287)	1.100 (0.293)	1.265* (0.126)	1.589*** (0.287)
Woman Receives Remittances (Dummy Variable)	2.380*** (0.292)	2.837*** (0.272)	2.111*** (0.138)	2.455*** (0.292)
Constant			0.209*** (0.140)	0.332*** (0.151)
Observations	1,801	1,801	6,741	6,741
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Number of person_id			3,783	3,783

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Control Variables: Woman's Age, Woman's Marital Status (Dummy variable, Married=1), Employment Status (Dummy Variable, Employed=1), Number of Children, Ratio of sons to daughters, Household Size, Ratio of Adult Women to Men in the Household, Household Type (Binary Variable, Extended Family Household=1)

Table 2-11 present the odds ratios of the estimated coefficients of estimation of equation 2.1. That is, it reports the effect of migration of men on the decision-making role of the left-behind wives. The dependent variable is a binary variable that takes value 1 if the respondent woman reports participation in household's large and small expenditure decisions. In columns (1) and (3) of Table 2-11 the dependent variable is woman's self-reported participation in household everyday expenditures and for column (2) and (4) the dependent variable is woman's self-reported participation in households' large expenditure decisions. The binary variable is constructed from women's response to the question; "who in the household decides to allocate money for (category)?" The binary variable takes value 1 if the woman respondent reports that she herself or along with other members of the family takes these decisions. The variable takes value 0 if the women reports other member(s) taking these decisions. Table 2-11 presents the estimated odds ratios from equation 2.1. The estimates are controlled for women's characteristics including, age, employment, number of children, and ratio of sons to daughters. The equation also contains household characteristics including household size, ratio of adult women to men in the household,

household type (joint or nuclear family household). The equation is further controlled for individual fixed effects and year fixed effects in columns (1) and (2) and is estimated using random effects and year fixed effects for columns (3) and (4). The equation also contains interaction of the two explanatory variables that is, migrant wife and household type and women receives remittances and household type. Fixed effect regression equations are adjusted for survey weights. The estimated coefficients of the logistic regression are provided in the appendix (Table A8).

Table 2-11: Binary Dependent Variable: Woman's Participation in Large and Small Expenditure Decisions in the Household

VARIABLES	(1)	(2)	(3)	(4)
	FE Small Exp	FE Big Exp	RE Small Exp	RE Big Exp
Wife of Migrant (Dummy Variable)	1.454 (0.978)	0.373 (1.009)	2.805 (0.688)	1.566 (0.611)
<i>Migrant Wife * Receives Remittances</i>	6.043 (1.400)	7.276 (1.413)	2.018 (1.022)	2.090 (0.915)
<i>Migrant Wife * Extended Family</i>	0.253 (1.110)	1.011 (1.165)	0.448 (0.747)	0.949 (0.675)
Woman receives Remittance, (Dummy Variable)	2.636*** (0.281)	2.192** (0.305)	2.268*** (0.157)	2.014*** (0.148)
Constant			0.321*** (0.153)	0.207*** (0.140)
Observations	1,801	1,801	6,740	6,740
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Number of person_id			3,783	3,783

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Control Variables: Woman's age, Employment Status (Dummy), Number of Children, Ratio of Sons to daughters, Household Type (Dummy Variable: Extended family=1), Household Size, Ratio of Adult Women to Men, Log of Woman's Income.
Variables in italics are interaction terms.

Table 2-11 suggests that the effect on the decision participation of left-behind wife of a migrant depends on two things, one is the household living arrangement and the other is whether the left-behind wife directly receives remittances. The interaction term, migrant wife and receives remittances is positive for both small and large expenditures category. This means that migrant wives who receive remittances experience an increase in their participation in household

expenditure decisions. The coefficient of the variable women receive remittances is positive and significant which means that for women, who are not left-behind wives of migrants but receive remittances are significantly more likely to experience increase in participation in household decisions. The interaction term migrant wife and extended family household shows that wives left behind in extended family households experience a lowering of participation in household small expenditure decisions.

The results shown in Table 2-10 and Table 2-11 are based on the full set of observations including round 4. However, including round 4 in makes the panel unbalanced. Equations 2.1 and 2.1a are estimated after restricting the sample to the districts included in round 4. The results are shown in the appendix (Table A9 and A10). Results from a balanced panel for all women in suggest that women in left behind households have experience an increase in their decision participation. These also suggest that women who receive remittances have higher participation regarding large expenditure decisions of the household. Results of the balanced panel for the left behind wife suggest that wives, as well as other women who receive remittances experience an increase in decision making participation.

2.5.2 Production Decisions

Prior to analysing the effects of migration of men on women's participation in decisions regarding households' agricultural production decisions, it may be noticed that overall a small percentage of women report participating in household decisions regarding agricultural production. These decisions, decisions related to production for household consumption as well as decisions regarding production for sale in the market, are taken by men. Also, data on women's participation in households' small and large expenditures is available for round 2, 3 and 4. While the data on women's participation in households' agricultural production decisions is only available for rounds 3 and 4. Additionally, not all rural households were engaged in agricultural production. Women were only required to state their participation in household production decisions if the household engaged in agricultural production. Hence, the dataset for the estimation of the impact of men's migration on women's role in household decisions regarding agricultural production is smaller than the dataset used for the estimation of the impact of men's migration on women's participation in households' expenditure decisions.

Table 2-5 in the data section above has shown women's participation in household production decisions. In rounds 3 and 4, respondent women were asked to state, "When decisions are made regarding the following aspects of household life, who normally takes the decision?" The aspects recorded are, 1. Food Crop Farming 2. Farming of crops for sale in the market (Henceforth called Cash Crop Farming) and 3. Livestock Farming.

Table 2-5 reports the number of households engaged in farming and the percentage of women in migrant and non-migrant farming households who reported participation in household farming decisions or reported taking these decisions themselves. As shown in Table 2-5, majority of women respondents report members other than themselves taking decisions regarding food and cash crop farming. Overall, 19.6 percent of women in farming households report participation in decisions regarding food crop production and 18 percent women in farming households report participation in cash crop production decisions³⁷. A higher number of households were engaged in livestock raising/farming and a higher proportion of women report participating in decisions regarding livestock farming (34.6 percent). Given that the overall percentage of women who participate in these decisions is low, data points that correspond to change in women's participation in these decisions and a change in household status from being a non-migrant to a migrant (left behind) household are even lower. Also, as the data collected in round 4 of the survey was from a sub-sample of the survey (300 households), these data points that show a change between two rounds are small in number. This makes the estimation of fixed effects model difficult, hence equation 2.1 and 2.1a are estimated using random effects.

The effect of migration of men on decision participation of all women in the left-behind households is estimated prior to the estimation of the effect on the left-behind wife. Table 2-12 shows the estimated odds ratios from estimating equation 2.1a. Columns (1), (2) and (3) show the effects on women's participation in household decisions regarding food crop production, cash crop production and livestock farming respectively. The estimates are controlled for individual characteristics including the Woman's age, Woman's Schooling (Binary Variable: Ever attended school=1), Woman's Employment (Binary Variable, Employed=1), Marital Status (Binary Variable. Married=1), Number of Children, Ratio of sons to Daughters. The equation is also

³⁷ The percentages are based on the total number of households engaged in that type of farming, so, 18 percent of women respondents in households that were engaged in production of cash crops on their own farms in the year preceding the survey.

controlled for household characteristics including Household Type (Binary Variable, Extended Family=1) Household Size, Ratio of Adult women to men in the household. The standard errors are clustered at the household level. Individual fixed effects are not included for the reason that with the inclusion of individual fixed effects, the number of valid observations on which the estimates are based drops significantly. A few women have reported participating in households' agricultural production decisions, fewer report a change in between the two rounds and fewer among them experience outmigration of a member of the household. Fixed effects logistic regression drops majority of the observations due to all positive or all negative outcomes. The estimated logit coefficients are provided in the appendix Table A11.

Table 2-12 suggests that women in households from where men have migrated are significantly more likely to participate in household decisions regarding agricultural production. This is the case for production of crops for household's own consumption, production of crops that are to be sold in the market as well as for decisions regarding livestock farming. Women's participation in these decisions does not appear to be significantly affected by whether or not they receive remittances. The coefficient of the dummy variable that takes value 1 if a woman receives remittances is insignificant for the three types of decisions.

Table 2-12: Binary Dependent Variable: 1. Participates in Food Crop Farming Decisions. 2. Cash Crop Farming Decisions 3. Livestock Farming Decisions

VARIABLES	(1) Food Crop Decisions	(2) Cash Crop Decisions	(3) Livestock Decisions
Household has Migrant Member	1.902** (0.263)	1.709* (0.282)	2.062*** (0.241)
Woman receives Remittance	1.396 (0.256)	1.268 (0.281)	1.132 (0.223)
Constant	0.105*** (0.437)	0.0955*** (0.520)	0.0859*** (0.474)
Observations	1,808	1,622	2,528
Number of person_id	1,709	1,579	2,443
Individual FE	No	No	No
Year FE	Yes	Yes	Yes

Robust Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Woman's age, Woman's Schooling (Binary Variable: Ever attended school=1), Woman's Employment (Binary Variable, Employed=1), Marital Status (Binary Variable. Married=1), Number of Children, Ratio of sons to Daughters, Household Type (Binary Variable, Extended Family-1) Household Size, Ratio of Adult women to men in the household.

Note: The number of observations is different for columns 1, 2 and 3 because estimates are based on responses of women from households engaged in the relevant type of production. So, there are more rural households that raise livestock than those who engage in production for own consumption. And there are more households that engage in own production than those who engage in production for selling in the market.

Now, the effect of migration on the decision-making participation of left behind wives is estimated, that is, equation (2.1) for household agricultural production decisions is estimated. Table 2-13 below shows the odds ratios. The dependent variable for the equation is a binary variable that takes value one if the respondent woman reported that she participates in decisions regarding 1. Food crop production 2. Cash crop production and 3. Livestock farming for columns (1), (2) and (3) of Table 2-13 respectively. The equation is controlled for women’s characteristics including, age, number of years of schooling, employment, number of children, and ratio of sons to daughters and woman’s income. The equation is also controlled for household characteristics including household size, ratio of adult women to men in the household, household type (joint or nuclear family household). The equation is further controlled for individual level random effects, year fixed effects and province fixed effects. The equation also contains interaction of the two explanatory variables that is, migrant wife and household type and women receives remittances and household type.

Table 2-13: Binary Dependent Variable: 1. Participates in Food Crop Farming Decisions. 2. Cash Crop Farming Decisions 3. Livestock Farming Decisions (Full Sample)

VARIABLES	(1) Food Crop Decisions	(2) Cash Crop Decisions	(3) Livestock Decisions
Wife of Migrant (Dummy Variable)	6.706*	8.429*	10.49*
	(1.151)	(1.136)	(1.253)
<i>Migrant Wife * Extended Family</i>	0.256	0.119	0.144
	(1.241)	(1.328)	(1.302)
<i>Migrant Wife * Receives Remittances</i>	2.731	-	1.014
	(1.075)		(1.363)
Woman receives Remittance	0.973	0.927	0.897
	(0.275)	(0.290)	(0.218)
Constant	0.129***	0.105***	0.230***
	(0.0545)	(0.0484)	(0.0852)
Observations	1,808	1,620	2,528
Number of person_id	1,709	1,577	2,443
Individual FE	No	No	No
Year FE	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Woman’s Age, Woman’s Schooling (Binary Variable, Ever been to School=1), Woman’s Employment (Binary Variable, Employed=1), Number of Children, Ratio of Sons to Daughters, Household Type (Binary Variable, Extended Family=1), Ratio of Women to Men in the household, Household Size.

Variables in italics are interaction terms

Results suggest that participation of left-behind wives depends on the household type and on their receipt of remittances. As shown in Table 2-13, left-behind wives of migrants are significantly more likely to participate in household farming decisions in nuclear family households. This is inferred from the magnitude of the odds ratio of the dummy variable migrant wife. The interaction term of migrant wife and household type shows a negative effect on the participation of migrant wife in household decisions in extended family households as the odds ratio is less than one. The estimated logistic coefficients of are shown in appendix Table A12.

Round 4 of the survey was conducted in a sub-sample of the panel. That means that the results presented Table 2-13 are based on an unbalanced panel. Upon restricting the panel to three districts included in round 4, it is observed that very few left-behind wives of migrants receive remittances or live in nuclear family households. Two districts of the three included in round 4 of the survey are in the province of Khyber Pakhtunkhwa. Women in the province of Khyber Pakhtunkhwa face restrictive norms more than women in Punjab. It can, therefore, be rationalized that it is less likely that women are left behind on their own by their migrant husbands.

2.5.3 Migration and Women's Work

Table 2-14 shows the effect of migration of men on the number of hours spent in paid work, domestic work, and own work by women in the left-behind household. The estimated coefficients are controlled for women's characteristics including age, education, marital status, employment, number of children under 11 and number of children aged 11-16. The estimates are further controlled for household characteristics including household size, ratio of adult women to men in the household, household type (extended or nuclear family household) and household annual income per person. For the estimates of the effect on number of hours in paid work, the average wage of women in agriculture is included as an additional explanatory variable. The equation is controlled for individual fixed effects and year fixed effects. Survey weights from round 1 are used as the panel is unbalanced. Standard errors are clustered at the household level. The results suggest that women in left-behind migrant households do not experience a statistically significant change in the number of hours spent in paid work and domestic work. The results fail to suggest that women in left behind households experience a statistically significant different number of hours of domestic and paid work in left-behind household. The results, however, do suggest that women in left-behind households decrease the number of hours spent in own agricultural or non-agricultural work. It could be that male migrants leave their agricultural work with hired workers or make tenancy arrangements. This was observed by Lefebvre (1999) that migrants leave their farming activity either with a trusted family member (like brother or cousin) or make tenancy arrangements before leaving. This could mean that if women worked on their family farms prior to the migration of a man from the household. After the departure of a man, own farming is left with someone else and women do not spent time on own farm activity.

Table 2-14 Dependent Variable: Number of Hours per Week Spent in Domestic Work, Own Farm and Non-farm enterprise and Paid Work

VARIABLES	(1) Paid Work	(2) Domestic Work	(3) Own Work
Migrant Household (Left-Behind Household)	-0.671 (0.545)	-3.083 (2.056)	-1.166* (0.657)
Woman Receives Remittances	-6.370*** (1.192)	-5.484** (2.311)	-1.338 (0.824)
Constant	-14.66 (25.04)	60.57 (56.46)	25.64 (18.83)
Observations	7,452	7,452	7,452
R-squared	0.102	0.044	0.017
Number of person_id	3,958	3,958	3,958
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household type (Binary Variable, Joint Family Household), Woman's Age, Number of Children below 10 years of age, Number of Children between ages 10 and 16, Household Income Quintile (Quintiles based on household's per capita income other than that earned by women), Household size, Ratio of Adult Women to Men in the household.

What interesting to note in Table 2-14 is that women who receive remittances spend fewer hours in paid as well as domestic work. Now, women's participation in paid work, especially in the rural areas depends on the overall income levels of their households. Women are more likely to engage in paid work if they come from low income households. This work is more likely to be waged work in the agriculture sector. If the income levels of households improve, for example due to receipt of remittances, women may withdraw from participating in waged work. That could explain the fewer hours spent in paid work by women who receive remittances. Women's domestic work can also ease due to remittances if the remittances are spent on technology that eases domestic tasks. Women who receive remittances may use the money to buy washing machines or electric irons that may reduce the number of hours spent by women in domestic work. The full estimated equation is presented in appendix Table A13.

The results in Table 2-14 are based on an unbalanced panel, as the number of observations in round 4 are lower than those in rounds 1, 2 and 3. Although the estimates have been adjusted for the sampling weights assigned to each household. In order to test the reliability of the estimates,

equation 2.2a is estimated after restricting the sample to a balanced panel, that is, restricting the sample to the districts surveyed in round 4. The results are shown below (Table 2-15). The results in Table 2-15 corroborate the results of unbalanced panel regarding women’s work on own work and paid work. The full estimated equation is presented in appendix Table A14.

Table 2-15 Dependent Variable: Number of Hours per Week Spent in Domestic Work, Own Farm and Non-farm enterprise and Paid Work (Balanced Panel)

VARIABLES	(1) Paid Work	(2) Domestic Work	(3) Own Work
Migrant Household	-0.558 (0.671)	-1.289 (2.725)	-2.282*** (0.795)
Woman receives Remittances, Binary Variable	-6.580** (2.635)	0.0311 (7.698)	-2.439 (1.980)
Constant	-12.39 (23.16)	49.87 (52.18)	20.64 (18.21)
Observations	1,658	1,658	1,658
R-squared	0.113	0.129	0.057
Number of person_id	813	813	813
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household type (Binary Variable, Joint Family Household), Woman’s Age, Number of Children below 10 years of age, Number of Children between ages 10 and 16, Household Income Quintile (Quintiles based on household’s per capita income other than that earned by women), Household size, Ratio of Adult Women to Men in the household.

Now the effect of migration of men on the work of left-behind wives is assessed. Table 2-16 shows the results of estimation of equation (2.2). The dependent variable for the equation is the number of hours worked by a woman in paid work, domestic work, and work on household agricultural or non-agricultural entrepreneurial activity. The results presented in Table 2-16 are controlled for individual and year fixed effects. Individual level control variables in the equation include woman’s age, the number of children aged 0-10, number of children aged 11-16 and the ratio of daughters to sons in the woman’s children. Variables capturing household characteristics added as control variables in the equation include household size, household type (extended or nuclear family), ratio of adult women to men in the household and household income quintile

based on households' annual per person income. Two interaction terms, migrant wife and household type and women receiving remittances and household type are also included in all estimates. Interaction of three explanatory variables, migrant wife, receives remittances and household type is also included to capture the effect of men's migration on the work of their wives left behind, who receive remittances in extended family households. For estimation of the impacts on women's participation in paid work (Colum 1, Table 2-16) the village average wage in agricultural work is included to capture the opportunity cost of not working. Sampling weights from round 1 are included in all estimates.

Table 2-16: Dependent Variable: Number of Hours per Week Spent in Domestic Work, Own Farm and Non-farm enterprise and Paid Work

VARIABLES	(1) Paid Activity	(2) Domestic Activity	(3) Own Activity
Migrant Wife	4.064*** (0.927)	-7.573 (7.280)	-1.323 (3.926)
Woman receives Remittances, Binary Variable	-2.175* (1.282)	-3.332 (2.040)	-0.221 (0.639)
<i>Migrant Wife * Extended Family</i>	-1.763 (1.909)	6.362 (8.733)	1.156 (4.228)
<i>Migrant Wife * Receives Remittances</i>	-0.391 (2.255)	-6.504 (12.19)	-0.728 (4.393)
<i>Migrant Wife * Receives Remittance * Extended Family</i>	3.258 (2.656)	-16.55 (17.31)	0.0718 (4.863)
Constant	114.3*** (11.95)	90.06* (51.36)	32.63* (18.18)
Observations	5,289	7,149	7,149
R-squared	0.064	0.048	0.014
Number of person_id	3,164	3,887	3,887
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household type (Binary Variable, Joint Family Household), Woman's Age, Number of Children below 10 years of age, Number of Children between ages 10 and 16, Household Income Quintile (Quintiles based on household's per capita income other than that earned by women), Household size, Ratio of Adult Women to Men in the household

Variables in italics are interaction terms

In column 1 of Table 2-16, the dependent variable is number of hours per week spent by women in paid work. The estimated coefficient of the binary variable "migrant wife" is positive

and significant, suggesting that left behind women who are the wives of migrants in nuclear family households spend significantly more time in paid work. These left behind wives of migrant spend on average 4 more hours per week in paid work. On the other hand, women who report receiving remittances spend less hours in paid work. This is suggested by a negative and significant coefficient of the binary variable “woman receives remittances”. These women, (who may or may not be left behind wives of migrants, as explained earlier) spend on average 2 hours less per week in paid work.

In column 2 of Table 2-16, the dependent variable is the number of hours per week spent by a woman in domestic tasks. There do not appear to be any significant effects on the hours of work spent in domestic tasks by women. Column 3 of Table 2-16 shows the estimates for equation 2.2 with the dependent variable the number of hours per week worked by the individual on households’ own agriculture or non-agricultural business activity. The number of hours worked by women do not appear to be significantly affected if they receive remittances or are left behind by migrants.

The sample size for the results presented in Table 2-16 is different for the three dependent variables. That is, the sample size for the dependent variable number of hours spent in paid work is considerably smaller than the sample size for the other two dependent variables. The reason is that an additional explanatory variable, the village average wage per day of paid agricultural work is added to capture the opportunity cost of women not working as wage labourers. This average wage per day is calculated from the reported wages received by women who had participated in paid work in the year preceding the survey. Women in villages who did not participate the paid agricultural work, the data points are replaced by the average wage per day at the village level³⁸. However, this data is not available for round 4 of the survey. Furthermore, in areas of very low participation of women in paid agricultural work, the village average or average wages at bigger administrative units could not be calculated from the dataset. Hence, the sample size used to estimate the effects on number of hours spent by women in paid work is smaller than the sample size used for other tasks.

However, to assess the reliability of the results presented in Table 2-16, two things are done. First, equation 2.2 is estimated for all the dependent variables using the sample size restricted

³⁸ For villages where no women reported participating in wage work, average wage for the next administrative unit has been used.

to smallest sample. That is, the sample used for estimating the effect on hours spent in paid work. These results are in Table 2-17.

Table 2-17: Number of Hours per Week Spent in Domestic Work, Own Farm and Non-farm enterprise and Paid Work (Small Sample)

VARIABLES	(1) Paid Activity	(2) Domestic Activity	(3) Own Activity
Migrant Wife	4.064*** (0.927)	-9.053 (7.235)	2.127 (11.19)
Woman receives Remittances, Binary Variable	-2.175* (1.282)	-2.523 (2.398)	-0.750 (0.829)
<i>Migrant Wife * Extended Family</i>	-1.763 (1.909)	4.745 (8.655)	-2.695 (11.48)
<i>Migrant Wife * Receives Remittances</i>	-0.391 (2.255)	-18.44 (11.81)	-10.31 (11.62)
<i>Migrant Wife * Receives Remittance * Extended Family</i>	3.258 (2.656)	-9.844 (18.17)	12.07 (11.90)
Constant	114.3*** (11.95)	241.1*** (25.01)	28.97*** (8.055)
Observations	5,289	5,289	5,289
R-squared	0.064	0.064	0.016
Number of person_id	3,164	3,164	3,164
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Control Variables: Household type (Binary Variable, Joint Family Household), Woman's Age, Number of Children below 10 years of age, Number of Children between ages 10 and 16, Household Income Quintile (Quintiles based on household's per capita income other than that earned by women), Household size, Ratio of Adult Women to Men in the household
Variables in italics are interaction terms

Second, data on the average monthly payments of skilled women's workers in Agriculture, Fisheries and Forestry is used to fill the missing data points in the panel. This data is retrieved from the Labour Force Survey of Pakistan (2012-13, 2013-14, 2014-15 and 2017-18). The Labour Force Survey reports the average monthly payments of workers in various industrial/occupational categories for both the sexes in the rural and the urban areas at the provincial level. The average

payments of women in the category Agriculture, Fisheries and Forestry for rural areas in each of the province is used to fill the gaps in the panel³⁹. These results are in Table 2-18.

Table 2-18: Number of Hours per Week Spent in Domestic Work, Own Farm and Non-farm enterprise and Paid Work (Full Sample)

VARIABLES	(1) Paid Activity	(2) Domestic Activity	(3) Own Activity
Migrant Wife	4.217* (2.537)	-13.38** (5.206)	-2.072 (5.204)
Woman receives Remittances, Binary Variable	-2.141* (1.223)	-4.436* (2.550)	-1.151 (0.842)
<i>Migrant Wife * Extended Family</i>	-2.316 (2.827)	13.24* (7.062)	1.931 (5.667)
<i>Migrant Wife * Receives Remittances</i>	0.215 (3.224)	-24.67** (9.797)	-2.375 (5.792)
<i>Migrant Wife * Receives Remittance * Extended Family</i>	3.353 (3.222)	-10.38 (16.46)	3.321 (6.144)
Constant	-6.632 (30.23)	79.29 (63.37)	30.15 (19.51)
Observations	6,384	6,384	6,384
R-squared	0.056	0.069	0.020
Number of person_id	3,834	3,834	3,834
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 <i>Control Variables:</i> Household type (Binary Variable, Joint Family Household), Woman's Age, Number of Children below 10 years of age, Number of Children between ages 10 and 16, Household Income Quintile (Quintiles based on household's per capita income other than that earned by women), Household size, Ratio of Adult Women to Men in the household <i>Variables in italics are interaction terms</i>			

The results in Table 2-18 corroborate the results presented in Table 2-16 and Table 2-17 regarding the effect of migration of men on the number of hours spent by left-behind migrant wives in paid work. That is, left-behind migrant wives in nuclear family households spend more hours in paid work. However, Table 2-18 also suggests that left-behind wives of migrants in nuclear family households spend fewer hours in domestic work and as opposed to left-behind migrant wives in extended family households spend more time in domestic work. Also, migrant wives in nuclear

³⁹ The Labour Force Survey has not reported the average rural wage of women in this category in the Annual Report of 2017-18, hence the data has been left as missing.

family households who receive remittances spend even fewer hours in domestic work than those who do not receive remittances. The full estimated equations of the results shown in Table 2-16, Table 2-17 and Table 2-18 are provided in the appendix (Table A15, A16 and A17)

2.6 Discussion

The aim of this chapter was to assess the effect of migration of men on lives of women left behind in the rural areas. Aspects of women's lives focused in this analysis are their participation in household decisions and their work burden. The effect of migration of men from the households differ for different women in the left behind households. That is, the effects are different for the left-behind wife and for other women in the household. Furthermore, migration of men has a different impact on the lives of women than that of the effect of remittances. This is true for both left-behind women and for left-behind migrant wives.

As shown in Table 2-10 and Table 2-11, women's participation in households' expenditure decisions is influenced by women's receipt of remittances. This is true for left-behind wives as well for other women who receive remittances. It has been emphasized by earlier studies that the impact of migration of household members on the left-behind household should be separated from the impact of remittance receipts (Binzel & Assaad, 2011). The dataset used in this study allowed this differentiation. It has recorded the migration episodes of family members as well as the receipt of remittances by the households. Furthermore, respondents were asked to state which member of the household received these remittances. The data showed that many left behind migrant wives do not directly receive remittances. On the other hand, women living in non-migrant households also reported receiving remittances. This allowed to disentangle the effect of men's migration from the effect of remittances. That women who reported receiving remittances are significantly more likely to participate in households' expenditure decisions is intuitive. Women who receive remittance income directly are more in control of that income and are in a position to influence household expenditures (Acosta, 2006; Mendola & Carletto, 2012).

Left-behind migrant wives experience changed participation in household decisions, but the effect is contingent on the living arrangement of the left-behind household. As shown in Table 2-13, left-behind wives of migrants report increased participation in decisions regarding households production decisions in nuclear family households. These results are in line with what Rashid (2013) has observed in her work on Bangladeshi left-behind migrant wives. Left behind wives of migrants in households that engage in own agricultural activities appear to take on the responsibility of these activities. This is visible from the results presented in Table 2-13.

With regards to women's work, it appears that remittances received by women can reduce their domestic work. This is evidenced in Table 2-14 and Table 2-18 where women who receive remittances appear to spend fewer hours per week in domestic work. Women recipients of remittances may invest in labour saving technology like washing machines and hence spend less time in domestic activities (Siegman, 2010). An interesting result in Table 2-16, Table 2-17 and Table 2-18 is that left-behind migrant wives' hours worked in paid work. Left-behind migrant wives spend more time in paid work. The reason for this could be that left-behind wives have greater freedom to pursue paid work or left behind wives are forced to take up income generating activity if their husbands are unable to send in remittances following migration.

3 Migration of Men and Children Left Behind: Education Expenditures, Work and Gender Equality

Summary: In this chapter, the impact of migration of men on children in left-behind households is analyzed. The focus of the analysis is households' expenditure on children's education and children's work burden. Furthermore, it is tested if migration of men from households reduces gender inequality in households' education expenditures. This is assessed by estimating the effect of migration on the share of households' education expenditures spent on education of girls. Moreover, due to the presence of girls out-of-school, the chapter analyses if migrant households have higher per girl education expenditures corrected for household selection into sending children to school. Children's work includes number of hours spent by children in paid work, domestic work and households' own agriculture and non-agricultural work. Two categories of the explanatory variable are considered, temporary and permanent migration of men for employment allowing to separate the effects for left-behind households from the effects of migration. Moreover, the effect of households' receipt of remittances is separated from the effect of both types of migration. The effect of migration on households' education expenditures, share of households' education expenditures spent on girls and children's work burden are estimated with household and year fixed effects to reduce endogeneity. The results of the analysis do not suggest that migrant households have significantly different expenditures expended on children's education. This is true for both types of migration. There is some evidence that receiving remittances increases households' expenditures on children's education. However, analysis of households' share of education expenditures spent on education of girls suggests that left-behind households increase this share by up to 14 percent than the average share spent on girls in rural households. This is not the case for households with temporary migrants. The results of Heckman Selection model show that, left-behind households are more likely to enroll their girl children in school. These households also have higher per girl education expenditures. Results also suggest that children in left-behind households spend fewer hours per week in paid work. No significant effects on the number of hours spent by children in domestic work are established.

3.1 Introduction

Migration can affect left-behind children's work burden and their education through various channels. First, this type of migration is characterized by economic ties of the left-behind household with the migrant(s), manifesting, predominantly, in receipt of remittances by the left-behind household. Households' investment in children's education may increase due to receipt of remittances that, by increasing incomes, allows households to invest more in education of children.

Migration of household members can also affect education of the children through changes in the perceptions of household decision makers regarding education (Giannelli, & Mangiavacchi, 2010). Migration of family members exposes households to values and norms different from their own (Fargues, 2006). This exposure can affect household members' attitudes, including that towards education of children. Migration experiences of family members may also affect children's own aspirations regarding education (Kandel & Kao, 2000). Children's education can also be affected by migration of members through changes in the household decision makers (Antman, 2011; Antman, 2015). The new decision-makers of the household may have different preferences regarding children's education thereby affecting education investment, education outcomes or both. This means that migration can affect households' attitudes towards children's education in the absence of remittances as well as due to receipt of remittances. Households that previously did not send their children to school may start sending children to school or households that sent their children to school may increase expenditures on children's schooling after migration.

Migration has also been noted to change incentives to educate children in migrant sending households. If migration is a way to achieve improved socio-economic status, and higher skills are positively associated with the likelihood to migrate, households are encouraged to invest in children's education. On the other hand, if higher skills are not associated with likelihood to migrate, then households' incentives to educate their children are not changed (Boucher, Stark and Taylor, 2009). Depending on the perceived relationship between migration and education, households may be encouraged to send their children to school if they previously did not. This mechanism also implies that migration can affect households' expenditure on the education of their children in the absence of remittances.

Migration of a household member also causes loss of household labour. While the migrant is away, left-behind members, including children may take up tasks to compensate for this loss of labour by engaging in domestic or waged work (Jingzhong & Lu, 2011; Chang, Dong & MacPhail, 2011). Children in left-behind households may also be forced to engage in waged work if households do not receive any remittances but have experienced loss of household income due to the absence of a member who was employed prior to migrating (Mendola, 2012). Migration of a member, therefore, may have a direct effect on children's work. An increased burden of work on children could mean that migration is followed by dropping out of children from school. Conversely, migration may also reduce children's work due to household's decision makers' changed attitude towards education of children. Households' greater focus on education of children, due to the change in decision makers or change in the attitude of decision makers, may manifest in discouragement of children to engage in work.

Children's education as well as children's work burden can be affected by migration. This effect can be expected in the absence of remittances as well as due to remittances. Children's education can improve due to migration of a member due to increased expenditure on education by households due to remittances, or transfer of norms or incentive effects. Similarly, children's work can reduce due to remittances or other effects. Moreover, these effects are expected to differ for left-behind households and for households with a temporary migrant. That is, these effects can be expected to be different for children when the migrant is away from the effects on children when the migrant has returned or migrates only temporarily. Transfer of norms and incentive effects can be expected to operate through all types of migration, that is, for left-behind households as well as for households from where a member has had migration experience. However, effect of migration due to changes in household decision makers can be expected to be more pronounced when the migrant is away.

These effects can also be different for boys and girls. In contexts where high disparity of education of boys and girls exists, the differential effects of migration on education and work of boys and girls assumes salience. In these contexts, if migration positively selects on levels of education and level of education of boys is higher than that of girls, boys will be more likely to migrate. Higher probability of migration of boys will incentivize migrant sending households to invest in the education of boys thereby exacerbating disparity between boys and girls. On the other

hand, migration from areas of disparity between girls and boys to areas with low disparity can also lead to a diffusion of gender norms of the host areas into the sending areas. This can lead households to invest in education of girls. The overall effect could be of reduction of disparities between education of boys and girls or an exacerbation of this disparity.

Empirical research on the effect of migration and remittances on education of children in the left behind households and in migrant sending communities provides mixed results (Nguyen, Yeoh & Toyota, 2006; Adams, 2011; Ye et al, 2013; Antman, 2018). Studies note that the effect of migration on education of children in left-behind households and those in migrant sending communities are different for boys and girls (Mansuri, 2006a) and are specific to contexts.

This chapter, therefore, attempts to assess the effects of migration on households' expenditure on the education of boys and girls. It also attempts to estimate the effect the migration on gender equality in households' expenditure on the education of children by estimating the effect of migration on households' share of expenditure on girls' education (henceforth called Girls' share). An increase in girls' share is assumed to reduce inequality of education between boys and girls. Additionally, the effect of migration on households' expenditure on schooling per girl in the household is estimated after tackling selection of households into sending girls to school using the Heckman Selection Model. Furthermore, it analyses the effect of migration on the work burden of boys and girls in the left-behind households. To summarize, the effects of migration on:

1. Households' expenditure on children's education
2. Households' share of education expenditure spent on education of girls (girls' share)
3. Number of hours per week spent by children in a. Paid Work, b. Domestic work c) Households' own agricultural and non-agricultural work are estimated.

These effects are estimated for households that have a migrant member who is away (left-behind households) and for households who have had a temporary migrant member who has returned to the household. In this way, an attempt is made to delineate the mechanism through which children are affected by migration of household members. As noted earlier, incentive effects and changes in perceptions can be expected to operate through both kinds of migration

experiences. However, the effects due to change in household decision makers and due to absence are expected to be more pronounced for left-behind households. For ease of differentiation, these two categories of migrant households are called households with a permanent migrant (or left-behind household) and households with temporary migrant.

In the following sections, studies on the effects of migration on children's education and work burden are reviewed. Following the literature review, data used for the analysis is described. An estimation strategy is proposed in the section following the data description. Thereafter the results and discussion of the analysis are presented.

3.2 Review of Literature

Empirical literature that has analysed the effect of migration on education of children in the left-behind households and communities has observed different impacts of migration on girls and boys. This body of work remains inconclusive on the effect of migration on education of children in the left-behind household. Research has also analysed the impact of remittances on children in the remittance recipient households. Many of these studies do not differentiate between the effects of migration with that of remittances. Impact of remittances on education of children in areas of migrant origin has been studied both at the macro level (country level) and at the micro level (household level)⁴⁰. Macro level studies have analysed the effect of remittances on countries' human capital levels⁴¹. These studies are reviewed below.

Calero, Bedi, & Sparrow (2009) have analysed the effect of remittances on school enrollment and child labour in Ecuador. They estimate the effect on school enrollment, enrollment in private schools and participation in domestic and non-domestic work. The explanatory variable is the per capita remittances per month received by households. Using Instrumental Variables (IVs), they find that remittances increase school enrollment among children aged 10-17, and this effect is larger for girls. They also find that remittances increase private enrollment that is taken as indicative of improved quality of education.

Acosta (2011) reports that remittances do not significantly affect children's schooling in El Salvador. The results of this study suggest that remittances reduce children's participation in wage labour but are associated with their higher participation in housework. These effects are found to be different for boys and girls. On average, girls' benefit from remittances in terms of schooling.

Alcaraz, Chiquiar, & Salcedo (2012) report that reduction in remittances in remittance recipient households, decreases school attendance and increases waged work of children in Mexico. Although the sex of the child is included as a control variable in their analysis, they have not estimated the effects for boys and girls separately nor have they included any interaction terms

⁴⁰ Boucher et al (2009) analyse the effect of migration at the community level that can be considered a meso level analysis.

⁴¹ Given the analysis of this paper is at the micro (household) level, previous macro level studies are not extensively reviewed, only a few latest and methodologically sound studies are mentioned.

for sex of the child. The paper does not say if boys and girls in left-behind households are affected differently by the decrease in household remittances.

The studies mentioned above have dealt with endogeneity of remittance receipts. Calero, Bedi and Sparrow (2009) use Instrumental Variables (IVs). Acosta (2011) uses Propensity Score Matching and IVs to tackle self-selection and endogeneity of migration. Alcaraz, Chiquiar, & Salcedo (2012) employ difference in difference technique along with IVs to tackle endogeneity.

Lopez-Cordova et al, (2005) have analyzed the effect of remittances on municipality level welfare indicators including child illiteracy and school enrollment in Mexico. The study uses instrumental variables to tackle endogeneity of migration. The study has not disaggregated the effects by sex. The study finds that remittances reduce child illiteracy and increase schooling for five-year olds but it negatively affects enrolment of 7-14 year olds. The authors note that that remittances may have disincentive effect that leads to a negative observed association of migration with enrolment at post-primary levels.

Vogel & Korinek (2012) look at the impact of remittances on educational expenditures on girls and boys using cross sectional data from Nepal. Their results suggest that remittances are positively associated with increase in per boy education expenditures and not with per girl education expenditures. The study however has not tackled endogeneity of migration and households' schooling expenditures. Similarly, other studies, including Edwards and Ureta (2003), Hanson and Woodruff (2003), Brown, Connell, Jimenez Soto & Leves (2006) and Pickbourn (2015), have estimated the effect of remittances on children's education but these studies have not tackled endogeneity of remittances (Adams, 2011; Brown & Jimenez Soto, 2015).

Macro level studies have also estimated the effect of remittances on human capital in receiving countries with mixed results. Azizi (2018) uses data from 122 developing countries and finds that tertiary enrollment and private school enrollment are positively affected by remittances. The results of this study suggest that girls receive larger proportion of households' investments in education in response to receipt of remittances as girls' enrollment and completion rates are affected more by remittances. This result points to the potential of remittances in reducing inequality of education between boys and girls.

Remittances, by easing households' liquidity constraints, are only one mechanism through which migration can impact education of children in the left-behind household. Migration can affect education of children in the left-behind household through other channels as well. As mentioned in the introduction, these channels include children's participation in domestic and waged work to compensate for loss of household labour to migration, changes in attitudes towards education, changes in incentives for education and changes in norms regarding education.

The contradictory effects of migration on education of children in the left-behind households found in research perhaps arise because the several channels through which children's education can be affected. The net effect depends on the relative strength of these effects. These effects are also dependent on the research context (Ballard, 2005). For example, if remittances ease households' liquidity constraints and allow households to invest in children's education, then this effect will only manifest if the area in which households receive remittances have access to educational institutions. In regions where households do not have access to schools or institutions of higher education, the relaxation of budget constraints through remittances may not be enough to improve children's education levels. As another example, if migration positively selects highly skilled individuals, migration may encourage education in migrant sending areas, however, if skilled individuals are not positively selected into migration, higher education may be discouraged (Boucher et al, 2009).

Kuhn, (2006) uses cross sectional data of households in Bangladesh and applies OLS to suggest a positive association of migration of a family member (father or brother) on children's schooling. The author has not commented on any differential finding for girls and boys. As these results are based on cross sectional observations and OLS, these can only be treated as associative and not causative.

Giannelli, & Mangiavacchi (2010) for Albania find that the migration of fathers negatively affects left-behind children's schooling and this effect is more pronounced for girls. They suggest that migration of a father leaves household decision making with another male relative in the family who is likely to have conservative attitudes towards girls' education which may be the reason behind strong negative effect on girls. The study has not tackled endogeneity of migration; however, they use retrospective migration episodes and select children who have had experienced

migration episodes of their parents and by estimating the effect of length of parental migration on children's outcomes the authors contend that endogeneity is tackled.

Meyerhoefer & Chen (2011) using IVs also suggest that girl children in the left-behind in rural households are more likely to lag in school. They interpret this result as added burden of work on girl children. Antman (2011a), however, for households in Mexico found that left behind households spend higher share of expenditures on girls when there is a migrant. The study has estimated the effects on expenditure share of girls in clothing and education expenditures of the household, however, the study only finds significant effects on clothing expenditures. She attributes these changes to changes in the decision-making roles of men and women during and after migration.

McKenzie & Rapoport (2011) for Mexico find negative effects of migration on schooling of both girls and boys. The magnitude of this negative effect is found to be greater for girls than for boys. The authors suggest that the results capture the combine effects of remittances, parental absence, and changes in incentive for education. They report that girls face higher burden of domestic work due to parental absence.

Lu (2012) reports that children in left behind households complete more years of schooling and these effects are greater for girl children. However, the study finds that these positive effects are only observed if a member other than the children's parent migrates and not observed for left behind children when a parent or both parents have migrated.

Cortes (2013) estimates the effect of absence of mother due to migration on school attainment of children left behind in the Philippines. She finds that children are significantly more likely to be behind or to have dropped out if the mother has migrated. She finds that boys are affected more by the mother's absence than girls.

Zhou, Murphy & Tao (2014) estimate the effect of parental migration on test scores of left-behind children in China. The study finds that boys' education is negatively affected by the absence of their parents. Children whose both parents migrate are affected, children whose father only migrate are not affected.

Some of these studies have tackled endogeneity of migration; Zhou et al (2014) use propensity score matching (PSM), McKenzie & Rapoport (2011) and Cortes (2013) employ IVs

and IVs interacted with fixed effects respectively, and Lu (2012) has used longitudinal data with fixed effects.

Zhou et al (2015) compare health and educational outcomes of left-behind children in migrant households with those in non-migrant households in China and find no difference in the health, nutritional status, and education of these different groups of children. However, they acknowledge that migrants and non-migrants may be different that has not been tackled in the research.

Migration affects members of the left-behind household including children. Moreover, households in migrant sending areas from where no member has migrated may also be affected by migration. Education of children in all households in migrant sending communities has been theorised and evidenced to be affected. Migrant sending areas may experience a change in perception regarding education. Education may become highly prized if migration is associated with high levels of education and is seen as a passage to higher socio-economic status. Education may become less desirable in migrant sending areas if migration is a passage to higher socio-economic status but is not associated with higher levels of education. Boucher et al., (2009) find that positive selection of educated individuals into internal migration has positive incentive effects on the education levels in the village while the lack of association of migration to the United States with high skills discourages households from investing in education.

The incentive effect of migration on education levels is theorized and tested in the brain drain/brain gain literature (Brown & Jimenez-Soto, 2015). Macro level empirical studies point out that emigration of highly skilled individuals from low income countries through its incentive effects leads to an accumulation of greater human capital (Beine, Docquier & Oden-Defoort, 2011; Di Maria & Lazarova, 2012).

Continuing the work of the studies cited above, this chapter contributes to literature on the subject in the following ways. First, longitudinal data allows the inclusion of unit level fixed effects thereby controlling for endogeneity. Longitudinal data allows to compare the same households before and after migration, therefore, post migration change in households can be attributed to migration more reliably. Furthermore, year fixed effects control for unobserved shocks/events that may have caused the change in observed outcomes. Moreover, households with a permanent migrant (left-behind households) and those with temporary migrants are differentiated as well as

households that receive remittances. In addition to recording migration episodes of the members of the households, the dataset also records the reported receipt of remittances by households. After analysing the effect of migration on households' expenditure on schooling of girls and boys, the effect of migration on girls' share is estimated. The analysis of the effect of migration on girls' share informs on the effect of migration on gender equality within households. The dataset also allows to estimate the effect of migration on the work burden of both boys and girls in the left-behind households. The data also allows to disaggregate the effect of migration on children's time spent in paid work, domestic work and work on own farm and non-farm activity.

3.3 Data and Methodology

The dataset used for the estimation of above-mentioned relationships has been introduced in the first chapter. This data is used to estimate the effect of migration of men for employment, on households' expenditure on children's schooling, share of households' education expenditure spent on girls and the number of hours spent by children in paid work, domestic work and work on household's own agricultural and non-agricultural activity. To estimate these effects, unit fixed effects regression is used with added year fixed effects. Additionally, the effect of migration on household expenditure on girls' education is also estimated after tackling selection into sending girls to school using the Heckman Selection Model.

Data on schooling and education of all children of the household is available. Households' expenditure on schooling and school related expenses on each child attending school at the time of the survey are also reported. These expenditures include 1. School fee 2. Expenditures on School books and stationery and 3. Expenditure on School Uniform. Households' expenditure on schooling of children and households' share of expenditures on schooling of girls is calculated from reported expenditures on school fee, schoolbooks and stationery and school uniform. To calculate household's total education expenditure, expenditure incurred by the household on the above-mentioned categories is added for all children in the household.

The share of education expenditures spent on the schooling of girl children are calculated as follows. First, expenditures incurred by the household for all girls of the school going age are calculated. All children aged 5-17 are considered of the school going age. Children of the school age who were not attending school at the time of the survey are considered having zero expenditures. This expenditure on girls is then divided by the number of school aged girls in the household to arrive at households per girl schooling expenditure. Then, households' expenditures on schooling of all children is calculated by adding the expenditure on school fee, schoolbooks and stationery and school uniform incurred on all children of the school age attending school at the time of the survey. These expenditures are then divided by the number of children of the school age in the household to arrive at the per child schooling expenditure of the household. Then the per girl expenditures are divided by the per child expenditure to arrive at the share of education that households spend on girls. In this way, the share of expenditures spent on girl children is adjusted for the number of boys and girls in the household. Households have reported financial aid

received by children for education. The amount of aid received by each child is subtracted from the expenditure incurred by the household on that child for a realistic approximation of households' own expenditures on children's education. Households' education expenditures per child and girls' and boys' shares in education expenditures in both migrant and non-migrant households are shown in Table 3-1.

Table 3-1: Share of Households' Expenditure per Child spent on Girls and Expenditures per Child

	Non-Migrant Household ¹	Migrant Household (P ²)	Migrant Household (T ³)
Education Expenditures per Child, per year	2577** (1872)	3662** (125)	3186 (61)
Per girl, per year	2802 (1341)	3578 (99)	2533 (42)
Per boy, per year	3447** (1731)	4726** (117)	4853 (59)
Shares in Education Expenditure			
Girls	0.71 (1826)	0.76 (124)	.61 (61)
Boys	1.33 (1826)	1.29 (124)	1.4 (61)

1. Households that did not have any permanent or temporary migrants during the year preceding the survey.
2,3. P refers to households with Permanent Migrant (left behind households) and T refers to households with temporary migrant.
Note: The number of observations is shown in the parentheses. The comparisons are based on the data points of these variables corresponding to positive number of both male and female children of the school age present in the household at that time period. That is, .71 is the average girls' share of educational expenditure of households that had both male and female children of the school age group at that time.
The asterisks suggest if the average of the category is significantly different from the average for all non-migrant households.
*** p<0.01, ** p<0.05, * p<0.1

The first row of Table 3-1 shows the average per child education expenditures of these households. Households with a permanent migrant (left-behind households) have significantly higher average per child education expenditure than households without migrants. There appear to be no significant differences in the average per child expenditure of households with temporary migrants. Table 3-1 also shows average per girl and per boy expenditures of households. These averages show that girls receive lower expenditures on their education than boys. This is true for non-migrant and migrant households of both types. However, the average per girl expenditure of left-behind households are higher than the per girl expenditure of non-migrant households. Moreover, the per boy expenditure of households with a permanent migrant are significantly higher than the per boy expenditure of non-migrant households. Table 3-1 also suggests that girls' shares are smaller than boys' share for both migrant and non-migrant households. As these shares

are calculated by dividing households per girl (boy) education expenditure by the per child expenditure, in a situation of equality, girls' and boys' shares should be 1. That is, household's expenditure per girl should be equal to household's expenditure per child. That would mean that the girl child receives what the average child receives, however, the average share for girls is less than 1 and the average share for boys is greater than 1. This shows that on average, households spend less on their girls' education as compared to boys. This girls' share is higher for households with a permanent migrant, but this difference is not statistically significant.

A word on the different number of observations used for this comparison is due here. The number of observations corresponding to households with positive number of boys and girls of the school age is 2703. Out of these observations, 645 have missing or zero data on school expenditures because, either all children were out of school or there were zero expenditures of the household on children's schooling. We are left with 2058 observations to compare migrant and non-migrant households. The number of observations in different rows of Table 3-1 is different. In the first three rows, averages are based on actual expenditures incurred by household, keeping the observations on children who were out of school as missing. So, the number of observations 1341 (second row, first column) corresponds to non-migrant households that had girl children at the time of the survey who were attending school and had positive educational expenditures incurred on their education by the household. The number of observations is different from 1731 (second row, first column) because out of the observations corresponding to positive number of girls and boys of the school age, a larger number (1341 for girls, 1731 for boys) have positive expenditures on schooling of boys than on girls.

Girls' and boys' shares have been calculated by assuming zero expenditures on children of the school going age who were not attending school. So, for a household with girls of the school going age not attending school but boys of the school going age attending school are said to have 0 share for the education of girls. The share of girls and boys are also only compared for households that had both girls and boys of the school age group at the time of the survey.

The second part of the analysis estimates the effect of migration on children's work in the left-behind household. Time spent by children aged 5-15 in various tasks⁴² has been reported by

⁴² Household expenditures and girls' shares are calculated considering all children aged 5-17 in the household as children of the school age. In the analysis of work, children aged 5-15 are considered. In the time use module of the PRHPS, the female respondent was required to report the time

the primary female respondent from each household⁴³. Analogous to the indicators of women’s work in the previous chapter, children’s work is calculated from the number of hours spent by children in paid work, domestic work, and own agricultural and non-agricultural enterprise. Paid work includes agricultural or non-agricultural activity for which the child received payment in cash or in kind. Domestic work includes cooking, cleaning the house, washing utensils, care of children and the elderly in the home, collecting water for household consumption, collecting fuelwood for household use and fodder for own cattle, washing laundry of household members and ironing, sewing of clothes for household members, preparing dung cakes for household use, shopping for the household and maintenance and repair of house. Own work means work on the household farm or non-farm enterprise. Adding all the categories gives the number of hours spent by children per week in non-leisure activity. Table 3-2 below shows the number of hours per week spent in all non-leisure work by children aged (5-15) in migrant and non-migrant households. Migrant households are households with either a permanent or a temporary migrant. It appears that children in migrant households spend on average fewer hours in non-leisure activities.

Table 3-2: Number of Hours per Week in Non-Leisure Activity

	Non-Migrant	Migrant
Hours per Week in Non-Leisure Activity, all Children (Age 5-15)	18.4**	14.6**
Hours per Week in Non-Leisure Activity, Girls (Age 5-15)	13.8**	11.1**
Hours per Week in Non-Leisure Activity, Boys (Age 5-15)	4.6*	3.5*

Note: Non leisure activities include time spent in household chores including cooking, cleaning, washing utensils, collecting firewood, and preparing dung fuel. It also includes work done on household farm or non-farm enterprise and paid work.

Table 3-3 below provides the breakdown of the non-leisure activities. The table shows that the largest difference between the time spent by girls and boys is of the time spent in domestic work. Boys, in non-migrant households, spend on average 3.1 hours in domestic work while girls spend on average 16 hours per week. But the point of our interest is if there are differences in the work of boys and girls in migrant and non-migrant households. There appear to be a statistically significant difference between the domestic work of girls in left-behind households and those in

spent by children in this age group only (5-15). The time spent by boys aged 16 and above was reported in the male questionnaire. The time use module of the male and female questionnaires is slightly different, in the female questionnaire many more domestic tasks categories are included than in the male questionnaire. In the male questionnaire, all domestic tasks are subsumed under one category of domestic work. Adding the time spent by boys aged 16 and 17 from the time use module of the male questionnaire runs the risk of systematic underreporting of the time spent by boys in domestic work. Hence, only the age group (5-15) for whom the same module operated are analysed.

⁴³ Although the time use module is thorough, the module does not record/report the time spent by children in schoolwork.

non-migrant households. This difference is also significant for boys in left-behind households and those in non-migrant households.

Table 3-3 Number of Hours per Week spent by Children in Paid Work, Domestic Work and Own Work

	Paid Work			Domestic Work			Own Work		
	Migrant (P)	Migrant (T)	Non-Migrant	Migrant (P)	Migrant (T)	Non-Migrant	Migrant (P)	Migrant (T)	Non-Migrant
Boys (Aged 5-15)	1.09 (190)	1.9 (82)	1.2 (3166)	1.3 *** (190)	1.85 (82)	3.1 *** (3166)	1.9 (190)	1.96 (82)	1.5 (3166)
Girls (Aged 5-15)	0.185 ** (186)	0.494 (83)	1.44 ** (2963)	12 ** (186)	17 (83)	16 ** (2963)	0.51 ** (290)	1.3 (83)	1.30 ** (2963)

*** p<0.01, ** p<0.05, * p<0.1

Households with either a permanent or a temporary migrant are considered as being migrant households.

Number of observations in parentheses

From Table 3-3 it appears that girl children in left-behind households spend fewer hours in all three categories of non-leisure activities. The differences for boys however are only significant for domestic work. Table 3-3 however summarizes the number of hours engaged by children without accounting for children’s participation in paid or own work. That is, for children not engaged in these activities, the hours are recorded as zero. In Table 3-4 below, percentage of non-migrant and migrant households where positive number of hours spent by children in own and paid work are reported are shown.

Table 3-4 Percentage of Households with Children’s Participation in work and Hours per Week spent by Children

	Own Work			Paid Work		
	Non-Migrant	Migrant (P)	Migrant (T)	Non-Migrant	Migrant (P)	Migrant (T)
Boys (Aged 5-15)						
Percent Engaged	13.9	13.7	21	4	2	2.4
Number of Hours	10.5	14	9.5	31	79 ¹	51 ²
Girls (Aged 5-15)						
Percent Engaged	16 **	10 **	23 *	5 *	2 *	3.6
Number of Hours	8	5	7	28	8	13

*** p<0.01, ** p<0.05, * p<0.1

Number of observations in parentheses

1. Based on 2 observations

2. Based on 4 observations

Table 3-4 shows that the percentage of households with a permanent migrant where children are engaged in own work and paid work is lower than the percentage of non-migrant

households where children are engaged in these activities. These differences are larger for girls' participation than it is for boys perhaps suggesting that for households with a permanent migrant, girls are more likely to withdraw from own and paid work or that girls withdraw from these activities before boys. The number of hours spent by girls in both paid and own work for those girls who participate in these activities are also lower for households with a permanent migrant. That suggests that for households with a permanent migrant where girl children are engaged in these activities, the number of hours spent in this work is still lower than for girls engaged in these activities in non-migrant households.

The explanatory variable of interest is migration of a member from the household. The dataset reports migration episodes as well as permanent migration of all individuals of the household⁴⁴. Here, two types of migration of members are used as explanatory variables. A household is considered a left-behind household if a member had left the household for employment and was away from the household at the time of the survey. Secondly, if a member of the household had migrated for work sometime during the year preceding the survey and had been away for 6 months or less but had returned to the household at the time of the survey, the household is considered as a migrant household. For ease of differentiation, the terms permanent migration is used for the first type of migration and temporary migration for the latter. A binary variable that takes a value 1 if a household has a migrant member is used to identify these households.

The other explanatory variable of interest is household's receipt of remittances. Households that had received remittances in the year preceding the survey are identified by a binary variable. Households with a migrant member do not perfectly overlap those that report receiving remittances.

Table 3-5 below shows the number of observations for migrant and non-migrant households in the panel. The percentage of observations out of the total number of observations are reported in the parentheses. The table shows that nine percent of observations correspond to having either a permanent or temporary migrant in the household at the time of the survey.

⁴⁴ Those permanent and temporary migrations are recorded in each round that had taken place in the year preceding the survey.

However, it is worth noting that the percentage of households that report receiving remittances is lower than those who have a migrant member.

Table 3-5: Migrant and Non-Migrant Households

Number of Observations	6263 (100)
Migrant Households	569 (9.1)
-Permanent Migrant	413 (6.6)
-Temporary Migrant	191 (3.1)
Remittance Recipient Households	336 (5.4)

Note: The percentage of categories is calculated from the total number of observations across the four rounds of the panel. These percentages are reported in parentheses.

Table 3-6 shows demographic characteristics of households with and without migrants. Column (1) shows the summary statistics for left-behind households, that is, households with a permanent migrant and column (2) shows the statistics for households with temporary migrant. Table 3-6 also shows the annual per person income, the annual per child, per girl and per boy education expenditures of the households and the share of expenditures spent on boys and girls. The average number of adult women in migrant households is more than the average number of women in non-migrant households. As mentioned in the last chapter, this could be because in the rural areas, men are unable to migrate and leave their wife and children behind unless other adult members of family are present in the household with his wife and children. Interestingly, Table 3-6 also shows that the average per child expenditures of permanent migrant households are significantly larger than those of non-migrant households. This is despite the fact that the annual per person income of these households is not significantly different from non-migrant households. The per boy annual education expenditures of both types of migrant households is significantly larger but the per girl annual education expenditures of these households is not. The share of education expenditures spent on girls is slightly higher for permanent migrant households, but this difference is not statistically significant.

Table 3-6: Summary Statistics by Migrant and Non-Migrant Status

Variable	(1)	(2)	(3)
	Migrant (P)	Migrant (T)	Non- Migrant
Household Size	6.4	7.9***	6.4
Men	1.6**	2.5***	1.7**
Women	2.0***	2.1***	1.7***
Children	2.8	3.2	3.0
Girls	1.0	1.1	1.0
Boys	1.0**	1.2	1.1**
Annual Income per Person	39807	43073	38309
Annual per Child Education Expenditure	4296***	3723	3140***
Annual per Girl Education Expenditure	3550	2961	2972
Annual per Boy Education Expenditure	5267***	4870*	3746***
Share of Boys in Education Expenditure	1.20	1.35	1.25
Share of Girls in Education Expenditure	0.83	.66	0.76
Number of Hours Spent by Girls in Non-Leisure Activity	9.5**	15	13.8**
Number of Hours Spent by Boys in Non-Leisure Activity	3.2*	4.4	4.6*

*** p<0.01, ** p<0.05, * p<0.1

All expenditures are in Pakistan Rupee (PKR)

Households with either a permanent or a temporary migrant are considered as being migrant households.

Note: Men are the number of adult men in the household. Women are the number of adult women in the household. Children are number of members below 18 years of age. Girls are the number of female members of the school age (5-17) and Boys are the number of male members of the school age.

Note: In Table 3-1, the comparison of education expenditures and shares were made after limiting the observations to those corresponding to households that had both girl and boy children of the school age. The data reported here is for all households.

In the next part of the analysis, the effect of migration on households' expenditure on girls' education is estimated after tackling selection of households into sending girls to school. For this analysis, the sample is restricted to households with girl children of the school age. The dependent variable is the log of households' expenditure on education of girls. Selection of households into sending girls to school is tackled using the Heckman selection model. The selection variable is the household's distance to girls' primary (Grade 1-5) and secondary school (Grade 6-10). In the dataset, households have reported the distance to school that their children attend. For households that did not send their children to school, the average distance to schools in their village is used. As schools in rural Pakistan are sex segregated, households' distance to girls' primary and secondary schools are used. Distance to school affects households' decision to enrol their children

to school but does not directly affect the expenditures on the above-mentioned categories of expenditures⁴⁵.

Table 3-7 : Children out of School

Percentage Out of School Children (Ages 5-17)	Round 1	Round 2	Round 3	Round 4
Girls %	60	53	53	21
Boys %	44	35	39	9

The percentage of girls (boys) of school age group who were not attending school out of the total number of girls (boys) of the school age group in the sample in that round.

Table 3-7 shows the percentage of children who were not attending school of the total number of children of that sex who were of the school age at the time of the survey. These numbers justify the use of selection models to assess the effect on households schooling expenditures. Table 3-8 below shows the percentage of households with permanent migrants, temporary migrants and no migrants who had either boys or girls of the school age who were not attending school, had girls of school age who were not attending school and boys of school age who were not attending school. The table compares those households that had both girls and boys of the school age group at the time of the survey. It appears that fewer households with permanent migrant have children who are out of school compared to households without any migrants.

Table 3-8 Migrant and Non-Migrant Households with Children out of School

Households with Children out of school	Migrant (P)	Migrant (T)	Non-Migrant
Children of either Sex	37.5***	46	48***
Girls	34***	45	48***
Boys	20	24	22

Households that have children of either sex of the school age (5-17) present in the house but one or more of them does not attend school
Households that have children of both sexes of the school going age (5-17) present in the household and no boy is out of school but one or more girls of the school age groups is out of school.
Households that have children of both sexes of the school going age (5-17) present in the household and no girl is out of school but one or more boys of the school age groups is out of school.

⁴⁵ The dataset reports expenditures on travel to school incurred for each child attending school in the household. In the calculation of both expenditure shares and per child (per girl, per boy) expenditures, travel costs have not been included.

3.4 Estimation and Identification Strategy

The following equation is estimated for the impact of migration on households' expenditure on children's education:

$$LnEduexp_{i,t} = \alpha_1 Permanentmigrant_{i,t} + \alpha_2 TemporaryMigrant_{i,t} + \alpha_3 Remittance_{i,t} + \alpha_4 X_{i,t} + \omega_i + \Phi_t + \epsilon_{i,t} \dots \dots \dots \text{Equation (3.1)}$$

Where $LnEduexp_{i,t}$ is the log of household's education expenditure per child per year⁴⁶. $PermanentMigrant_{i,t}$ is a binary variable that takes value 1, if, household i, at time period t, had a member who had migrated and was away from the household. $TemporaryMigrant_{i,t}$ is a binary variable that takes value 1, if household i, at time period t had a member who had migrated in time period t but had returned to the household. $Remittance_{i,t}$ is a binary variable that takes value 1 if household i reported receiving remittances at time period t. $X_{i,t}$ is a vector of household i's characteristics in time period t, including household size, household income per person, the ratio of girls to boys of the school age (5-17), household income quintile in the sample and the share of women's income in total income of the household. ω_i are the household's fixed effects and Φ_t are the year fixed effects. $\epsilon_{i,t}$ is the error term.

To estimate the effect of migration on households' share of expenditures on girls. The following equation is estimated.

$$GirlsShare_{i,t} = \beta_1 Permanentmigrant_{i,t} + \beta_2 TemporaryMigrant_{i,t} + \beta_3 Remittance_{i,t} + \beta_4 X_{i,t} + \omega_i + \Phi_t + \epsilon_{i,t} \dots \dots \dots \text{Equation (3.2)}$$

Where, $GirlsShare_{i,t}$ is the share of household i's expenditure on schooling and education of girl children in the household. $PermanentMigrant_{i,t}$ is a binary variable that takes value 1, if, household i, at time period t, had a member who had migrated and was away from the household. $TemporaryMigrant_{i,t}$ is a binary variable that takes value 1, if household i, at time period t had a member who had migrated in time period t but had returned to the household. $Remittance_{i,t}$ is a binary variable that takes value 1 if household i reported receiving remittances at time period t. $X_{i,t}$ is a vector of household i's characteristics in time period t, including household size, household

⁴⁶ Households' total annual education expenditures are also used as the dependent variable.

income per person, the ratio of girls to boys of the school age (5-17), household income quintile in the sample and the share of women’s income in total income of the household.

To estimate the effect of migration on households per girl expenditure after tackling of selection of households into sending their girl children to school, the following Heckman Selection Model is estimated.

$$LnGirlsExp_{i,t} = \gamma_0 + \gamma_1 Permanentmigrant_{i,t} + \gamma_2 TemporaryMigrant_{i,t} + \gamma_3 Remittance_{i,t} + \gamma_4 X_{i,t} + \omega_i + \Phi_t + \epsilon_{i,t} \dots \dots \dots \text{Equation (3.3)}$$

The dependent variable, $LnGirlsExp_{i,t}$, is the log of households’ expenditure on girls in the household. The variables, $Permanentmigrant_{i,t}$, $TemporaryMigrant_{i,t}$ and $Remittance_{i,t}$ are constructed as for equation 1. $X_{i,t}$ is a vector of household i’s characteristics at time period t including household size, log of household’s per person income and household’s income quintile in the sample.

The selection equation takes the following from:

$$ChildSchool_{i,t} = \rho_1 X_{i,t} + \rho_2 SchoolDistance_{i,t} + \rho_3 Permanentmigrant_{i,t} + \rho_4 TemporaryMigrant_{i,t} + \rho_5 Remittance_{i,t} + \epsilon_{i,t} \dots \dots \dots \text{Equation (3.4)}$$

$ChildSchool$

$$= \begin{cases} ChildSchool = 1, & \text{if } \rho_1 X_{i,t} + \rho_2 SchoolDistance_{i,t} + \rho_3 Permanentmigrant_{i,t} + \rho_4 TemporaryMigrant_{i,t} + \rho_5 Remittance_{i,t} > 0 \\ ChildSchool = 0, & \text{if } \rho_1 X_{i,t} + \rho_2 SchoolDistance_{i,t} + \rho_3 Permanentmigrant_{i,t} + \rho_4 TemporaryMigrant_{i,t} + \rho_5 Remittance_{i,t} \leq 0 \end{cases}$$

$$LnGirlsExp_{i,t} = LnGirlsExp_{i,t} \text{ if } ChildSchool_{i,t} = 1$$

Where $ChildSchool_{i,t}$ is 0 if household i at time period has girl children of the school age but were not attending school. $ChildSchool_{i,t}$ takes value 1 if household had girl children of the school age at time period t who were attending school. However, $ChildSchool_{i,t}$ takes value 1 even if some of the girl children in household i at time period t were not attending school. The variable takes value 0 only when all girl children in household i at time period t were out of school. In this scenario, household i’s expenditure on the education of girl children is zero (missing).

To estimate the impact of migration on the work of children in left-behind households, the following equation is estimated.

$$\begin{aligned}
\text{Hours per Week}_{j,i,t} = & \\
& = \lambda_1 \text{PermanentMigrant}_{i,t} + \lambda_2 \text{TempMigrant}_{j,i,t} + \lambda_3 \text{Remittances}_{i,t} + \lambda_4 Y_{j,i,t} \\
& + \lambda_5 X_{i,t} + \omega_i + \Omega_t + \varepsilon_{i,t} \dots\dots\dots(3.5)
\end{aligned}$$

Where *Hours per Week*_{j,i,t} is the number of hours per week spent by child j, in household i at time period t in a type of activity. The three types of activities that equation 3.5 is estimated for are paid work, domestic work, and work on own agricultural and non-agricultural enterprise. All explanatory variables are the same as described for equation 3.1 above. Equation 3.5 is estimated for all children in the surveyed households aged 5-15. The equation is estimated after controlling for individual fixed effects and year fixed effects.

Self-selection arises in the analysis of time spent by children in paid and own work as well. The number of hours spent by children in paid and own work are expected to be affected by migration of household members only for households where children engage in this work. In order to take this self-selection into account in the analysis of the effect of migration on the number of hours spent by children in work, the relationship between the number of hours spent by children in paid work after tackling selection using the Heckman Selection Model is also estimated. The selection variable used is households' wealth index based on households' ownership of assets. Households' long-term economic status can be expected to affect children's participation in work but does not directly affect the time spent by children in work. It is expected that households' wealth is negatively associated with the likelihood of children being engaged in work.

$$\begin{aligned}
\text{Hours per Week} *_{j,i,t} = & \tau_0 + \tau_1 \text{Permanentmigrant}_{i,t} + \tau_2 \text{TemporaryMigrant}_{i,t} + \tau_3 \text{Remittance}_{i,t} + \\
& \tau_4 X_{i,t} + \tau_5 Y_{j,i,t} + \Phi_t + \varepsilon_{i,t} \dots\dots\dots \text{Equation (3.6)}
\end{aligned}$$

The dependent variable, *Hours per Week*_{j,i,t}, is the number of hours spent by child j, in household i, at time period t in paid work. The variables, *Permanentmigrant*_{i,t}, *TemporaryMigrant*_{i,t} and *Remittance*_{i,t} are constructed as for equations (1) and (2). *X*_{i,t} is a vector of household i's characteristics at time period t including household size, log of household's per person income, ratio of adult women to men in the household and household's wealth index. *Y*_{j,i,t} is a vector of child j's characteristics including age and sex. The Heckman Selection equation takes the following form:

$$\text{Hours per Week}_{j,i,t} = \pi_1 X_{i,t} + \pi_2 \text{WealthIndex}_{i,t} + \pi_3 \text{Permanentmigrant}_{i,t} + \pi_4 \text{TemporaryMigrant}_{i,t} + \pi_5 \text{Remittance}_{i,t} + \varepsilon_{i,t} \dots\dots\dots \text{Equation (3.7)}$$

Hours per Week *_{j,i,t}

$$= \begin{cases} \text{Hours per Week} = 1, & \text{if } \pi_1 X_{i,t} + \pi_2 \text{WealthIndex}_{i,t} + \pi_3 \text{Permanentmigrant}_{i,t} + \pi_4 \text{TemporaryMigrant}_{i,t} + \pi_5 \text{Remittance}_{i,t} > 0 \\ \text{Hours per Week} = 0, & \text{if } \pi_1 X_{i,t} + \pi_2 \text{WealthIndex}_{i,t} + \pi_3 \text{Permanentmigrant}_{i,t} + \pi_4 \text{TemporaryMigrant}_{i,t} + \pi_5 \text{Remittance}_{i,t} \leq 0 \end{cases}$$

$$\text{Hours per Week}_{j,i,t} = \text{Hours per Week} *_{j,i,t} \text{ if } \text{Hours per Week}_{j,i,t} = 1$$

3.5 Results

3.5.1 Expenditure on Children's Education

Table 3-9 shows the results of estimation of equation 3.1. The dependent variable is the log of household's education expenditure per child (Columns 1, 3 and 5) and log of household's total education expenditure (Columns 2, 4 and 6). The coefficients have been estimated using household fixed effects and year fixed effects. The estimates are controlled for household characteristics that can potentially influence household's expenditure on education of children including Log of Household Annual Income per person, Household Size, Number of Children in the Household, Ratio of Girls to Boys, Household Income Quintile.

Table 3-9: Dependent Variable Log of Household Education Expenditure per Child and Log of Household Education Expenditure (Full Panel)

VARIABLES	(1) Log Edu Exp/Child	(2) Log Edu Exp	(3) Log Edu Exp/Child	(4) Log Edu Exp	(5) Log Edu Exp/Child	(6) Log Edu Exp
Household has Permanent Migrant (Left Behind Household)	0.167 (0.268)	0.113 (0.287)	0.192 (0.265)	0.143 (0.284)		
Household has a Temporary Migrant	0.0682 (0.282)	0.0632 (0.311)	0.0929 (0.281)	0.0931 (0.311)		
Household Receives Remittances	0.213 (0.225)	0.258 (0.246)			0.245 (0.220)	0.281 (0.242)
Constant	3.343*** (0.436)	3.277*** (0.483)	3.340*** (0.438)	3.273*** (0.485)	3.440*** (0.436)	3.341*** (0.481)
Observations	4,655	4,655	4,655	4,655	4,655	4,655
R-squared	0.033	0.043	0.032	0.042	0.032	0.043
Number of hid	1,717	1,717	1,717	1,717	1,717	1,717
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Control Variables: Log of Household Annual Income per person, Household Size, Number of Children in the Household, Ratio of Girls to Boys, Household Income Quintile.

In Columns 1 and 2, all three explanatory variables of interest, that is, household has a permanent migrant, household has a temporary migrant and household receives remittances have been included. In columns 3 and 4, the dummy indicating if the household receives remittances is taken out to ensure there is no multicollinearity between household's migrant status and receipt of

remittances. Similarly, in columns 5 and 6, the two variables indicating the household's migrant members is taken out. Sampling weights from round 1 are incorporated in all estimations. Robust standard errors are estimated. The results suggest, shown in Table 3-9, that there are no statistically significant effects on the education expenditures per child of households due to migration or remittances. Nor do there appear any statistically significant effects of remittances or migration in the total education expenditures of the households.

Restricting the sample to a balanced panel of the households included in round 4 of the survey indicates that households that receive remittances spend more on education of children. These results are shown in Table 3-10 below.

Table 3-10: Dependent Variable Log of Household Education Expenditure per Child and Log of Household Education Expenditure (Balanced Panel)

VARIABLES	(1) Log Edu Exp/Child	(2) Log Edu Exp	(3) Log Edu Exp/Child	(4) Log Edu Exp	(5) Log Edu Exp/Child	(6) Log Edu Exp
Household has Permanent Migrant (Left Behind Household)	-0.103 (0.239)	-0.262 (0.259)	0.00340 (0.235)	-0.134 (0.258)		
Household has a Temporary Migrant	-0.130 (0.446)	-0.182 (0.490)	-0.0788 (0.456)	-0.120 (0.503)		
Household Receives Remittances	0.700** (0.274)	0.845*** (0.294)			0.679** (0.264)	0.793*** (0.285)
Constant	6.428*** (0.516)	6.573*** (0.570)	6.457*** (0.516)	6.607*** (0.568)	6.315*** (0.517)	6.306*** (0.563)
Observations	891	891	891	891	891	891
R-squared	0.033	0.067	0.021	0.052	0.032	0.065
Number of hid	288	288	288	288	288	288
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Log of Household Annual Income per person, Household Size, Number of Children in the Household, Ratio of Girls to Boys, Household Income Quintile.

The results from the restricted sample indicate that households that receive remittances have higher total education expenditures and higher per child education expenditures. This is indicated a positive and significant estimated coefficient of the dummy variable that takes value 1 if the household where the child belongs reported receiving remittances during the survey year.

The sign and significance of the variable indicating households' receipt of remittances is robust to the inclusion and exclusion of the dummy variables indicating if the household had a temporary or a permanent migrant. The estimated coefficients are large, the per child expenditures of households that receive remittances are between 70-84 percent. The full estimated equations corresponding to the above tables are provided in the appendix (Table A18 and A19).

3.5.2 Share of Household Expenditure on Girls' Education

Table 3-11 shows the results of estimation of equation 3.2. Estimates have been controlled for household and year fixed effects. Column 1 shows the effect of having a migrant member on the dependent variable, column 2 shows the estimates after including household characteristics that are expected to affect households' expenditure on girls' education as control variables.

Table 3-11: Dependent Variable: Share of Girls in Households' Expenditure on Schooling and Education of All Children of the School Age (Ages 5-17), Full Panel

VARIABLES	(1) Girls' Share	(2) Girls' Share	(3) Girls' Share	(4) Girls' Share
Household has Permanent Migrant (Left Behind Household)	0.116** (0.0463)	0.107** (0.0547)	0.101* (0.0543)	
Household has a Temporary Migrant	-0.00923 (0.0734)	-0.00577 (0.0761)	-0.00732 (0.0760)	
Household Receives Remittances	-0.0503 (0.0574)	-0.0410 (0.0597)		-0.0188 (0.0596)
Constant	0.686*** (0.0516)	0.943*** (0.146)	0.943*** (0.146)	1.024*** (0.132)
Observations	2,481	2,481	2,481	2,481
R-squared	0.016	0.021	0.021	0.019
Number of hid	1,056	1,056	1,056	1,056
Year FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Income Quintile	Yes	Yes	Yes	Yes
Household Controls	No	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control variables: Log of household income per person, household size, ratio of girls to boys of the school going age, share of women's income in household income, dummy variable indicating if the household has only girl children in the school going age group.

In column (3) the dummy variable indicating if the household receives remittances is removed and in column (4) the dummy variables indicating if the household has a permanent or

temporary migrant is removed. Full set of control variables is included in estimations reported in columns (2), (3) and (4). These control variables include log of household annual income per person, household size, ratio of girls to boys of the school going age in the household, share of women's income in household total income and a binary variable indicating if the household has only girl children in the school going age group. Sampling weights are incorporated in the estimation and robust standard errors are estimated. The results suggest that households with a permanent migrant spend higher shares of education expenditures on the schooling and education of their girl children. The coefficient of the binary variable indicating if a household has a migrant member is positive and statistically significant. The estimated coefficient is 0.116, that is households with a permanent migrant have share of expenditure that are .11 higher than households that do not have a migrant. The average of households' shares of education expenditures spent on the schooling of girls is 0.71. That means that households with a permanent migrant have around 11 percent higher shares for the education of girl children.

Table 3-12 Dependent Variable: Share of Girls in Households' Expenditure on Schooling and Education of All Children of the School Age (Ages 5-17), Balanced Panel

VARIABLES	(1) Girls' Share	(2) Girls' Share	(3) Girls' Share	(4) Girls' Share
Household has Permanent Migrant (Left Behind Household)	0.138* (0.0715)	0.0650 (0.0820)	0.121* (0.0661)	
Household has a Temporary Migrant	0.120 (0.101)	0.0937 (0.0940)	0.117 (0.101)	
Household Receives Remittances	-0.0764 (0.0823)	-0.0980 (0.0837)		-0.0381 (0.0795)
Constant	0.817*** (0.0665)	0.879*** (0.243)	0.788*** (0.181)	0.855*** (0.182)
Observations	590	590	590	590
R-squared	0.042	0.064	0.042	0.032
Number of hid	213	213	213	213
Year FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Income Quintile	Yes	Yes	Yes	Yes
Household Controls	No	Yes	No	No

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control variables: Log of household income per person, household size, ratio of girls to boys of the school going age, share of women's income in household income, dummy variable indicating if the household has only girl children in the school going age group.

The results reported in Table 3-11 are based on an unbalanced panel. Table 3-12 reports the result of estimation of equation 3.2 based on the balanced panel. The results corroborate the results presented in the earlier table. However, the coefficient loses its statistical significance. This is particularly the case if the equation is estimated with the set of full controls. In columns 3 and 4 of Table 3-12 the set of all household level controls is not included. When the full set of controls are added, the statistical significance reported in column 3 is lost. However, the estimated coefficient retains its sign. The loss of statistical significance could be due to the smaller number of observations, or it could be that other changes in the household accompany a change in girls share that offset the changes. The complete estimated equations are provided in the appendix (Appendix Table A20 and Table A21).

Mechanism

The above results indicate that households' share of education expenditures spent on the education of girls increase potentially reducing gender inequality in terms of education expenditures in the left-behind household. This could be because when men migrate for employment, household decisions, including household expenditure decisions are taken by the women in the left-behind household. However, it could also be that migration leads to a transfer of gender egalitarian norms to the migrant households that lead households to treat boys and girls more equally. To assess the mechanism through which girls' share increase, migrants are disaggregated based on their destination. Households from where men migrate to countries outside Pakistan (international migrants) and households from where men migrate to destinations in Pakistan (internal migrants). Data limitations do not allow the separation of temporary migrants into international and internal migrants. So only left-behind households are disaggregated into international and internal migrants. Moreover, to assess the transfer of norms mechanism, a binary variable indicating if the household has an international return migrant is also included. This category identifies households from where a member had migrated (for work or any other purpose) to a country outside Pakistan but had returned and settled back in the household. The results of the estimation of equation (2.1) with these disaggregated categories are presented in the appendix (Table A22). The results suggest that left-behind households with internal migrants have significantly higher girls' share. The effect for international migrants and international return migrants is insignificant. This result can lead us to claim that left-behind households from where

a migrant is away are more likely to have gender equality due to increased role of women in household decision making. Why do left-behind households of international migrants do not appear to increase these shares is a conundrum. It could be that in left-behind households of international migrants the decision-making role of women is lower than the role of women in left-behind households of internal migrants. This is expected because as international migrants emigrate farther and are more restricted to come back easily in time of need, they are more likely to leave women and children under the supervision of another male relative who in turn is responsible for household decision making. The estimated coefficient of the binary variable that takes value one if the household has an international return is insignificant suggesting that the transfer of norms mechanism is not strong enough. Equation (2.1) is estimated with a binary variable indicating if the household had a male return migrant, this migrant could be an internal or international migrant to check if the transfer of norms mechanism shows an effect. The results are provided in (Table A23). The binary variable indicating if the household is a left-behind household is significant and positive and robust to the inclusion of the additional variable indicating return male migrant. Taken these results together, it may be inferred that households where women are in decision making roles, boys and girls are treated more equally.

3.5.3 Education Expenditure per Girl Child and Selection

Table 3-13 reports results of estimation of equation 3.3 and 3.4. The estimates are controlled for village fixed effects and year fixed effects. The results are based on sample restricted to households with school aged girls. This restricts the sample to 3638 observations. Out of these observations, there are 1646 observations where households have girls of the school age present in the household but were not attending school (that is, all girls of the school age in the household at the time period were out of school). Hence the annual per girl education expenditure for these households is missing and these households are not selected into the sample of households that have positive expenditures on girls schooling.

Table 3-13 Dependent Variable Log of Expenditure on Girls' Education

VARIABLES	(1) Log Edu Exp	(2) Log Edu Exp	(3) Log Edu Exp
Household has Permanent Migrant (Left Behind Household)	0.301** (0.133)	0.308** (0.132)	
Household has a Temporary Migrant	0.0366 (0.161)	0.0424 (0.161)	
Household Receives Remittances	0.0663 (0.128)		0.118 (0.139)
Constant	5.791*** (0.461)	5.793*** (0.461)	5.896*** (0.373)
Selection Equation			
Distance to Girls' Primary School	-0.0698*** (0.0133)	-0.0697*** (0.0133)	-0.0697*** (0.0119)
Distance to Girls' Secondary School	-0.0106** (0.00511)	-0.0106** (0.00511)	-0.0105** (0.00500)
Household has Permanent Migrant (Left Behind Household)	0.225* (0.123)	0.229* (0.122)	0.118 (0.105)
Household has a Temporary Migrant	-0.103 (0.142)	-0.0994 (0.141)	-0.109 (0.119)
Household Receives Remittances	0.206 (0.130)	0.179 (0.116)	0.234* (0.133)
Constant	-0.812*** (0.235)	-0.813*** (0.235)	-0.797*** (0.193)
/arho	0.914*** (0.114)	0.938*** (0.110)	0.942** (0.109)
/Insigma	0.198*** (.0455)	0.204*** (.0494)	0.205*** (.049)
Observations	3,635	3,635	3,635
Village FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Household Income Quintile	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables, Main equation: Log of households' annual income per person, share of women's income in household income, ratio of girls to boys in the household, share of adult women to men in the household, household size.

Selection Equation: Log of households' annual income per person, share of women's income in household income, ratio of girls to boys in the household, share of adult women to men in the household, household size.

The selection equation contains all explanatory variables including the three binary variables indicating if the household has 1. Permanent migrant 2. A temporary migrant 3. Receives remittances. The selection equation further contains households' distance to girls' primary and

secondary schools. For households that did not send their girls to school, the village average distance of households to girls' primary and secondary schools is used. The selection equation also contains all the control variables of the main equation including log of households' annual income per person, share of women's income in household income, ratio of girls to boys in the household, share of adult women to men in the household and the household size. The selection equation does not have village level fixed effects. It has year fixed effects. The results suggest that households with a permanent migrant are more likely to be selected into sending their girls to school. The results also suggest that on average households with a permanent migrant spend more on the education of girls.

3.5.4 Children's Work

Table 3-14: Dependent Variable: Hours per Week in Non-Leisure Activity

VARIABLES	(1) Total	(2) Paid Work	(3) Domestic Work	(4) Own Work
Household has Permanent Migrant (Left Behind Household)	-2.902 (1.897)	-1.553** (0.630)	-1.202 (1.667)	-0.147 (0.467)
Household Receives Remittance	0.420 (1.999)	0.765 (0.677)	-0.530 (1.699)	0.184 (0.427)
Household has Temporary Migrant	-2.919 (2.540)	0.147 (0.985)	-3.425 (2.390)	0.359 (0.620)
Constant	4.604 (4.106)	2.293 (1.524)	5.047 (3.538)	-2.736*** (1.057)
Observations	4,371	4,371	4,371	4,371
R-squared	0.089	0.022	0.090	0.028
Number of hid	1,624	1,624	1,624	1,624
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household size, household structure (Extended or Nuclear Family), Ratio of adult women to men in the household, Number of boys aged 5-15, Number of Girls aged 5-15, Log of per per Income of the household.

The signs and significance of the results is robust to the exclusion of the binary variable capturing if the households received any remittances during the year preceding the survey.

Table 3-14 above shows the results of estimation of equation 3.5. The dependent variable is the number of hours spent by all children aged 5-15 in the week preceding the survey in non-leisure activities. Column 1 of Table 3-14 shows the effect on total number of hours per week spent by the child in all non-leisure activities and columns 2-4 of Table 3-14 present the results for hours spent in paid work, domestic work and work on household farm and non-farm enterprise. All estimates are controlled for household level variables that can potentially affect children's work including household size, household type (nuclear or joint family), ratio of adult women to men in the household, number of children of each sex aged 5-15 in the household and the log of annual income of the household per person. The estimates are controlled for household fixed effects and year fixed effects.

The results indicate that having a permanent migrant reduces the time spent by children in left-behind households paid work. There are no other statistically significant effects. Below it is assessed if boys' and girls' time is affected differently due to having a migrant.

Table 3-15 shows the results of estimation of equation (3.5) on the number of hours spent by boys aged 5-15 in various non-leisure activity. The sample is restricted to households with boys aged 5-15 at the time of the survey. The results corroborate the results for full sample for all children. Boys' participation in paid work is lower in households with a permanent migrant. Boys in households from where a member has migrated spend on average 1.5 hours less per week in paid work. This could be because a boy who was previously engaged in paid work is the one to have migrated for work. Moreover, the results indicate that boys' participation in domestic work increases due to households' receipt of remittances. This is intriguing; however, it may be that if remittance receiving households invest in technology that eases the domestic work such as electric motor to pump water or washing machines, boys engage more in household activities. This is because boys are believed to be better users of technology in rural households. The results also suggest that boys spend fewer hours in domestic work if the household has a temporary migrant. Now, temporary migrants are men who had migrated for work during the year preceding the survey but had returned to the household at the time of the survey. Lowered participation of young boys in domestic work in such households could be because the male members take up the tasks that were taken up by younger boys when the member was away.

Table 3-15: Dependent Variable: Hours per Week in Non-Leisure Activity spent by Boys (Age 5-15)

VARIABLES	(1) Total	(2) Paid Work	(3) Domestic Work	(4) Own Work
Household has Permanent Migrant (Left Behind Household)	-1.710 (1.087)	-1.303** (0.624)	-0.607 (0.703)	0.200 (0.467)
Household Receives Remittance	0.927 (0.893)	-0.251 (0.407)	1.048* (0.634)	0.130 (0.353)
Household has Temporary Migrant	-0.231 (1.254)	1.085* (0.583)	-2.045** (1.009)	0.728 (0.721)
Constant	1.774 (3.101)	2.748** (1.391)	1.434 (2.198)	-2.407* (1.227)
Observations	3,456	3,456	3,456	3,456
R-squared	0.032	0.018	0.022	0.022
Number of hid	1,326	1,326	1,326	1,326
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Control Variables: Household size, household structure (Extended or Nuclear Family), Ratio of adult women to men in the household, Number of boys aged 5-15, Number of Girls aged 5-15, Log of per Income of the household.

Similarly, as shown in Table 3-16 below. The number of hours spent by girls in left behind migrant households in paid work are also lower. Although the magnitude of the effect is small, such small effect size could be because the number of hours spent by girls in paid work is already low. (As shown in Table 3-3).

The results presented in in Table 3-14, Table 3-15 and Table 3-16 are based on an unbalanced panel, equation 3.5 is re-estimated for all children, boys and for girls using balanced panel. The results are not being reported here for all children and boys because there are not statistically significant effects. However, an interesting result is obtained for girls' work shown in the below. The results indicate that girls in households with a migrant who is away spend fewer hours in households own agricultural or non-agricultural work. The results are analogous to the results for own work of women in left-behind households presented in the previous chapter. As mentioned above, it is likely that men who migrate leave their farm with others under a tenancy agreement and hence the time spent by women and girls on household agricultural activity is lower.

Table 3-16: Dependent Variable: Hours per Week in Non-Leisure Activity spent by Girls (Age 5-15)

VARIABLES	(1)	(2)	(3)	(4)
	Total	Paid Work	Domestic Work	Own Work
Household has Permanent Migrant (Left Behind Household)	-1.480 (2.140)	-0.574* (0.343)	-0.564 (2.021)	-0.343 (0.350)
Household Receives Remittance	-3.020 (2.453)	0.218 (0.399)	-2.789 (2.318)	-0.449 (0.354)
Household has Temporary Migrant	-2.839 (3.332)	-0.831 (1.169)	-2.045 (3.096)	0.0366 (0.397)
Constant	-0.390 (5.220)	0.283 (1.414)	0.491 (4.873)	-1.164 (0.862)
Observations	3,253	3,253	3,253	3,253
R-squared	0.099	0.025	0.096	0.025
Number of hid	1,273	1,273	1,273	1,273
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household size, household structure (Extended or Nuclear Family), Ratio of adult women to men in the household, Number of boys aged 5-15, Number of Girls aged 5-15, Log of per per Income of the household.

Table 3-17 Dependent Variable: Hours per Week in Non-Leisure Activity spent by Girls (Age 5-15), Balanced Panel

VARIABLES	(1) Total	(2) Paid Work	(3) Domestic Work	(4) Own Work
Household has Permanent Migrant (Left Behind Household)	-0.650 (2.506)	-0.00731 (0.0730)	0.0120 (2.433)	-0.655* (0.371)
Household Receives Remittance	2.903 (2.938)	0.213 (0.222)	2.912 (2.828)	-0.221 (0.415)
Household has Temporary Migrant	-0.975 (5.870)	0.194 (0.208)	-0.905 (5.825)	-0.264 (0.822)
Constant	-0.913 (7.295)	-1.074 (1.172)	0.0632 (6.844)	0.0980 (1.491)
Observations	568	568	568	568
R-squared	0.169	0.028	0.159	0.056
Number of hid	204	204	204	204
Household FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household size, household structure (Extended or Nuclear Family), Ratio of adult women to men in the household, Number of boys aged 5-15, Number of Girls aged 5-15, Log of per per Income of the household.

The signs and significance of the results is robust to the exclusion of the binary variable capturing if the households received any remittances during the year preceding the survey.

Children's Work and Selection

Table 3-18 shows results of estimation of equations (3.6) and (3.7). That is, Table 3-18 shows the estimated effects of having a permanent migrant, temporary migrant and remittances on the number of hours spent by children aged 5-15 in paid work and work on own farm and non-farm enterprise after controlling for self-selection of households into engaging children in work. The dependent variable is the number of hours per week spent by an individual child in paid work or work on household farm or non-farm enterprise. The selection variable is a wealth index based on households' ownership of assets⁴⁷. The wealth index is constructed using Principal Component Analysis (PCA). The wealth index is supposed to indicate households' long-term economic status. It is expected that poorer households are more likely to have children work for wages or on own enterprise. Wealth may affect households' decision to make children work but it is not expected to directly affect the number of hours engaged in work by children. The results presented in the table are controlled for household size, type of household (nuclear or joint/extended family household), log of household per person annual income, ratio of adult women to men in the household, ratio of girls to boys in the household, wealth index, sex of the head of the household, education of the head of the household, child's age and child sex. Moreover, since the estimates are based on pooled data from three rounds of the survey⁴⁸, the estimates are controlled for year fixed effects and district fixed effects⁴⁹ by the inclusion of dummy variables⁴⁹.

Results suggest that children in households with a permanent migrant are significantly less likely to be selected into work. Having a temporary migrant or receiving remittances do not appear to significantly affect children's participation in this work. However, having a permanent migrant does not appear to have a significant effect on the number of hours spent by children in work. It

⁴⁷ The Wealth Index is based on households' ownership of Land, House, Consumer Appliances and assets (AC/Room Cooler, Washing Machine, Freezer, Geyser, Fridge, Mobile Phone, Car, Motor-Cycle, Scooter, Rickshaw, Cycle, Sewing Machine, Computer, Coloured TV, Black & White TV, Wall Clock, Music Player, Radio, Electric Iron, Electric Fan), Type of Roof of residence, Type of Walls of Residence, Type of Floor, Source of Drinking Water, Access to Grid Electricity, Members per Sleeping Rooms in the house, Bank Account and Ownership of Animals (Indigenous Cows, Imported Cows, Buffaloes, Bullocks, Camels, Horses, Sheep, Goats, Donkeys, Mules, Chickens, and Fish). The list of assets to be included in the wealth index is suggested in:

https://dhsprogram.com/programming/wealth%20index/Steps_to_constructing_the_new_DHS_Wealth_Index.pdf.

⁴⁸ Data from Rounds 1, 2 and 3 is used due to the unavailability of full set of variables used in the construction of the wealth index in Round 4. However, I re-estimate the Heckman Selection Model using data from all four rounds using a wealth index based on a limited set of indicators that were available in four rounds.

⁴⁹ There are 363 observations in the pooled data that have missing data on whether children participated in paid work. These observations are dropped. Furthermore, there are another 350 obs for which the education of the head of the household is missing. Equations (3.6) and (3.7) are estimated by including and excluding the education of the household head as an explanatory variable. The signs and significance of all three explanatory variables of interest are robust to this inclusion/exclusion.

may be inferred that when a male member of the household is away from the household, children in the left-behind household are less likely to engage in work.

Table 3-18 Dependent Variable: Hours per Week Spent in Own and Paid Work (Ages 5-15)

VARIABLES	(1) Hours per Week	(2) Hours per Week	(3) Hours per Week	(4) Hours per Week
Household has Permanent Migrant	0.837 (1.960)			0.724 (1.918)
Household Receives Remittance		2.382 (1.875)		2.345 (1.825)
Household has Temporary Migrant			-1.708 (1.542)	-1.843 (1.600)
Constant	5.034 (5.849)	5.164 (5.780)	4.861 (5.846)	4.918 (5.779)
Selection Equation				
Wealth Index	-0.0451*** (0.0153)	-0.0461*** (0.0154)	-0.0457*** (0.0153)	-0.0452*** (0.0153)
Household has Permanent Migrant	-0.259* (0.139)			-0.287** (0.137)
Household Receives Remittance		0.128 (0.136)		0.164 (0.138)
Household has Temporary Migrant			0.233 (0.150)	0.241 (0.154)
athrho	-0.181*** (0.0436)	-0.183*** (0.0440)	-0.181*** (0.0440)	-0.182*** (0.0435)
lnsigma	2.517*** (0.0424)	2.517*** (0.0423)	2.517*** (0.0423)	2.516*** (0.0423)
Observations	10,345	10,345	10,345	10,345
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Control Variables: Household Size, Household Type (Dummy Variable=1, Joint/Extended Family Household), Log of Household per person Annual Income, Ratio of Adult Women to Men in the Household, Ratio of Girls to Boys in the household (Children under the age of 18), Wealth Index, Sex of the Head of the Household, Education of the Head of the household, Child's Age, Child Sex, Year Fixed Effects and District Fixed Effects. Selection Equation: Household Size, Household Type (Dummy Variable=1, Joint Family), Log of Household Per person Annual Income, Ratio of Women to Men in the Household, Ratio of Girls to Boys in the Household, Sex of the Household Head, Year Fixed Effects and District Fixed Effects.				

However, for children who do not drop out from work, their number of hours spent in work remain unaffected. As mentioned in the footnote 48, results in Table 3-18 are based on pooled data from rounds 1, 2 and 3 of the panel. Round 4 does not include the full set of variables used in the construction of wealth index. However, a wealth index is constructed using the limited set of

variables available in all four rounds⁵⁰. Equations (3.6) and (3.7) are estimated using pooled data from all four rounds and the wealth index based on limited information on household assets. The signs and significance of all variables of interest remain the same. The results are shown in Appendix Table A24.

⁵⁰ These include ownership of land and house. It also included ownership and number of home assets including AC/Room Cooler, Washing Machine, Freezer, Geyser, Fridge, Mobile Phone, Car, Motor-Cycle, Scooter, Rickshaw, Cycle, Sewing Machine, Computer, Coloured TV, Black & White TV, Wall Clock, Music Player, Radio, Electric Iron, Electric Fan.

3.6 Discussion

This chapter attempted to estimate the effects of migration on education expenditures and work burden of children in the left-behind households. Furthermore, the effect of migration on gender equality in terms of households' education expenditures spent on education of boys and girls has also been estimated. The chapter has attempted to disentangle the effects of migration from those of households' receipt of remittances. The analysis has also differentiated between left-behind households (households with a permanent migrant) from households with a temporary migrant.

Results suggest that left-behind households and households with temporary migrants do not significantly change their expenditures on children's education. No significant effects on households' total annual education expenditures or on their annual per child education expenditures have been noted. There is however some evidence, from a restricted sample, that households that receive remittances increase the expenditures spent on children's education.

The effect of migration on households' share of education expenditures spent on the education of girl children appears to be significantly positive. That is, left-behind households have significantly increased shares of their education expenditures spent on the education of girls. It can be inferred that gender inequality in education expenditures reduces in left-behind households. It is also indicated by the results of Heckman Selection Model that girl children in left-behind households are more likely to be enrolled in school and have higher expenditures incurred by the household on their schooling. If these results are viewed in the light of the results of the previous chapter, we may be tempted to infer that women's higher participation in household decisions in the left-behind households reduces gender inequality in households. This can also be inferred from the observation that the overall education expenditures are not affected by migration. Girls' share in education expenditures are also not significantly affected by temporary migration, that is, only when the household has a permanent migrant (that is, is away from the household), the left-behind households appears to have higher shares of education expenditures spent on girls' education. Is women's role in household decisions instrumental in reducing gender inequality in households or not is explicitly tested in the next chapter.

Children's work burden also appears to reduce in left-behind households. This reduced burden of work is primarily due to decreased number of hours spent by children in the left-behind households in paid work. This is observed for both boys and girls in the left-behind households. Households receipt of remittances nor temporary migration of members appears to have this effect. It means that children's lower participation in paid work may also be due to women's increased control of household decisions. However, the fewer number of hours spent by children in paid work in left-behind households may be because an older male child, previously undertaking paid work, may be the one to have migrated from the household leading to lower estimates of the number of hours spent by children in left-behind households in paid work. Evidence from a restricted panel indicates that number of hours spent by girls in households' own agricultural and non-agricultural enterprise are also lower in the left-behind households. This may be because girls and women stop engaging in activity on households' own farm after migration of the male members.

4 Choice without Consciousness: Women's Role in Household Decisions and Gender Equality in Households

Summary: In this chapter, it is tested if households with participation of women in decisions regarding children's education and allocation of children's educational budgets incur more equal expenditures on education of boys and girls. That is, it is tested if women's participation in household decisions reduces inequality between boys and girls within households. Moreover, it is tested if women's gender consciousness - an awareness regarding gender equality can reduce inequality between boys and girls. Therefore, it is tested if women's participation in household decisions regarding children's education increases share of households' expenditure spent on the education of girls and if women's consciousness increases the share of households' expenditure spent on girls. Results suggest that households where women participate in decisions regarding children's education have higher shares of education expenditures spent on the education of girls for households with girls and boys of secondary school age group. The results of Heckman Selection Model, corroborated by an estimated logit model, suggest that secondary school aged girls in households where women participate in children's education decisions and exhibit consciousness towards gender equality in education, are more likely to be enrolled in school.

4.1 Introduction

In development research, empowerment of women is discussed as mean to attain gender equality and in terms of its instrumental efficacy for development outcomes (Branisa, Klasen & Ziegler 2013; Rendall, 2013). This has led to a proliferation of measures of women's empowerment (Alkire, Meinzen-Dick, Peterman, Quisuimbing, Seymour & Vaz, 2013, Samman & Santos, 2009; Ibrahim & Alkire, 2007).

Women's role in household decisions is an oft-employed indicator of women's empowerment. In this chapter, the efficacy of women's role in household decisions for reducing inequality between boys and girls within households is tested. Households' expenditures on schooling of boys and girls are used to capture gender inequality. Additionally, it is tested if women's consciousness of gender equality plays a role in reduction of gender inequality within households. Women's role in household decisions, gender equality within households and women's consciousness are endogenous. That is, households where women exercise choices may treat boys and girls equally. Longitudinal data allows to compare the same households with and without women's decision participation thereby reducing endogeneity, hence exploiting the dataset used throughout this thesis, the relationship between women's participation in household decisions and gender equality within households is estimated. Women in households may experience a change in these roles due to factors such as migration or death of man/men previously responsible for taking household decisions. Hence, changes in gender inequality can be reliably attributed to women's decision participation. Similarly, women may experience a change in gender consciousness within the same household that leads them to reduce inequality between boys and girls

Women's participation in household decisions is employed as indicative of empowerment due to the drawbacks of using indirect and macro measures of women's empowerment that make it difficult to separate the causal factors and outcomes/consequences of empowerment (see Branisa, Klasen & Ziegler, 2013; Ferrant, & Tuccio, 2015; Sundström, Paxton, Wang, & Lindberg, 2017 for indirect measures and Cueva Beteta, 2006; Shüler, 2006 for critique). Index indicators of women's empowerment, based on household survey data on women's role in household decisions, popularized after the inclusion of household decision-making modules in the Demographic and Health Surveys (DHS) (see Kishor & Subaiya, 2008). The premise for the inclusion of these

modules in household surveys is that this data captures women's control over their lives. This greater control over one's own life is conceptualized as empowerment (Ibrahim and Alkire, 2007; Alkire et al, 2013; Mahmud & Tasneem, 2014; Ahmed and Khan, 2016; Phan, 2016). These empowerment measures are then used to assess the covariates of women's empowerment (Sathar and Kazi, 2000; Kishor & Gupta 2004; Garikipati, 2008; Afzal et al., 2009; Khan, Mann, Zafar, Hashmi, & Akhtar, 2010; Mahmud, Shah & Becker, 2012; Weber & Ahmad, 2014) and to assess the impact of women's empowerment on outcomes such as fertility and child health (Upadhyay et al., 2014; Pratley, 2016; Prata et al., 2017).

Women's participation in household decision-making as a measure of their empowerment is also criticized (Vaz, Pratley, & Alkire, 2016; O'Hara & Clement, 2018)⁵¹. The two major critiques on the use household decision making as a gauge of women's empowerment are that, on the one hand, it ignores the complexity of household-decision making process (Seymour & Peterman, 2018; Agarwal, 1997). The second critique is that women may not use their decision-making role to favour women (or girls) in the household and continue to discriminate against women and girls. This is more likely in contexts with high gender inequality where women internalize their own inferior status (Sardenberg, 2016; O'Hara & Clement, 2018). There is also insufficient empirical evidence for the claim that women's empowerment, as measured by their participation in household decisions, reduces gender inequalities. Duflo (2003) notes that transfers to women favour girls and Antman (2015) suggests that households from where men have migrated have higher shares of their clothing expenditures spent on girls. On the other hand, it has been noted, in the context of health inequalities, that women's participation in household decisions has differential impact on boys' and girls' health and nutrition intake, typically favouring boys (Malapit & Quisimbing, 2015). In the context of rural Pakistan, Mansuri (2006a) analysed education outcomes of boys and girls comparing households with male head of the household with those with female head of the household and found significantly negative effects on schooling outcomes of girls in households with women as head of the household.

It is the second critique that this chapter engages with. That is, it attempts to assess if women's higher participation in households' decisions reduces inequality between boys and girls

⁵¹ Also see Gram, L., Morrison, J., & Skordis-Worrall, J. (2019). Organising concepts of 'women's empowerment' for measurement: a typology. *Social indicators research*, 143(3), 1349-1376.

within households. Furthermore, the chapter aims to shed light on the results of the previous chapter, that is, it inquires if the observed reduction in inequality in terms of education expenditures due to absence of men can be attributed to higher participation of women in household decisions. That is, can the observed reduction in gender inequality in terms of education expenditures in migrant households (left-behind households) be attributed to greater role of women in household decisions in left-behind migrant households?

Specifically, it is tested if women's participation in household decisions on children's education reduces inequality in household expenditures incurred for schooling and education of girls and boys. In order to take into account women's internalized inferior status, it is further tested if women's consciousness towards gender equality reduces gender inequality in education. It is hypothesized that women's participation in household decisions in highly gender unequal contexts may not reduce inequality between girls and boys in the households unless it is accompanied by women's consciousness towards gender equality. Consciousness of gender equality can lead women to reduce gender inequalities as belief in the inferior status of women can be overcome through gender consciousness.

In the context of the analysis of this thesis, it is worthwhile to make this assessment primarily for two reasons. First, girls and women in rural Pakistan remain disadvantaged in terms of access to education. As noted in the introduction of this thesis, the societal context is gender unequal. Wide disparities exist in terms of access to education between girls and boys. According to PSLM 2014-15, 70 percent of men while only 49 percent of women aged 10 and above in Pakistan are literate. This gap is wider for rural areas where 63 percent men and 38 percent of women are literate. The Net Enrolment Rates (NER) for girls at the primary level in the rural areas in the year 2014-15 was 56 percent. That is, 56 percent of girl children aged 6-10 were enrolled in primary schools while 69 percent of male children in the rural areas aged 6-10 were enrolled. The NER for middle level for girls in the rural areas was 27 percent in the same year. While 36 percent of boys aged 11-13 in the rural areas were enrolled in school.

Second, as noted in the previous chapters, outmigration of men from rural households leads to an increase in women's role in household decisions and increases the share of household expenditures spent on schooling of girls. An examination of whether women's increased participation in household decisions decreases inequality between boys and girls within the

household can substantiate claims that men's outmigration that gives women higher decision-making roles within the household reduces inequality between boys and girls in the left-behind households. Since higher role of women in household decisions is not just the outcome of male migration, differences in the participation of women in household decisions exist among households otherwise as well. Therefore, in this chapter the analysis is broadened to all rural households.

The Pakistan Rural Household Panel Survey (PRHPS) (IFPRI & IDS; 2012-2014), the dataset used throughout this thesis, is used to estimate these effects. Women's consciousness of gender equality is further added as an explanatory variable.

Among the empirical challenges faced in answering the above question is endogeneity of women's decision making, women's consciousness and gender equality within households. Factors, including household characteristics, that increase women's consciousness of gender equality might also lead households to spend more on the education of their girl children. For example, households with more egalitarian gender attitudes may have higher participation of women in decision making all the while having higher expenditures on girls' education. The household's gender egalitarian attitude may be reflected in women's views on gender equality as well. Therefore, fixed effects regression analysis is used. Fixed effects analysis can reduce this endogeneity by comparing the same households with and without women's decision participation and consciousness. However, fixed effects regression does not rule out the possibility of a household level shock in between rounds that may have led to changes in all three variables.

This chapter attempts to answer the following questions:

1. Does women's participation in households regarding children's education reduce gender inequality in households' education expenditures by increasing the girls' share in household education expenditures?
2. Does gender consciousness of women regarding gender equality in education reduce gender inequality in households' education expenditures by increasing the girls' share in household education expenditures?

As in the previous chapters, the second empirical challenge is self-selection of households into sending children to school. Households' expenditure on the education of children varies only

for households that send their children to school. In order to tackle this self-selection of households into the sample, the above-mentioned relationships are estimated after tackling selection using the Heckman Selection model. The selection variable used is the households' distance to school. Distance to school is expected to negatively affect school enrolment (Sathar & Lloyd, 1994; Alderman et al., 1996, Hazarika, 2001) but is not expected to affect the differences in households' expenditure on the girls' and boys' education⁵². Therefore, the study attempts to answer the following research question as well:

3. Do women's participation in household decisions and women's consciousness towards gender equality increase household expenditures on education of girl children after self-selecting into sending girls to school?

The chapter is organized as follows: Section 2 provides a brief review of the strands of literature that informs the analysis. Section 3 describes the data and variables used in the analysis and presents the empirical strategy employed. Section 4 shows the results of empirical analyses. Section 5 discusses the results of the empirical analysis.

4.2 Literature Review

The analysis in this chapter attempts to unify various strands of literature. These strands include literature on women's empowerment, empirical works on the causal factors behind low levels of girls' schooling in Pakistan, literature on human capital accumulation (including children's education) and theories of gender that attempt to delineate the factors behind women's disadvantage in societies. After a brief discussion on the insights provided by each strand of this literature, unified reading of this literature is attempted.

4.2.1 Women's Empowerment

Women's empowerment is a change in women's situation from limited/no life choices to having more choices in life (Kabeer, 1999; 2005). This framework has influenced the use of women's role in household decision making as a measure of women's empowerment. However, having choice mandates the simultaneous presence of women's capacity to choose, women's access to material and non-material resources and women's agency.

⁵² Households' expenditures on children's travel to school were not included in the educational expenditures.

Among other factors, capacity to choose rests on socio-cultural context that does or does not limit women's choices by coercive or non-coercive means. For example, in contexts where women can legally pursue education but face social ostracism for breaking cultural norms by seeking education, women cannot be said to have choice in life. Having choice also rests on the availability and access to material and non-material resources (Kabeer, 1999). It means that women can choose only when they have necessary resources. For example, if women are free to choose how much education they would like to receive but do not have the financial means to pursue education, women's freedom to choose a desired education level is redundant. Hence, women can be empowered when they gain resources (Batliwala, 1995; Sen and Batliwala, 2000; Pradhan, 2003; Gupta and Yesudian, 2006).

Yet, the capacity to choose and availability of resources is not enough to empower women in gender unequal social contexts. Importantly, for women's empowerment to reduce gender inequality and for empowered women to work for changing gender unequal social contexts women's choices must reflect women's agency. Women's agency and women's choices are closely related. Agency means a capacity to choose and the thinking process behind choices. Women's visible choices (actions) can result from acceptance of roles prescribed to them by their families and the society. For example, in contexts where women are expected to not work outside the home, women may choose to stay within homes. However, this visible choice may not be reflecting their agency. Such choices reflect agency only when individuals have weighed the pros and cons of their choices within their contextual constraints and then made that choice. Conversely, individuals may choose consciously to not make certain choices. In this case, an individual action (visible choice) may not be present, but their agency is.

A woman with choices, access to resources and agency fits the concept of an empowered woman in the framework. However, the presence of all three these may not guarantee gender equality. For example, in contexts where girls are discriminated against and son-preference is pervasive. Women's status in households increases when they give birth to sons. A pregnant woman, having access to resources (financial as well as the necessary medical facilities) may weigh the pros and cons of sex-selective abortion and choose to have only sons. Now, visibly a woman having the choice and the means to abort her fetus in order to increase her own position within her household fulfills the criterion for empowered women. However, is her empowerment

a way of reducing gender inequality in the society? If many women in a given society were empowered in the way that this example suggests, what does that empowerment entail for gender inequality in that society?

Another component, therefore, is necessary to enable empowered women to transform gender unequal societies and that is women's consciousness. Consciousness refers to women's awareness of systematic gender inequalities. It also means awareness of their actions as contributing towards the reduction (or exacerbation) of gender inequalities. This consciousness is women's understanding of processes that disempower women. Consciousness may also engender action, individual and collective, towards the undoing of disempowering processes (Rowlands, 1995; Sen and Baltiwala, 2000; Mosedale, 2005; Batliwala, 2007; Beşpınar, 2010; Sardenberg, 2016). However, women with consciousness of gender equality may be debilitated from taking action against gender inequality due to lack of resources or inconducive social context.

In empirical research, when women are observed as taking small and large decisions regarding her life or within the household, it is assumed to be indicative of women's choice and control over her life and hence considered women's empowerment (Wilson, 2009). However, women in decision making roles in households and at policy levels will contribute (or contribute more) to reduction in inequalities between men and women when these roles are accompanied by consciousness of gender equality (Batliwala & Dhanraj, 2004). O'Hara and Clement (2018) are among the pioneering empirical studies that stress on the inclusion of consciousness indicators in women's empowerment valuations. The study notes that women's empowerment is conceptualized as agency. In measures of women's empowerment, agency is reflected in women's role in decisions, women's participation in household production and control over income. However, women's empowerment conceptualized and measured as such does not reflect its potential for dismantling of structural inequalities between men and women (O'Hara and Clement, 2018). In the analysis in this chapter, therefore, women's role in household decisions as well as some measure of their consciousness towards gender equality are included. By assessing the effect of women's decisions making role and their consciousness on gender inequality within households, the analysis attempts to highlight the importance of women's consciousness as a component of women's empowerment.

4.2.2 Girls' Schooling in Pakistan:

Disparities between education levels of girls and boys in the country have not remained unnoticed in research on schooling and education in the country (Khan, 1997; Arif, Saqib & Zahid, 1999; Aslam & Kingdon, 2008; Khan, 2008). This body of research notes that there are both supply side and demand side constraints to education attainment. On the supply side, low levels of government investment in education infrastructure that leads to unavailability of schools is a major influencing factor (Khan, 1997). On the demand side, poverty and lack of financial resources limit schooling and education of children (Arif, Saqib & Zahid, 1999).

Girls disadvantage in schooling is noted at the level of enrolment (Khan, 2008). This disadvantage is noted to be more pronounced in the rural areas (Arif, et al., 1999) and is shown to persist after enrolment in terms of the expenditures on girls' schooling relative to boys (Aslam & Kingdon, 2008) as well as the quality of their schooling (Aslam, 2009). Furthermore, factors that limit children's schooling, like poverty and low levels of parental education, have been noted to affect girls more than boys. While the factors that contribute to increase children's schooling and education are noted to have a smaller effect on girls' schooling than that on the schooling of boys (Arif, et al., 1999; Khan, 2008). The reasons for lower rates of girls' enrolment, lower investment in their schooling and low rates of education achievement can be inferred from the human capital view of investments in children's education and gender theory.

Human capital investment view on children's education suggests that households spend on education when they expect returns to education in the form of wages/income earned in the future. These returns depend on the labour market conditions prevalent and households' expectations regarding the future labour market conditions when children will enter the labour markets. Households invest in children's education if the future returns to this investment exceed the costs. Labour market conditions vary for men and women that means that the returns to investment in the education of boys and girls varies. This variation leads to different investments made for the education of boys and girls by households. Furthermore, in societies where women reside with their husband's family after marriage, girls' future earnings become a part of the husband's household earning and is therefore not of any benefit to her parents, this consideration is another factor discouraging households to invest in girls (Aslam, 2007).

Empirical studies on returns to education in Pakistan have shown that the rate of return on girls' education is higher than the rate of return on boys' education for all levels of education. These differences are large and for some levels of education, the return to girls' education is more than double of that to boys' education. These differences persist after tackling self-selection of women in waged work and endogeneity of wages (Aslam, 2007). Despite these higher returns to girls' education, households in Pakistan invest more in the education of boys. Boys are more likely to be enrolled in school, once enrolled they receive higher education expenditures and are more likely to be sent to expensive private schools (Aslam 2009, Aslam & Kingdon, 2008).

From a human capital investment view, households in Pakistan could gain by investing in girls' education. The continued existence of low levels of investment in girls schooling should then be viewed from a gender theory perspective.

This perspective would suggest that gender division of labour and gender roles lead households to invest more in the education of boys. Gender roles are tasks, obligations, norms of behaviour and sanctions associated with a gender. That means, that gender roles shape expectations regarding functions appropriate for boys and girls (men and women) in social institutions such as the family. Gender roles differ for men and women in all societies but there is considerable variation between societies. Gender theorists contend that gender roles are products of historical processes. Historically, societies faced different living conditions than those in the contemporary world. These conditions led men and women to take up different tasks. That is, the sexual division of labour. The continued performance of these tasks by members of a particular sex led to the reification of these tasks as tasks naturally performed by that sex (Mies, 1981; Boserup, 1970; Alesina et al, 2013). Societies progressed and living conditions improved. Improvement in technology and improved societal organization no longer mandate that certain tasks only be performed by members of a particular sex. However, gender roles continue to be associated with the members of a particular sex. Gender roles are solidified to the extent that they are perceived to be natural, naturally given or part of the natural order of things. That it is the responsibility of men to work outside the home and earn a living and that women's responsibility is domestic work are examples of gender roles. It is considered natural that women perform domestic work of cooking and cleaning and are primarily responsible for taking care of the children. The uncritical acceptance of these roles leads men and women solidifies their status as natural (Butler 1986;

1988; 2006). This implies that in societies where women are not expected to work for wages, households will not invest in their education if education is viewed by households as a mean to secure future earnings.

The gender division of labour also affects labour market conditions for men and women. Women's expected participation in domestic and care work due to the sexual division of labour is among the barriers to women's participation in the labour markets. Having children significantly reduce women's participation in the labour market (Aslam & Kingdon, 2008). Gender division of labour also leads to discrimination against women in the labour markets. Since women are expected to take responsibility of domestic and care work, employers believe that women are unable to provide enough time and energy to their employer. They are believed to take more leave from work due to their household responsibilities. Gender wage gap, over and above the gap that is explained by men and women's professional choices, continues to exist (Ponthieux & Meurs, 2015). This gap may be due to discrimination against women in the labour markets. Again, the gendered division of labour that shapes labour markets outcomes for men and women, could affect households' investment in the education of girls.

Societies based on the gender division of labour morph into gender hierarchal societies. Societies are said to be patriarchal or having patriarchal gender relations when the relationship between men and women at all societal levels is skewed in favour of men. That means visibly men have more access and control of society's economic, political and intellectual resources. Somewhat less visibly, that means, power relations between men and women are skewed in favour of men at all societal levels. Power relations between genders are called gender relations. An aspect of societies with patriarchal gender relations is the devaluation of women and girls. The economic, political and social advantage of men over women in these societies and the power associated with men leads to the lower valuation of women/girls as compared to men/boys. Women are considered inferior to men physically, intellectually, morally, emotionally and psychologically. The widespread prevalence of son-preference in India, Pakistan and China is testament to the devaluation of women/girls in patriarchal societies. Households are discouraged from investing in the education of girls in societies with patriarchal gender relations. That is, if households seek to improve their socio-economic status through educating their children, and if the societal contexts favours boys over girls, it is logical for households to invest in boys than in girls.

Households may also be reluctant to encourage girls' education (and not invest in the education of girls) in patriarchal social contexts to control women's sexuality. Households fear that sending their girls to school could provide girls the opportunity to intermingle with boys and girls of their own age unsupervised. This intermingling may lead to sexual behaviour considered unacceptable. It was observed by the author during her fieldwork that this fear of teenage girls intermingling with boys outside their immediate family was a concern behind households' decision to send their girls to school. Girls' access to any public space including schools is restricted by households.

4.2.3 Women as Decision Makers and Equality between Boys and Girls

The above discussion hints that in patriarchal societies, households are discouraged from investing in the education of girls. Households do not invest equally in the education of boys and girls due to several reasons. First, households perceive lower returns to education of girls. This can be because girls leave their natal homes after marriage and their earnings become a part of their affinal household. Perceptions of lower returns to girls' education can also be grounded in the conditions of the labour market. In this framework, women in a decision-making position within the household may not be motivated to invest equally in the education of boys and girls. For the decision to invest household resources where the household expects maximum returns, the sex of the economic agent taking the investment decision is irrelevant. Lower returns to girls' education due to their lower participation in the labour markets and lower wages will lead to lower investments in their education fueling the cycle of lower participation and lower wages. Therefore, women as household decision makers may not reduce inequality of educational investments made by the households.

As discussed earlier, households do not invest in the education of girls, if the perceived role of women and girls is household domestic work and care of children as per the prevailing gender division of labour in the society⁵³. If boys/men are expected to work for wages, then households will invest more in the education of boys. Furthermore, the gender division of labour will lead households to not invest in girls' education when resources are scarce. These considerations will inform decisions of both male and female decision makers in households.

⁵³ This is more likely if education is not intrinsically valued but is valued for its returns in the form of earned wages and income.

Hence, women decision makers cannot be expected to reduce inequality of investments in education of boys and girls.

Pervasive son-preference leads to higher investment of households for schooling and education of their boys. In patriarchal societies, economic, political and social advantage is with the male sex, then, households seeking to increase their economic, political and social standing, invest resources on boys. If the aim of decision makers in the household to increase their social standing, then women decision makers should not be expected to divert household resources to girls.

Control over the sexual behaviour of girls serves as deterrent to girls schooling. Ideas regarding the appropriate sexual behaviour of girls are harboured by men as well as women in the society. Some women in rural Pakistan support the idea that girls and women who transgress boundaries on sexual activity imposed on them should be put to death by their families. Such women, if in decision making role, cannot be expected to be more likely to send their girls to school.

In addition to the reasons cited above, women's internalization of the inferior status of women/girls (and genders other than that of a man) would also lead women to ignore their own role in the perpetuation of gender inequalities. Patriarchal gender relations that favour men, devalue women and give men power over other genders, are sustained through several processes. Among these is the internalization of women's inferior status by women themselves. "Acute inequalities survive by making allies out of the deprived. The underdog comes to accept the legitimacy of the unequal order and becomes an implicit accomplice" (p.9 Sen, 1987). "Deprived groups may be habituated to inequality, may be unaware of possibilities of social change, may be hopeless about upliftment of objective circumstances of misery, may be resigned to fate, and may well be willing to accept the legitimacy of the established" (p.9 Sen, 1987).

Women's lower status in patriarchal societies shapes women's perceptions regarding their own rights (and by extension the rights of other women and girls), needs, obligations and contribution. These perceptions (regarding rights, needs, obligations and contribution) can be at the level of households or at the societal level, meaning that women may perceive that within the household their right to household income is lower than that of men as they (by staying engaged in house work only) contribute less than men to this income. By extension, they may perceive that

their rights in societies are less than those of men due to their lowered perceived contribution to society (Sen, 1987). This internalized inferiority amongst women might additionally lead women (even in decision making position) to continue favouring boys in the household.

Societies with patriarchal gender relations are also marred by gender-based violence. As noted in the introduction of the thesis, violence against women is pervasive in Pakistan. This violence deters women to overtly resist unequal gender relations. Moreover, it leads to the reinforcement of internalized inferiority among women. "... a woman who is subjected to violent abuse when she expresses her own opinions may start to withhold her opinions and eventually come to believe that she has no opinions of her own. When control becomes internalised in this way, overt use of power over is no longer necessary. *Many groups of people have controlled their own behaviour and sense of self in this way.*" (p. 12, Rowlands, 1998, emphasis my own). Fear of violence may also lead women to perpetuate the unequal gender order even when they assume decision making roles in households. "...'internalised oppression' places internal barriers to women's exercise of power, thereby contributing to the maintenance of inequality between men and women." (p.14 Rowlands, 1998).

4.2.4 Women's consciousness and equality between boys and girls

The above discussion throws light on obstacles to achieving gender equality. These obstacles can be overcome through the transformation of gender relations and alteration of the foundations of patriarchal gender relations. Three fundamental components of the foundations of patriarchy are its material foundations (physical resources, assets, land, capital), its ideological foundations and institutional foundations. This brings us back to the concept of women's empowerment described above. Hence, altering gender relations means empowering women. However, women's empowerment entails that ideologies that justify unequal gender relations be rebuked and replaced. It also means that physical resources be redistributed among men and women. And that economic, political and societal institutions that perpetuate unequal gender relations (or are based on unequal gender relations) be dismantled and replaced or reorganized (Batliwala, 2007).

The process of changing the ideologies that justify unequal gender relations requires raising consciousness of women. Gender inequality is viewed by men and women as natural. Without an

awareness that the unequal gender context is a result of a historical process that can be undone through human effort, individual and collective, individuals are not motivated to change. Education and politics have the potential of raising consciousness (Sen, 1987). Individuals who either recognize that gender hierarchies are not natural and can be undone by human effort will be willing to work to improve girls' status in societies. Or individuals who believe that gender hierarchies are unjust and unfair (regardless of their natural or constructed character) will work towards improvement of status of women in societies. That means that for individuals (men or women) to work towards reducing inequalities between men and women and boys and girls (including those in education) they must have awareness or consciousness of gender.

In the following analysis therefore, it is hypothesized that women in decision making roles may not use their role to reduce inequality in education expenditures between boys and girls. Furthermore, it is hypothesized that women who exhibit greater consciousness of gender equality are more likely to reduce inequalities between boys and girls at the household level. Inequality between boys and girls can manifest in various ways, the analysis here is restricted to inequality in households' investment in human capital of boys and girls proxied by the expenditures incurred by households for education and schooling of girls and boys. Furthermore, the explanatory variables of interest, that is, women's role in household decisions and women's consciousness are also restricted to the domain of education. That is, women's role in household decisions regarding children's schooling and school budgets is the first explanatory variable and women's consciousness of equality in education is the second variable of interest. These variables, the empirical and identification strategies are explained in the sections below.

4.3 Data and Estimation Strategy

The analysis is based on the dataset introduced and described in the previous chapters, the Pakistan Rural Household Panel Survey (PRHPS) (IFPRI & IDS; 2012-2014) and the primary data collected from the sub-sample of the survey appended to the original panel.

Households' expenditure on schooling of children is the dependent variable of the analysis. The dependent variable was also used in the analysis in the previous chapter. From each household, the primary woman respondent has reported details of schooling and education of all children in the household. This data includes if children aged 5-18 in the household were attending school at the time of the survey. For children who were not attending school, the data reports if these children had ever attended school. For children who were attending school, expenditures incurred by the household per year on 1. School fee 2. Expenditure on books and stationery and 3. School uniform⁵⁴ for each child is reported. These data, children's schooling and schooling expenditures is used to construct the dependent variable.

The first variant of the dependent variable is the share of households' total expenditure on schooling spent on schooling of girl children. To construct this variable, households reported expenditure on school fee, books and stationery and school uniform is combined for all children of the school age group. Then, this total expenditure is divided by the number of children of that age group to arrive at the per child education expenditure of the household. Thereafter, households reported expenditures on these is added for girl children of the school age group. This expenditure is then divided by the number of girls in the school age to arrive at the per girl expenditure. The per girl expenditure is then divided by the per child expenditure to arrive at the share of households' expenditure spent on the schooling of girls. The analysis is conducted for children in two age groups, children of the primary school age (ages 5-10) and children of secondary school age (ages 11-16). To calculate the shares, all children of the school age who were not attending school or had never been to school are treated as having zero expenditures on their schooling. Table 4-1 shows average shares of households' expenditures spent on schooling of girls and boys as well as the annual per child expenditures of households separately for boys and girls.

⁵⁴ Households have also reported the expenditures incurred by the household on children's travel to and from school, these are not included in the calculation of household expenditures due to the inclusion of distance to school as selection variable in the Heckman Model.

Table 4-1: Share of Households' Education Expenditures for Boys and Girls and Expenditures incurred per Child

Variable	Girls (N)	Boys (N)
Share of Households' Education Expenditures (Ages 5-10)	0.58*** (2301)	0.79 *** (2463)
Share of Households' Education Expenditures (Ages 11-16)	0.43*** (2055)	0.82*** (2175)
Annual expenditure per Child (Ages 5-10)	1571*** (2300)	2215*** (2463)
Annual expenditure per Child (Ages 11-16)	1656*** (2055)	3064*** (2175)

Note: Expenditures are in Pakistani Rupee.

It is evident from Table 4-1 that households spend higher shares of their total schooling expenditures on the schooling of boys. If girls and boys received similar expenditures then these shares would be 1, that is, the per girl or the per boy expenditure would equal households per child expenditures. However, the per girl expenditures are considerably lower than 1, for both age categories of children. That means that girl children receive less than the households' average expenditures on the education. Table 4-4 also shows the average per child expenditures of household for education of children. The per girl child expenditures of household are significantly lower than households' expenditures per boy child. In the age group (11-16) the per boy expenditures are 46 percent higher than the per girl expenditures.

In the rural areas of Pakistan there are a large number of children of the school age group who do not attend school. This is corroborated by the dataset being used in the study. The expenditure on schooling for children out of school in the dataset is, of course, missing. If these expenditures are allowed to remain missing and households' shares of expenditures for boys and girls are calculated in a similar way as before, the shares are as shown in Table 4-2 below⁵⁵.

⁵⁵ Appendix Table A25 shows the shares of households' education expenditures restricted to sample of households with both boys and girls of that age present.

Table 4-2: Share of Households' Education Expenditures for Boys and Girls and Expenditures incurred per Child (Missing Data not accommodated)

Variable	Girls (N)	Boys (N)
Ages 5-10	1.0*** (1326)	1.17*** (1656)
Ages 11-16	1.0*** (881)	1.3*** (1400)
Annual expenditure per Child (Ages 5-10)	2659*** (1359)	3196*** (1707)
Annual expenditure per Child (Ages 11-16)	3833*** (888)	4693*** (1420)

Note: Expenditures are in Pakistani Rupee.

Table 4-2 indicates fewer households have positive girls' expenditure shares as compared to Table 4-1. That is, there are a number of households that have no expenditures on the education of school aged girls or that the girls are out of school. Second, for households that send girls to school, the average share of education expenditures received by the girls is lower than that received by the boys. The presence of large number of children out of school suggest that there is a type of household that sends children to school. The above comparisons are based on households' expenditures on school fee, school uniform and books and stationery. These expenditures do not include the expenditures incurred by households on children's travel to and from school. An argument can be made that households spend higher on travel of girls to and from school as girls are provided with safer and reliable means. Appendix A26 compares the shares and average expenditures of households for boys and girls including the travel costs. The table compares expenditures of households that have children of the both sexes present in the respective age groups and were attending school at the time of the survey. As evident from the table, the differences in the shares of education expenditures received by girls and boys remain significant.

Table 4-3 Percentage of Children Aged 5-16 not attending School, by Sex

Children out of School	Boys (Age 5-16)	Girls (5-16)
Out of School	39***	60***
Total	2976	2788

***Fisher's exact = 0.000

Table 4-3 shows the percentage of children of the school age (5-16) not attending school either because they had never enrolled or had dropped out. The table shows that out of the 2976 observations for boys aged 5-16 across the four rounds of the survey, 40 percent were not attending school. The table also shows that of the 2788 observations for girls aged 5-16, 60 percent were not attending school.

Among the two main explanatory variables of interest for this analysis is women's role in household decisions regarding children's education. The decision-making module in the female questionnaire was designed to interview three women from each household⁵⁶. The module required the respondents to state who were the primary decision makers of the household regarding various aspects of the household life. The criteria for selection of respondents for these modules was: the main respondent was interviewed who, in most of the cases, was the spouse of the head of the household, the oldest woman of the household and the youngest woman in the household over the age of sixteen. A dummy variable is created based on the responses of the primary woman respondent of the household to the following four questions: 1. Who in the household has the final say about whether children attend school? 2. Who in the household allocates budget for children's education? 3. Who in the household decides/decided how much education girl children can attain? 4. Who in the household decides/decided how much education boy children can attain? Data on the former two is available for round 3 and round 4 only. Data on the latter two are available for rounds 2, round 3 and round 4 (Table 4-4). The variable takes value 1 if the respondent reported participation in all decisions that were asked in that round. This criterion is set as all rounds do not have all four questions. This binary variable allows to use all data while giving equal weightage to each decision. Table 4-4 shows the percentage of women out of the total respondent women who reported that they alone or with other members of the family participated in the decisions.

⁵⁶ Majority of the households are extended family households with multiple generations residing together, hence it is possible to have more than two adults in each household.

Table 4-4: Household Decisions Regarding Education and Women’s Participation

Decisions Category	Percentage in category “Yes” (%)
Who in the household decides to allocate budget for Children’s Education	45
Who in the household decided/decides how much education should female children of the household should receive?	46.7
Who in the household decided/decides how much education should male children in the household should receive?	47
Who has the final say in the household whether children should attend school or not?	60

Note: The table shows proportion of households where women report participation in decisions (1=Yes) and where women report no participation in decisions (0=No). The Binary categories have been created from list of responses of women, this list included responses as “myself”, “My husband and I”, “My husband”, etc. All those responses where women (not necessarily the respondent woman, for example if the response was “My mother”) are reported to have participated in the above decision are treated as (1=Yes). These responses are of the main female respondent from the household.

Table 4-4 shows that over half of the women respondents did not participate in decisions regarding schooling expenditures and regarding how much education boys and girls receive. Women seem to have more say in household decisions regarding sending children to school. In sixty percent of households, women had the final say on whether their children go to school or not. Women’s responses varied to expressions such as “myself”, “me and my husband”, “my husband” etc. All responses where the woman included herself as a decision maker are translated into the category “yes” that means that the woman participated/participates in these decisions.

Women’s consciousness is gauged from their response to the following statement “*It is more important to send a boy to school than a girl*”, if a woman disagrees to the statement, she is considered having consciousness of gender equality, otherwise not. A binary variable indicating woman’s consciousness is used. The variable takes value 1 if the woman exhibits consciousness towards gender equality. However, data on this variable is available in Rounds 3 and 4 only. For round 2 of the survey, woman’s consciousness is gauged from her response to the following question “*How much education would you want your daughter to attain?*”. If a woman’s response is that she wants her daughter to complete at least high school level of education (10 years of schooling), she is coded as having consciousness towards gender equality. Table 4-5 shows frequency of women’s responses⁵⁷.

⁵⁷ Round 1 of the panel does not have a decision-making module, hence it had to be excluded from the analysis.

Table 4-5: Women respondents’ consciousness of gender equality

	Percent %
It is more important to send a boy to school than a girl. (Disagree; Binary Indicator “Conscious=1”	67
How much education would you like your daughter to have? (Aspirations > 10 Grade)	51

Table 4-5 shows that a majority (67 percent) of women disagree to the statement that it is more important to send boys to school than girls. Women who agree to the statement may hold that opinion because they believe that returns to girls’ education are lower than those of boys. They may hold the opinion that girls do not benefit from receiving education as their tasks are household activities that do not require formal schooling. Or women who agree to the statement may discriminate against girls and women due to their internalized inferior status. It is recognized that an agreement or a disagreement to the statement does not linearly reflect women’s consciousness of gender equality. However, it reflects that women believe that boys and girls deserve different treatment because of their sex. The education aspirations, similarly, does not reflect women’s consciousness of gender inequality unambiguously. The idea behind it was that in round 1 of the survey, women were asked to state their aspirations for the education of boys and girls both. If women respondents reported lower aspirations for the education of girls than boys, it was taken as indicative of women’s beliefs that boys and girls deserve different treatments. However, as the data on women’s decision participation is not available for round 1, round 1 is not used in this analysis. For round 2 of the survey, women’s education aspirations were asked only for their girl children. Hence, a comparison with their aspirations regarding boys cannot be made. However, the 10 years of schooling benchmark is reasonable indicator of women’s consciousness of gender equality in education. Aspiring for 10 years of schooling for girls means that women aspire that their daughters educate over and above just reading and writing. Furthermore, by aspiring to keep their daughters in school until age 16/17 when 10 years of schooling is completed, women exhibit that they do not wish for their daughters to be married off in their teenage years.

These two explanatory variables of interest warrant further attention. In line with theoretical perspectives on women’s empowerment, the analysis presumes that women’s participation in household decisions and women’s consciousness are instrumental for reduction of inequalities at the household level. However, it can be argued that the two variables capture the same things (and thereby are endogenous). It can be shown, by identifying some of the covariates

of the two variables, that these are not the outcome of the exact same processes. A comparison of women who report that they participate in household decisions regarding small/everyday expenses with women who reported that they did not participate in these decisions is made using round 3 of the survey (year 2013-14).

Table 4-6 compares the primary female respondents from the households. The comparison is restricted to married primary female respondents⁵⁸. The primary female respondents are divided into two groups; those who alone or together with other members of the household took decisions regarding everyday expenditures in the household and those who did not participate in these decisions.

In Table 4-6, starting from row one of the table, we see that overall 58 percent of the primary female respondents either alone or with members of the family decided on small expenditures incurred by the household. These women, who report participating in decisions are on average older than those who report not participating in decisions. Although the differences in the average age of women in the two groups is statistically significant, the difference is not large, women who do not participate in decisions have the average age 39 years and those who do have the average age of 42 years. Table 4-6 then shows three measures of women's education. The measures are literacy, school attendance and the number of years of schooling. Literacy is defined as the ability to read and write in any language and the ability to perform simple numeracy. Among the women who participate in household decisions, 17 percent are literate. Among the women who do not participate in household decisions, 13 percent are literate. These differences appear to be statistically significant at 5 percent. There do not appear to be any significant difference in the schooling of the two groups or the number of years of schooling undertaken. 18 percent of women who participate in decisions report ever attending school and 17 percent of women who do not participate in household decisions report attending school. Likewise, women who participate in decisions have attended 1.2 years of schooling on average while those who do not participate have attended 1 year of school on average. These differences are not statistically significant.

⁵⁸ A comparison table of all primary female respondents is provided in appendix table (A27).

Table 4-6 Women who Participate, Women who do Not Participate in Household Decisions (PRHPS Round 3, 2013-14)

	Participates in Decisions (%)	Does not Participate in Decisions (%)	p-value ¹ (Pearson's Chi2)
Number of Observations	963 (58)	700 (42)	
Age	42***	39***	
Education			
Percent Literate	17**	13**	0.037 (.034)
Percent Attended School	18	17	
Number of years of Schooling ²	1.2	1.0	
Employment and Income			
Household Annual Income per person (in PKR)	42910	38241	
Household Income Quintile ³			0.000 (0.000)
First	49	51	
Second	60	40	
Third	62	38	
Fourth	60	40	
National Identity Card	86	84	
Percent Employed	23***	16***	0.001 (0.001)
Own Income (in PKR)	11504***	6387***	0.0001
Asset Ownership			
Land, House, Car	1.9	1.4	
Large Livestock	5.7	6.4	
Small Livestock	9.2	9.1	
Consumer Durables	8.9	9.1	
Mobile Phone	12	5.7	0.000 (0.000)
Religion and Ethnicity			
Religion			0.004 (0.003)
Muslims	58.5	41.5	
Hindus and Christians	34	66	
Ethnicity			0.000 (0.000)
Punjabi	76	24	
Sindhi	28	72	
Baloch	30	70	
Pashtun	60.5	39.5	
Other	60	40	
Natal Family and Marriage			
Number of Children	3.4	3.3	
Sons	1.9	1.8	
Daughters	1.4	1.4	
Sons to Daughters	1.4	1.3	
Father's Education ⁴	0.61	0.65	
Mother's Education ⁵	0.1	0.1	
Age at Marriage ⁶	19.6***	20.6***	0.0032
Age at First Birth ⁷	21.8***	23***	0.0000

1. p-value of Fischer's Exact test. p-values in parentheses correspond to Pearson's Chi. p-values higher than .1 are not reported.

2. Data on schooling of 16 women is missing, averages based on 1647 observations.

3. Income quintiles are based on households' annual income per person.

4. Data on Father's Education missing for 103 observations, averages based on 1560 observations.

5. Data on Mother's Education missing for 103 observations, averages based on 1560 observations.

6. Data on Age at marriage missing for 103 observations, averages based on 1560 observations.

7. Data on age at first birth missing for 103 observations, another 65 women had not given birth. Averages based on 1495 observations.

In order to assess if households with different levels of income have different participation of women in the household decisions, Table 4-6 shows the average annual income per person of households. There are no statistically significant differences between the average annual income per person of households of women who participate in decisions and those who do not participate in decisions. However, it appears that on average, women in the category of households with the lowest annual income per person, that is, in the first income quintile, have lower participation in household decisions. From among the women in the first income quintile, 49 percent of women participated in household decisions. In the second, third and fourth quintiles, around 60 percent or more participate in household decisions. Women's own earned income and participation in paid work appears to be significantly correlated with their participation in household decisions regarding small expenditures. Among the women who participate in these decisions, 23 percent report having paid employment while among the women who do not participate in these decisions, 16 percent have paid employment. The differences in the average annual income earned by women are large and statistically significant. Women who participate in household decisions have an average annual income of PKR 11500 while the average annual income of women who do not participate in decisions have an average annual income of PKR 6400. As seen in chapter 1, women's participation in households' expenditure decisions was more likely if women were receiving remittances. The correlation with women's own income and the association with remittance receipts suggests that when women have income of their own, or have money that they themselves control, they are also likely to have a voice in how the money is spent.

A look at the asset ownership of women who participate and do not participate in household's expenditure decisions shows that there are no significant differences in the ownership of large or small assets, nor are there statistically significant differences in the ownership of large and small livestock. However, it appears that women who participate in household decisions are more likely to own mobile phones. Among the women who report participating in household decisions, 12 percent have their own mobile phones while among the women who do not participate in household's expenditure decisions, 5.7 percent own mobile phones.

Table 4-6 also provides a glance at the participation of women in household decisions in households belonging to different religions and ethnicities. Here, the reported percentages may be read differently than the rows above. The reported percentages refer to the percentage of women

who participate (or do not participate) in decisions within a religious or ethnic group (and not the percentage of women belonging to a religious or ethnic group among women who participate or do not participate). In Muslim households, 58.5 percent of women report participating in household decisions⁵⁹ and 41.5 percent of Muslim women do not participate in household's expenditure decisions. Among the non-Muslim women, 34 percent participate in household decisions regarding small expenditures while 66 percent do not participate in these decisions. It should however be noted that the number of non-Muslim women is low (38 women) and most of these women belong to the province of Sindh. A further look at the participation of women from different ethnicities elaborates the second point further. So, for women belonging to Punjabi households⁶⁰, 76 percent participate in decisions and 24 percent do not participate. In contrast, among women belonging to Sindhi households, 28 percent participate in household decisions and 72 percent do not participate in household decisions regarding small expenditures. Among the Baloch and Pashtun women, 30 percent and 60 percent participate in household decisions. The patterns point to perhaps an influence of cultural factors behind women's role in household decisions.

Table 4-6 also compares the number of sons, daughters and the number of children of women who participate and those who do not participate in household decisions regarding small expenditures. There do not appear any statistically significant differences between the number of children of women who participate in decisions and those who do not participate in decisions. The average number of children of women who participate in household decisions is 3.4 while the average number of children of women who do not participate is 3.3. Similarly, there are no statistically significant differences between the number of boys or girls or the ratio of sons to daughters that women have.

⁵⁹ The reported percentages record the percentage of women in a given religion or ethnicity who participate and who do not participate in household's expenditure decisions. These percentages are read differently from the percentages provided earlier. So for example, in row "Mobile Phones", 12 percent means that 12 percent of the women who participate in household decisions own a mobile phone and 5.7 percent of women who do not participate in household decisions own mobile phones. However, the percentage in row "Muslims" means that 58.5 percent of Muslim women participate in household decisions and 41.5 percent do not. It may not be read as that 58.5 percent of women who participate in household decisions are Muslims.

⁶⁰ There is a difference between "women from Punjab" and "women from Punjabi households". Women from Punjab refers to women who belong to and live in the province of Punjab. Women from Punjabi households refers to women who may not be living in the province of Punjab but belonged to the ethnic group Punjabi. Although, most women in Punjab are from the ethnic group Punjabi, it is possible that some households living in the province of Khyber Pakhtunkhwa were Punjabi. This distinction is made clear by considering women in Baloch Households. So although the province of Baluchistan was excluded from the survey, there are women in the dataset belonging to Baloch Households. That means, these households are of ethnic Baloch, but they live in either Punjab, Sindh or Khyber Pakhtunkhwa province. Despite all this, the province of Punjab is predominantly Punjabi, the province of Sindh is predominantly Sindhi (excluding Karachi) and the province of Khyber Pakhtunkhwa is predominantly Pashtun.

In the last part of Table 4-6, the characteristics of woman's parents and the circumstances of her marriage and children are also reported. Observations on these data are fewer than the observations on which rest of the table is based. The number of primary female respondents who are married is 1663. Data on natal family, age at marriage and age at first birth is available for 1560 women. There are no statistically significant differences in the years of schooling of parents of women who participate and those who do not participate in household decisions. There do appear to be small but statistically significant differences between their age at marriage and age at birth. The average age of marriage of women who participate in household decisions is 19.6 years and the average age at the first birth is 21.8 years. On the other hand, women who do not participate in decisions have the average age at marriage 20.6 years and the age at first birth 23 years.

Table 4-6 has only provided static comparisons of the averages of women who participate and women who do not participate in household decisions. These static comparisons do not convey any causal association between the covariates. These comparisons also cannot suggest the direction of association, that is, is it women who participate in household decisions who earn more income or women with higher incomes participate more in household decisions. However, it can still be pointed out that participation in paid work and higher own income could be a factor associated with women's increased participation in household decisions. Moreover, there appears to be strong cultural influences on women's participation in household decisions. More women in Punjabi households participate in household decisions than women in Sindhi, Baloch and Pashtun households. This observation can be read with the observations made in Appendix Table A1, that is, women in Punjab, Sindh and Khyber Pakhtunkhwa have different levels of education attainment and different rates of participation in the labour market. It might be that culture affects both women's education and participation in labour markets and their participation in household decisions. Or that culture affects women's participation in household decisions that in turn affects their education and participation in labour markets. Or that culture affects women's education and participation in labour markets that in turn affects their participation in household decisions. In any case, culture appears to be an important covariate of women's position in households and in the public sphere.

In Table 4-7, women who exhibit consciousness towards gender equality in education with women who do not exhibit such consciousness are compared. The comparison is based on data on

the primary female respondent of the decision-making module (that is, same women as in Table 4-6)⁶¹. Among the primary female respondents, women are categorised as being “conscious” if they disagree with the following statement: “It is more important to send a boy to school than it is to send a girl”. Women who agreed to the statement are categorised as not conscious towards gender equality in education.

Table 4-7 shows that women who exhibit consciousness are significantly more likely to be literate and to have attended school. Among the women who exhibit consciousness towards gender equality, 19 percent were literate compared to 7.9 percent among of those who do not exhibit consciousness. Similarly, 22 percent of the women who exhibit consciousness have attended school while around 10 percent of those who do not exhibit consciousness have attended school. Although the number of years of schooling is abysmally low for both groups, women who exhibit consciousness towards gender equality in education have on average 1.4 years of schooling, compared to 0.6 years of average schooling of women who do not exhibit consciousness towards gender equality. If these associations are contrasted with the apparent lack of association of education with women’s participation in decision making, it may be noted that women’s education does not seem to be correlated with women’s role in household decisions but it is correlated with women’s consciousness towards gender equality.

⁶¹ Comparison of all women, married and unmarried is provided in Appendix Table A28

Table 4-7 Women who Exhibit Gender Consciousness (PRHPS, Round 3, 2013-14)

	Conscious (%)	Not Conscious (%)	p-value ¹ (Pearson's Chi2)
Number of Observations	1077 (65)	586 (35)	
Age	40.5	41.3	
Education			
Percent Literate	19***	7.6***	0.0000 (0.00)
Percent Attended School	22***	9.7***	0.000 (0.000)
Number of years of Schooling ²	1.4***	0.6***	0.0000
Employment and Income			
Household Annual Income per person (in PKR)	44228***	34897***	0.0042
Household Income Quintile ³			0.012 (0.012)
First	60	40	
Second	62	38	
Third	68	32	
Fourth	70	30	
National Identity Card	86	85	
Employed	19.5	21.3	
Own Income (in PKR)	9103	9803	0.6142
Asset Ownership			
Land, House, Car	2	1	
Large Livestock	6.2	5.6	
Small Livestock	10	7	
Consumer Durables	11	5.3	0.0000
Mobile Phone	12	5	0.0000
Religion and Ethnicity			
Religion			0.0000
Muslims	65.5	35.5	
Hindus and Christians	32	68	
Ethnicity			0.000 0.000
Punjabi	74	26	
Sindhi	47	53	
Baloch	44	56	
Pashtun	74	26	
Other	67.5	32.5	
Natal Family and Marriage			
Number of Children	3.3	3.5	0.0124
Sons	1.8	2	0.0019
Daughters	1.4	1.5	
Sons to Daughters	1.3	1.4	
Father's Education ⁴	.74	.43	
Mother's Education ⁵	.13	.09	
Age at Marriage ⁶	20	20	
Age at First Birth ⁷	22	22	

1. p-value of Fischer's Exact test. p-values in parentheses correspond to Pearson's Chi. p-values higher than .1 are not reported.

2. Data on schooling of 16 women is missing, averages based on 1647 observations.

3. Income quintiles are based on households' annual income per person.

4. Data on Father's Education missing for 103 observations, averages based on 1560 observations.

5. Data on Mother's Education missing for 103 observations, averages based on 1560 observations.

6. Data on Age at marriage missing for 103 observations, averages based on 1560 observations.

7. Data on age at first birth missing for 103 observations, another 65 women had not given birth. Averages based on 1495 observations.

The difference in household's average annual income per person of the two groups of women is statistically significant. Women who are not conscious appear to belong to poorer households. This is also seen in the distribution of the women in the two categories in the four income quintiles. It is likely that for men and women in the lowest income quintiles, concerns regarding fulfilment of basic subsistence trump concerns of equality between the sexes. That is, in the first income quintile, 60 percent of women exhibit consciousness towards gender equality and in the fourth quintile 70 percent of women exhibit consciousness towards gender equality. What is interesting to note is that women's own income is not significantly different between the two groups of women. This is again in contrast to the categorization of women based on their decision participation. It was seen that women who participate in household decisions have statistically significantly higher incomes than those who do not participate. While the average income of women who exhibit consciousness is not statistically different from the average income of women who do not exhibit such consciousness. Participation of women in paid work is also not significantly different.

The asset ownership of women who exhibit greater consciousness appears to be higher than those who do not exhibit consciousness. This could be because overall more women in higher income quintiles exhibit consciousness towards gender equality. Women in relatively richer households are expected to have more assets. It should be noted that these differences in asset ownership are not statistically significant. Except for ownership of consumer durables and mobile phone. Now, this is interesting, consumer durables also include TVs. If women get exposed to gender egalitarian ways of living through TVs, it could be that women who own TVs also become more conscious of gender equality. Similarly, for mobile phone ownership, women who exhibit consciousness are more likely to own their mobile phones.

The cultural influences decipherable in women's participation in household decisions are also, to some extent, mirrored in women's consciousness. While 74 percent of women from Punjabi households disagree to the statement, only 47 percent in Sindhi and 44 percent in Baloch households disagreed.

The comparison of the covariates of the two explanatory variables shows that these two variables can be considered as distinct. Therefore, both the variables are used in the analysis below. There are limitations of the dataset. The panel is unbalanced as round 4 was limited to only a sub-

set of the sample. Household consumption expenditures as an important explanatory/control variable is not available for round 4⁶², hence household income is used instead. Data on women's decision-making participation is not available for round 1 of the survey. So, for the analysis below, rounds 2, 3 and 4 are used.

⁶² Households' expenditures on children's schooling are available for all rounds.

4.4 Estimation Strategy

The following equation is estimated to assess the effects of women’s decision-making regarding children’s education and women’s consciousness on households share of education expenditures spent on girls:

$$GirlsShare_{i,t} = \alpha_1 Dec_{i,t} + \alpha_2 Conscious_{i,t} + \alpha_3 Dec * Conscious_{i,t} + \alpha_4 X_{i,t} + \omega_i + \Phi_t + \epsilon_{i,t} \dots\dots \text{Equation (4.1)}$$

$GirlsShare_{i,t}$ is the share of household i’s education expenditure spent on the education of girls in time period t. $Dec_{i,t}$ is a binary variable that takes value 1 if women respondent from household i at time period t reports participating in decisions regarding education of children. $Conscious_{i,t}$ is a binary variable that takes value 1 if women in household i at time period t exhibits consciousness towards gender equality in education. $X_{i,t}$ are characteristics of household i at time period t including households annual per person income, household size, ratio of adult women to men in the household, ratio of girls to boys in the household. ω_i are the household fixed effects and Φ_t are year fixed effects.

To estimate the effect of the explanatory variables on the dependent variable after controlling for selection of households into sending children to school, the following equation is estimated.

$$\ln Eduexp_{j,i,t} = \beta_0 + \beta_1 GirlChild_{j,i,t} + \beta_2 Dec_{i,t} + \beta_3 Dec_{i,t} * GirlChild_{j,i,t} + \beta_4 Conscious_{i,t} + \beta_5 Conscious_{i,t} * GirlChild_{j,i,t} + \beta_6 Dec_{i,t} * Conscious_{i,t} + \lambda C_{j,i,t} + \theta X_{i,t} + \pi_i + \Omega_t + \epsilon_{i,t} \dots\dots\dots \text{Equation (4.2)}$$

Where, $\ln Eduexp_{j,i,t}$ is the log of education expenditure of household i at time period t on child j. $GirlChild_{j,i,t}$ is a dummy variable that equals 1 if the child j, in the household i, at time period t is a girl. $Dec_{i,t}$ is women’s participation in children’s education decisions in household i at time period t. $Conscious_{i,t}$ is the consciousness of women in household i, at time period t. The estimated coefficient on the interaction of indicators of women’s participation in decision-making and dummy variable $GirlChild_{j,i,t}$, β_3 , shows the impact of women’s participation in decisions concerning children’s education on expenditures on girls. Furthermore, the coefficient on the interaction between indicator of women’s consciousness of gender equality in education and dummy variable $GirlChild_{j,i,t}$, β_4 , captures the impact of women’s consciousness on households’ expenditure on girls’ education. The coefficient of the interaction of three terms, $Dec_{i,t} *$

$GirlChild_{j,i,t} * Conscious_{i,t}, \beta_6$ captures the effect of conscious women in decision making roles on the education expenditures for girls education. $X_{i,t}$ is a vector of household i's demographic and economic characteristics in time period t, $C_{j,i,t}$ are the characteristics of child j, in household i, at time period t, π_i are the village fixed effects, Ω_t are the year fixed effects and $\mu_{i,t}$ is the error term.

As mentioned earlier, the dataset includes children of the school-going age group who do not attend school⁶³. This represents that households where children attend school are self-selecting. As done earlier in the thesis, selection is tackled using the Heckman selection model. The exogenous variable used in the selection equation is the households' distance to school. Households' distance to school is correlated with school enrolment but it is unlikely to be correlated directly with households' expenditure on schooling⁶⁴.

Selection Equation

$$ChildSchool_{j,i,t} = \rho_1 X_{i,t} + \rho_2 C_{j,i,t} + \rho_3 SchoolDistance_{i,t} + \varepsilon_{i,t} \dots\dots\dots \text{Equation (4.3)}$$

$$ChildSchool = \begin{cases} ChildSchool = 1, & \text{if } \rho_1 X_{i,t} + \rho_2 C_{j,i,t} + \rho_3 SchoolDistance_{i,t} > 0 \\ ChildSchool = 0, & \text{if } \rho_1 X_{i,t} + \rho_2 C_{j,i,t} + \rho_3 SchoolDistance_{i,t} \leq 0 \end{cases}$$

$$LnEduexp_{j,i,t} = LnEduExp_{j,i,t}^* \text{ if } ChildSchool_{j,i,t} = 1$$

In the selection equation $X_{i,t}$ is a vector of household characteristics in time period t, $C_{j,i,t}$ are the characteristics of child j from household i in time period t and $SchoolDistance_{i,t}$ is the household's distance to school. Equation 4.1 is estimated at the household level. That is, households' shares of expenditure spent on schooling of all girls in the household are calculated and are regressed on explanatory and control variables. Equation 4.2 is estimated at the individual level. That is, sample of all children in the school age groups (ages 5-10 and ages 11-16) in the households is used to estimate the effect of explanatory variables. All children of the age groups not attending school have missing values for their schooling expenditures. Moreover, equation 4.1 is estimated separately for households with children in the primary school age group (ages 5-10) and those with children in the secondary school age group (11-16). Similarly, equation 4.2 is

⁶³ Respondents were asked to report on the schooling of all children in the 5-18 age bracket residing in the household at the time of the survey. The households reported if the child was attending school and if the child was then the details of school and school related expenditures were noted. If the child was not attending school at the time of the survey, it was inquired if the child had ever attended school. Children in the age bracket 5-18 who were either not attending school at the time of the survey or had never attended school are out of school children with missing schooling and school related expenditures.

⁶⁴ Households' expenditure on travel to school were excluded from expenditures on schooling for this analysis.

estimated for sample of children in primary school age group and separately for children in the secondary school age groups.

Robustness Check

It is pointed out in Barcellos, Carvalho & Lleras-Muney (2014) and Choi & Hwang (2015) fertility decisions based on son preference influences the number of children in the household. Scarcity of resources leads expenditures to be influenced by the number of children in the household thereby affecting household expenditures on children's education. Choi & Hwang (2015) suggest that in the absence of sex-selective abortions, the sex of the first child is exogenously determined. In this way, systematic differences in expenditures incurred by households for education of boys and girls can be attributed to gender discrimination. And hence factors that alter households' expenditures on girl children can be noted to have the potential of reducing gender inequality. This technique can be applied on data from rural Pakistan, as there is little evidence of sex-selective abortions taking place in the rural areas (Zaidi & Morgan, 2016). However, son preference may lead to increased mortality of girl children due to neglect. This can be ruled out by testing if the neo-natal mortality of girls is higher than boys and by comparing the average number of children of the both sexes in the households. These comparisons are shown in Appendix Table A29 and Table A30. It does not appear that there is excess mortality of girl children or there are significant differences in the number of children of the two sexes in the households.

Therefore equation (4.2) is also estimated for first child selected from each household. This first child is not necessarily the eldest child in the household but the eldest child of the school-going age group in the household at the time of the survey in round 1. This first child is followed in the subsequent three rounds. The dependent variable therefore becomes the log of household's annual expenditure on schooling and school related expenses for this child in each time period.

4.5 Results

4.5.1 Secondary School Children (Ages 11-16)⁶⁵

Table 4-8 below shows the results of estimation of equation 4.1. The equation is estimated at the household level. The sample is restricted to households that had children of the both sexes in the age group 11-16 at the time of the survey. Robust standard errors are estimated. The results are controlled for household fixed effects and year fixed effects. Sampling weights from round 1 of the survey have been included in the estimates. All three columns of Table 4-8 show estimates controlled for household characteristics that are expected to affect households' shares of expenditures spent on the education of girls. These include household size, sex of the household head, ratio of adult women to men in the household and log of household's annual income per person.

Table 4-8: Dependent variable: Household's Share of Education Expenditures Spent on Girls

VARIABLES	(1) Girls Share	(2) Girls Share	(3) Girls Share
Woman's Participation in Edu Decisions, Binary Variable	0.282* (0.162)	0.286* (0.166)	0.0597 (0.243)
Woman's Consciousness, Binary Variable		0.0410 (0.0838)	-0.0101 (0.0866)
<i>Decide * Conscious</i>			0.266 (0.197)
Constant	0.489 (0.490)	0.448 (0.484)	0.445 (0.482)
Observations	695	695	695
R-squared	0.033	0.034	0.039
Number of hid	431	431	431
Household FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Control Variables: Household size, Sex of the household head, Ratio of Adult Women to Men and Log of household per Person Annual Income			

⁶⁵ Results on estimation of equation 1 for households with children aged 5-10 are reported in the Appendix Table 31.

The results suggest that households where the primary woman respondent reported participation in decisions regarding education of children have higher shares of their education expenditures spent on education of their girl children. The average share of households' education expenditures spent on the education of girls in the sample is 0.44⁶⁶. Households where women respondents have reported participating in decisions, indicated by value 1 of the binary variable "Woman's participation in Edu Decisions" have significantly higher shares. The value of the coefficient is 0.282 which means that households where women participate in decisions have up to 64 percent higher shares for girls. The coefficient of women's consciousness is insignificant though. So, contrary to the hypothesis that women in household decisions do not use their role in household decisions to reduce gender inequality within the households unless it is accompanied by consciousness of gender equality. Empirical results show that households where women participate in decisions regarding children's education and education budget have higher share of education expenditures spent on girls.

Results presented in Table 4-8 above are based on an unbalanced sample, to assess the robustness of estimates, the panel is restricted to the panel of households surveyed in round 4 only. Moreover, the panel is restricted to rounds 3 and 4 only because consciousness indicator is constructed differently for round 2 than in rounds 3 and 4. Moreover, the results presented earlier correspond to expenditures on children's schooling without the expenditures incurred by households on travel. If girls' shares are calculated including households' expenditures on travel to and from school, restrict the sample to a balanced panel and use only rounds 3 and 4 for the estimation results shown in Table 4-9 are obtained. All estimates are controlled for household characteristics, household fixed effects and year fixed effects⁶⁷.

66 The sample is of households that had children of the both sexes of the ages 11-16 present in the household at the time of the survey and excluding Round 1. The average for the full sample shown in Table 4-1 is 0.43.

67 When households' expenditures on travel to and from school are included in the estimations for an unbalanced panel, the coefficient of the interaction does not turn out to be significant but retains its positive sign.

Table 4-9 Dependent variable: Household's Share of Education Expenditures Spent on Girls (Ages 11-16, Balanced Panel, Expenditures include Travel Expenditures)

VARIABLES	(1) Girls Share	(2) Girls Share	(3) Girls Share
Woman's Participation in Edu Decisions, Binary Variable	-0.0225 (0.195)	-0.0939 (0.260)	-0.299 (0.284)
Woman's Consciousness, Binary Variable		-0.0814 (0.218)	-0.125 (0.227)
<i>Decide * Conscious</i>			0.623* (0.367)
Constant	1.508** (0.639)	1.572** (0.727)	1.559** (0.703)
Observations	171	171	171
R-squared	0.135	0.139	0.158
Number of hid	120	120	120
Household FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household size, Sex of the household head, Ratio of Adult Women to Men and Log of household per person annual income

The number of observations naturally reduce. These results suggest that households where women participate in decisions and exhibit consciousness towards gender equality in education spend higher shares of their education expenditures on girls than the average household. This is evidenced by a significant and positive coefficient of the interaction of the two variables, women's decision participation and women's consciousness. The coefficient is 0.63, compared to the average share of 1, it means that households where women participate and are conscious have 63 percent higher shares for girls compared with the average shares received by girls.

4.5.2 Secondary School Age Children (11-16) and Heckman Selection

In the estimates above, selection of households into sending children to school has not been taken into account. To take households self-selection into consideration, equation (4.2) and (4.3) are estimated. The equations are estimated for all children aged 11-16 in the surveyed households. Individual level data is used for this analysis. That is, the dependent variable is the log of household's annual expenditure on the education each child. Children aged 11-16 who were not attending school at the time of the survey either because they had dropped out or had never enrolled

in a school have missing values of the dependent variable. Individual level controls are added to both equations including a dummy variable, “Girl Child” showing sex of the child and child’s age. Household level control variables are also included in both the equations. These control variables include household size, log of household’s annual per person income, number of boys (age<18) in the household, number of girls (age<18) in the household. Additionally, in equation (4.2) village fixed effects are captured by including village level dummies. Year fixed effects are also included.

For equation (4.3) selection variables are included. The selection variables are the distance of the household from the boys’ and girls’ primary (grade 1-5) and secondary school (grade 6-10). The distances are calculated using households’ reported distances to the schools that their children were attending. For households that did not send their children to school, the average distance to the schools in the village is used as selection variable.

The explanatory variables of interest are women’s participation in household decisions regarding children’s education captured by a binary variable that takes value 1 if the main woman respondent from the household reported that she herself or along with other members of the household took these decisions. This woman’s consciousness of gender equality is indicated by a binary variable “Woman’s consciousness”. The interaction terms of these indicators with the binary indicator showing the sex of the child are added to capture if a girl child, in a household where a woman takes decision regarding children’s education is more likely to be sent to school and if she receives higher expenditures on her schooling. Similarly, interaction of women’s consciousness and sex of the child is included to capture the effect of women’s consciousness on household’s expenditures on the education of girls. An interaction of three variables, women’s decision-making role, women’s consciousness and sex of the child is further included to capture the effect of conscious decision makers on households’ expenditures on the education of girls.

Table 4-10: Dependent Variable: Log of Expenditure on Education and Schooling, Heckman Selection Model

VARIABLES	(1) Log of Edu Exp	(2) Log of Edu Exp	(3) Log of Edu Exp
Girl Child, Binary Variable	-0.352*** (0.103)	-0.274 (0.168)	-0.251 (0.172)
Woman's Consciousness, Binary Variable	0.344*** (0.113)	0.410*** (0.131)	0.355*** (0.126)
Woman's Participation in Edu Decisions, Binary Variable	0.0117 (0.117)	-0.117 (0.130)	-0.329 (0.318)
<i>Woman Conscious * Girlchild</i>		-0.211 (0.168)	-0.228 (0.172)
<i>Woman Decides * Girlchild</i>		0.321** (0.145)	0.312** (0.142)
<i>Woman Conscious * Decide * Girl Child</i>			0.243 (0.299)
Constant	7.413*** (0.428)	7.440*** (0.427)	7.492*** (0.418)
Selection Equation			
Distance to Girls' Primary School	-0.0427 (0.0277)	-0.0444 (0.0277)	-0.0485* (0.0280)
Distance to Boys' Secondary School	-0.0288* (0.0156)	-0.0285* (0.0156)	-0.0255* (0.0154)
Girl Child, Binary Variable	-0.597*** (0.0661)	-0.770*** (0.119)	-0.748*** (0.119)
Woman's Consciousness, Binary Variable	0.463*** (0.0741)	0.387*** (0.0940)	0.300*** (0.102)
Woman's Participation in Edu Decisions, Binary Variable	0.226*** (0.0694)	0.145 (0.0955)	-0.206 (0.166)
<i>Woman Conscious * Girlchild</i>		0.171 (0.129)	0.146 (0.131)
<i>Woman Decides * Girlchild</i>		0.162 (0.118)	0.150 (0.121)
<i>Woman Conscious * Decide * Girl Child</i>			0.443** (0.179)
Constant	2.621*** (0.385)	2.708*** (0.392)	2.819*** (0.394)
athrho	0.282** (0.121)	0.280** (0.121)	0.260** (0.125)
Constant	0.173*** (0.0473)	0.170*** (0.0471)	0.167*** (0.0472)
Observations	3,630	3,630	3,630
Village FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Child's Age, Log of Household Annual per person Income, Number of Boys in the Household (Age<18), Number of Girls in the Household (Age<18).

Selection Equation: Child's Age, Log of Household Annual per person Income, Number of Boys in the Household (Age<18), Number of Girls in the Household (Age<18).

Variables in italics are interaction terms.

Table 4-10 shows that on average households spend significantly less on the education of the child if the child is a girl. This is evidenced by a negative and significant coefficient of the dummy variable that takes value 1 if the child is a girl. The interaction term, *Girl Child and Decide*, shows the effect of being a girl child in a household where woman reports participating in household decisions regarding education of girls. The coefficient is significant and positive, that says that girls in households where women decide on children's education receive significantly higher investments in their education than girls in households where women do not participate in these decisions. The estimated coefficient is 0.321, that means that girls in households where women are in decision making roles receive 32 percent higher expenditures than girls in households where women do not participate in these decisions. The coefficient of the interaction term in the third column of the table shows that girl children in households where women decide and are not conscious still receive higher expenditures. This is shown as the interaction term of girl child, decides and conscious is present in the equation. Therefore, the interaction term, girl child and decides shows the effects of girls living in households where women did not exhibit consciousness towards gender equality. On the other hand, the coefficient on the variable women's consciousness remains significant and positive. That means that boys in households where women are more conscious receive higher expenditures for their education. This is shown because the variable girl captures the effect of being a girl and the interaction term girl child into consciousness captures the effect of being a girl in a household with conscious woman. So, the coefficient on the variable consciousness captures the effect of woman's consciousness on education expenditures on boys.

The results of the selection equation are also interesting in the context of this study. The results suggest that the farther a household is from girls' primary school, the less likely is the household to send their children to school. Furthermore, a household are less likely to send their child to school if the child is a girl. However, households, where women report participating in decisions regarding education of children, are more likely to send their children to school and so are households where women exhibit consciousness towards gender equality. The most interesting result is the positive and significant coefficient of the interaction term *girlchild, women's consciousness and women's role in decisions*, this coefficient suggests that households where the women are more conscious towards gender equality in education are more likely to send their girl children to school. The estimates of the selection equation suggest that households are significantly

less likely to enroll girl children to school. Longer distances to school also discourage households to enroll children to school. However, what is interesting is that households where women exhibit consciousness, children are more likely to be enrolled in school.

Equations 4.1 and 4.2 are estimated separately for children aged 5-10. The results are shown in the appendix (Table A31 and Table A32). The results for the sub-sample of 5-10-year old suggest that the share of households' education expenditure spent on the education of girls are not significantly affected by either women's decision making or women's consciousness. Estimates of the Heckman selection model suggest that, households where women exhibit greater consciousness towards gender equality, girls are more likely to be enrolled in school. Different effects of women's decision-making role for girls aged 11-16 and girls aged 5-10 can be rationalized. The significance of women's role in household decisions and women's consciousness on education of girl children of the secondary school age group and not for girl children of primary school age group can be because households restrict girls' mobility more strictly when girls reach puberty. It may be that women's voice in household decisions becomes an important factor influencing girls' education for secondary school aged girls when there is resistance to girl's education. In the absence of this resistance, such as for girls aged 5-10, this voice or consciousness is not needed.

To see the effect of these variables on the likelihood that girls attend school a logistic regression model is estimated. A random effects logistic regression is estimated after keeping the sample for girls aged 11-16. Year fixed effects are included. Control variables include household size, ratio of adult men to women, log of household's annual per person income, sex of the head of the household, education of the head of the household, education of the spouse of the head of the household (respondent/decider woman), household's distance to girls primary school and the child's age. The explanatory variable of interest is woman's role in household decisions regarding children's education and woman's consciousness. Table 4-11 below shows the signs and significance of the estimated logit coefficients and the odds ratios.

Table 4-11: Binary Dependent Variable: Girl Child Enrolled in School

VARIABLES	(1)	(2)
	Logit RE	Odds Ratio
Woman's Participation in Edu Decisions, Binary Variable	positive***	4.829*** (1.961)
Woman's Consciousness, Binary Variable = 1	positive***	8.075*** (3.451)
Observations	1,720	1,720
Number of person_id	1,090	1,090
Household Controls	Yes	Yes
Year Fixed Effects	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Control Variables: household size, ratio of adult men to women, log of household's annual per person income, sex of the head of the household, education of the head of the household, education of the spouse of the head of the household (respondent/decider woman), household's distance to girls primary school and the child's age

The dependent variable is a binary variable that takes value 1 if the child was enrolled in school and 0 otherwise. Column 1 of the table shows the signs and significance of the estimated coefficients and column 2 show the odds ratio. The results suggest that girls in households where women exhibit a consciousness towards gender and participate in decisions regarding education of girls, are more likely to be enrolled in school. The odds ratio suggest that for girls in households with conscious women, the odds of being enrolled in school are 8 times higher as compared to girls in households without conscious women. The odds ratio also suggest that for girls in households with women as decision makers, the odds of being enrolled in school are 5 times higher as compared to girls in households without women in decision making roles.

First Child

Table 4-12 shows the results of the Heckman selection model estimated for the first child selected from each household. Sampling weights from round 1 are included in the regression. The standard errors are clustered at the household level. The results in Table 4-12 corroborate the results seen for all children in the household. The results suggest that households are less likely to send their girl children to school. This is evident from a negative and significant coefficient of the dummy variable that takes value 1 if the first child selected from the household was a girl. Households are also likely to self-select into sending their children to school if lesser is the household's distance to school. The most interesting result in Table 4-12 is that women who exhibit consciousness towards gender and participate in household decisions regarding the education of children are likely to spend more on the education of their girl child. This is evidenced by a significant and positive coefficient of the interaction term that takes value 1 if the woman had consciousness, participated in decisions regarding children's education and if the first selected child from the household was a girl child. It is worthwhile to note that neither women's role in household decisions nor women's consciousness are significantly correlated with different expenditures on girl children as evidenced by insignificant estimated coefficient of the interaction terms *Woman Conscious and Girlchild* and *Woman Decides and Girlchild*.

Table 4-12: Dependent Variable: Natural log of Households' Expenditure on Education of First Child

VARIABLES	(1) Log of Edu Exp	(2) Log of Edu Exp	(3) Log of Edu Exp
Girl Child, Binary Variable	-0.172 (0.169)	-0.182 (0.296)	0.134 (0.291)
Woman's Consciousness, Binary Variable	0.552*** (0.164)	0.555** (0.218)	0.555** (0.218)
Woman's Participation in Edu Decisions, Binary Variable	-0.00358 (0.137)	-0.153 (0.174)	-0.153 (0.174)
<i>Woman Conscious * Girlchild</i>		-0.124 (0.315)	-0.490 (0.338)
<i>Woman Decides * Girlchild</i>		0.342 (0.264)	-0.334 (0.458)
<i>Woman Conscious * Decide * Girlchild</i>			0.796* (0.471)
Constant	6.191*** (0.445)	6.587*** (0.430)	6.544*** (0.431)
Selection Equation			
Average distance in Village to Girls' Primary School	-0.0748* (0.0419)	-0.0760* (0.0423)	-0.0762* (0.0425)
Average distance in Village to Boys' Primary School	-0.110*** (0.0404)	-0.109*** (0.0408)	-0.107*** (0.0411)
Girl Child, Binary Variable	-0.370*** (0.0945)	-0.558*** (0.170)	-0.644*** (0.184)
Woman's Consciousness, Binary Variable	0.618*** (0.0929)	0.540*** (0.130)	0.539*** (0.130)
Woman's Participation in Edu Decisions, Binary Variable	0.212** (0.0833)	0.141 (0.114)	0.139 (0.114)
<i>Woman Decides * Girlchild</i>		0.147 (0.172)	0.375 (0.261)
<i>Woman Conscious * Girlchild</i>		0.175 (0.183)	0.293 (0.212)
<i>Woman Conscious * Decide * Girlchild</i>			-0.296 (0.274)
Constant athrho	0.696** (0.352)	0.773** (0.362)	0.768** (0.363)
Constant Insigma	0.227*** (0.0618)	0.203*** (0.0657)	0.200*** (0.0683)
Constant	0.510*** (0.0661)	0.499*** (0.0672)	0.497*** (0.0670)
Observations	1,583	1,583	1,583
Year FE	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Child age, Number of Boys in the household, Number of Girls in the household, Log of Household's per capita annual income. Selection Equation: Log of household's per capita annual income, Woman's participation in household decisions. Child's Age

The variables in italics are interaction terms.

4.6 Discussion

This chapter attempted to link an oft-employed measure of women's empowerment, their role in household decisions, with gender equality within households. It was further hypothesized that women's ability to use their decision participation to reduce gender inequality may be constrained by their lack of consciousness of gender equality in highly gender unequal contexts. Therefore, the chapter included and tested the efficacy of women's consciousness in reducing gender inequality. The endogenous character of the three variables of interest make it difficult to delineate the effects of women's decision-making role and women's consciousness on gender equality. Therefore, longitudinal data, that allows to explore the effects of changes in women's decision participation and in women's consciousness on gender equality within households, has been exploited.

The dimension of inequality explored is households' expenditures on schooling of girls and boys. Households' average annual expenditures and shares of education expenditures spent on the schooling of girls and boys are significantly different. These differences persist for children in the primary school age group (5-10) and for children in the secondary school age group (11-16). There are all also significantly more girls out of school than boys in both age groups. Households' share of education expenditures spent on education of girls is considered a dependent variable. The explanatory variables are; a binary variable taking value 1 if the primary female respondent reported participating in household decisions regarding children's schooling and allocation of household budget for schooling of children and a binary variable taking value 1 if the respondent woman exhibited consciousness towards gender equality in education.

Results from an unbalanced panel and for household expenditures without travel expenditures suggest that for households with children in the secondary school age group (11-16) of the both sexes present in the household, the share of education expenditures spent on girls increase by up to 64 percent than the average share of education expenditures on girls when the woman participates in decisions regarding children's education. Thereby suggesting that households where women participate in household decisions regarding children's education, inequality in households' expenditures on schooling of girls and boys may reduce. However, the results from a balanced panel consisting of only two rounds with households travel expenditures included in expenditures on schooling suggest that households for households with children in the

secondary school age group (11-16) of the both sexes present in the household, the share of education expenditures spent on girls increase by up to 62 percent than the average share of education expenditures on girls if the woman participates in decisions and exhibits consciousness towards gender equality.

Further in the analysis, selection of households into sending children to school was accounted for using the Heckman Selection Model as many children in the rural areas do not attend school. The selection variable used is households' distance to girls' and boys' school. As distance to school is used as the selection variable, household expenditure on schooling and education of children used in this part of the analysis is restricted to expenditures on school fee, schoolbooks and stationery and school uniforms. Results of the Heckman Selection Model suggest that girls of the secondary school age (11-16) in households where women participate in decisions concerning children's education receive significantly higher expenditures on their schooling. The Heckman Selection equation suggests that girls of the secondary school age (11-16) are more likely to be sent to school if they live in a household where a woman participates in household decisions and exhibits consciousness towards gender equality in education. Moreover, when the first child of the school age from each household is followed over four rounds and the effect on their schooling expenditures, is estimated it is found that girl children in households where women exhibit consciousness and participate in decisions regarding children's education receive higher expenditures on their schooling. There are no significant effects of women's consciousness or their participation only.

Women's role in household decisions is used as an indicator of women's empowerment, however, whether this role is instrumental in reducing gender inequality is less established. It can be argued that women in gender unequal societal contexts do not use their role to reduce inequality as they themselves have internalized women's inferior status. Hence, it can be argued that women's decision participation without a consciousness of gender equality may not translate into women actively reducing gender equality. Results of the analysis in this chapter suggest that, women's participation in household decisions appears to be instrumental in reducing inequality even without consciousness. Moreover, some results also suggest that households with conscious women in decision making roles have higher shares for girls' education.

A unified reading of these results suggests that women's role in household's decision and women's consciousness of gender equality both are important dimensions of women's empowerment. These two dimensions together may lead women to actively reduce gender equality. It can be suggested that women's consciousness of gender equality may be included in valuations of women's empowerment along with their role in household decisions.

There are a few limitations of the preceding analysis that mandate a mention. First, the results for girls shares in household expenditures that are positively affected by women's participation are only significant for girls in the secondary school age group, no significant effects for households with children in the primary school age group could be seen. This could be because resistance to girls' schooling is more pronounced for girls in the secondary school age group when girls have reached puberty. Women's participation in household decisions then becomes an important counter to such any such resistance. Where there is no resistance to girls' schooling, women's participation or lack of participation becomes unimportant.

Second, the Heckman Selection Model is based on pooled data. That means that it does not tackle endogeneity of the three variables of interest. However, the result that it is conscious women's participation in household decisions that is significantly and positively correlated with expenditures on girls' education (for first child of the school age) and not just their participation or consciousness points out that perhaps in highly gender unequal societal contexts women's participation in household decisions can be instrumental to reducing gender inequality if it is accompanied by a consciousness of gender.

5 Conclusion and Implications for Research and Policy

Changes in women's participation in household decisions regarding small and large expenditures in response to migration of men from the households appears to be mediated by receipt of remittances by women and type of living arrangement in the left-behind household. The results suggest that if women directly receive remittances, they are more likely to participate in households' expenditure decisions. For left-behind wives of migrants, receipt of remittances increases their participation in households' small and large expenditure decisions but only if the left-behind wives live in nuclear family households. With regards to women's role in households' agricultural production decisions, women in left-behind households are more likely to take decisions regarding production of food crops, cash crops and livestock raising. The role of the left-behind wife of migrant is again mediated by the living arrangements of the left-behind household. The left-behind wife of migrant in a nuclear family household appears to be more likely to participate in food crop, cash crop and livestock decisions only when she resides in a nuclear family household. Left-behind wives of migrants in extended family households are less likely to participate in these decisions, although the effect is not statistically significant. Women's participation in household decisions has been analyzed as it is considered a component of women's empowerment. If women's empowerment is increase in women's choices, then, women's role in household decisions, that is, women's ability to decide on aspects of their life and aspects of the household, can reflect if women are empowered by men's absence or not. The results cannot suggest if this change is welcome by women who may view their participation in household decisions as an added responsibility. Particularly agricultural production may be viewed by women as men's work and women's participation in agricultural decisions may be more a burden on women. Moreover, the results cannot suggest if women also control the income earned by the households from the agricultural production of the household.

In the assessment of changes in women's work due to migration of men for employment, it is noted that, outmigration of men does not increase the work of women in left-behind households if the work burden is proxied by the number of hours spent by women in different types of non-leisure activities. Rather, it appears that outmigration of men lowers number of hours spent by women in left-behind households in work on households' own agricultural or non-agricultural enterprise. Moreover, results suggest that remittances lower the number of hours spent

by recipient women in paid work as well as domestic work. Any significant increase in the work burden of women due to outmigration of men from the household would have been unwelcome. Women in rural households spend up to 39.5 hours per week in domestic work. An increase in the burden of work could imply a decline in women's welfare. It may then be considered as positive change in women's lives that migration of men lowers the number of hours spent by women on own farms and households non-farm enterprise. Similarly, when women report receiving remittances, they spend less time in domestic work as well as in paid work. Women's participation in paid work in the rural areas has been noted to depend on the income levels of their households. Women from poor households work as agricultural laborers in the rural areas. Remittances could mean that women from poorer households do not have to work in as wage laborers. However, women's participation in paid work and women's own earned income seem to be associated with their higher participation in household decisions. Although women's receipts of remittances is associated with their higher participation in household decisions, the results cannot say what effect these two simultaneous changes have on women overall. On the one hand, women's participation in paid work can be seen as empowering. On the other hand, when women from poor households work as agricultural labour, they are vulnerable to abuse and exploitation as the relations between agricultural labour and employers are skewed in favor of the employer. When women receive remittances, they may withdraw from the labour market to avoid exploitation and abuse, however, their dependence on remittances may make them more dependent on the remittance sender.

For left-behind wives of migrants, the analysis suggests that, the number of hours spent in paid work are higher if these wives of migrants reside in nuclear family households. Moreover, for left-behind wives of migrants, the number of hours spent in domestic work decrease due to male outmigration. However, for left-behind wives of migrants, who live in extended family households, and who do not directly receive remittances, the number of hours spent in domestic work are higher (more). Increase in left-behind wives' burden of domestic work and their lowered participation in household decisions may overall reduce women's welfare. Young women, specially, young daughters in law have little control over their own lives and on aspects of the household. This seems to be deteriorated by the outmigration of their husbands from the household.

The estimates of the effect of migration on the households' expenditure on the education of children in the left-behind household fail to reject the hypothesis that migrant households have higher education expenditures per child or higher total education expenditures. There is some evidence however, that remittances increase households' total education expenditures as well as the per child education expenditures incurred by households. It was further assessed if outmigration of men from the households and remittance receipts decrease the inequality in households' education expenditures spent for the education of boys and girls. The results suggest that households with out-migrants have a higher share of education expenditures spent on the education of girls. This effect appears to be independent of households' receipt of remittances. Furthermore, using the Heckman selection model, it is estimated if households with migrant members spend more on the education of girl children contingent on girls going to school. The results point out that in households with an outmigrant, girls are more likely to be sent to school and receive higher expenditures for their education. Now, the result that girls' share in households' education expenditures is higher in households from where men have migrated can be viewed with the result that women's participation in household decisions increase in the absence of men. The two results may suggest that women's participation in household decisions may potentially reduce gender inequality within households.

The effect of migration on the work burden of children in the left-behind households is also estimated. The results fail to reject the hypothesis that there are no effects of migration on the time spent by boys and girls in the left-behind household in domestic work. However, the results suggest that the time spent by children in the left-behind household in paid work reduces. Moreover, results from the sub-sample of the panel that was surveyed in round 4 suggests that children's time spent in work on own agricultural or non-agricultural enterprise also reduces for children in left-behind households.

Women's participation in household decisions appears to increase after migration of male members from the household due to migration. It also appears that inequality of expenditures spent by households for the education of boys and girls reduces if there is a male migrant from the household. The next question thus explored is if women's participation in household decisions reduces gender inequality within households. To do this, the analysis is broadened to all rural households. It is assessed if households with participation of women in household decisions

regarding children's education and in decisions regarding children's educational budgets spend higher share of their education expenditures on the education of girls. However, for highly gender unequal contexts it was hypothesized that women in decision making roles do reduce inequality between boys and girls without a consciousness of gender inequality. The results suggest that households where women participate in decisions regarding education of children and decisions regarding education expenditures appear to have higher shares of education expenditures spent on the education of girls. The results of the Heckman selection model, that allow to incorporate the selection of households into sending children to school suggest that households where women participate in decisions and exhibit consciousness towards gender equality in education girl children are more likely to attend school. The results also suggest that households where women participate in decisions spend more on the education of girl children. However, women's role in household decisions, women's consciousness and gender equality can all be outcomes of the same process or set of processes. A simple comparison of the correlations between factors associated with women's participation and women's consciousness show that there are different factors significantly associated with both. However, there still may be unobserved factors that drive all three, that is, women's participation in household decisions, women's consciousness and gender equality within households.

There are a few things that policy makers and researchers could learn from the analyses in the thesis. Remittance recipient women appear to have higher say in household decisions and their participation in household decisions appears to promote greater gender equality. Women's access to remittance transfer channels can help improve their own status within households and may reduce the existing inequalities observed throughout Pakistan. The analysis also provides support to cash transfer policies in place in several countries that provide transfers to women rather than the predominantly male heads of households. The Benazir Income Support Program (BISP) is one such program in Pakistan. However, increasing women's consciousness of gender equality can also be instrumental to reduction of gender inequalities. Furthermore, continuing the pioneering works in women's empowerment regarding the inclusion of women's consciousness indicators in valuations of women's empowerment, the analysis here suggests that it is a distinct yet important dimension that should not be ignored in such evaluations.

There are limitations of the analyses in the thesis that must be made explicit. First, despite a large number of migrants from Pakistan to the Gulf states with left behind families, they could not be captured in the dataset primarily because only those migrants who had left the household for work sometime during the year preceding the survey were counted as migrants. Also, with regards to the participation of left-behind wives in household decisions, not all left-behind wives had reported their participation in household decisions and hence the usable dataset was smaller than expected. Furthermore, the dataset was limited to only a subset of the sample in round 4.

Ideally the use of fixed effects regressions that would lessen the bias that arises due to endogeneity should have been used, however, fixed effects regression analysis could not be used throughout the analysis due to data limitations. The analysis of women's participation in household decisions was particularly constrained due to the binary nature of the dependent variable. The analysis has provided some insights into the direction of change but has not been able to predict the magnitude of these changes.

A distinction has been made between households with migrants and households that receive remittances. Several studies do not differentiate between the two types of households. For households in the dataset used in this thesis that had migrant members but did not report receiving any remittances, it could be the case that the member brought his income to the household on his annual or biannual visit to the household. For the purpose of the analysis in this thesis however, differentiating the two is justified on the ground that if the left behind household, specially the left behind women in the household receive remittances while the migrant is away, they may have more control over the received remittances. The analysis of women's participation in paid work has ignored selection of women into paid work. The analysis of children's education and work has ignored that children's education and work may be one decision. That is, children who are forced by circumstance to engage in paid work or work on their families' farms may be forced to leave school. In the event of migration of a male member or receipt of remittances, households may take their children out of paid work and enrol them in school, these changes can be more adequately captured using a systems of equation analysis that had not been conducted here.

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7 Appendix

Table A1: Province level Selected Social Indicators

Punjab, rural		
	Male	Female
Adult Literacy Rate	66.5	47.8
Education (<10 years of School) *	46.2	32.7
Education (>10 years of School)	16	11
Tertiary Education Rate	3	2.9
Labour Force Participation (refined)	71	34.3
Labour Force Participation (augmented)	56.5	42.7
Sindh, rural		
Adult Literacy Rate	60.1	25.7
Education (<10 years of School) *	38.7	20.1
Education (>10 years of School)	15.6	3.9
Tertiary Education Rate	3.9	0.6
Labour Force Participation (refined)	71.4	16.9
Labour Force Participation (augmented)	63.9	54.9
Khyber Pakhtunkhwa, rural		
Adult Literacy Rate	71.6	35.25
Education (<10 years of School) *	45.2	24.7
Education (>10 years of School)	20	7.8
Tertiary Education Rate	5.3	2.1
Labour Force Participation (refined)	60.8	12.1
Labour Force Participation (augmented)	53.6	46.7

Source: Labour Force Survey, (LFS), 2017-18. Pakistan Bureau of Statistics, Statistics Division, Government of Pakistan.

* The percentage of population aged 10 and above who attended school but completed less than 10 years of education. The category is the sum of population proportions in three categories. These categories are 1. KG but below primary (<5 years of school) 2. Primary but below middle (<8 years of school) and 3. Middle but below Matric (<10 years of school).

Refined Activity Rate: Refined activity rate is the currently active population expressed as a percentage of the population 10 years and above.

Augmented Activity: Augmented activity rate is based on probing questions from the persons not included in the conventional measure of labour force, to net-in marginal economic activities viz subsistence agriculture, own construction of one's dwelling etc. Conventionally, persons 10+ aged reporting housekeeping and other related activities are considered out of labour force. However, from the perspective of time use, they are identified as employed if they have spent time on a specific set of marginal economic activities mentioned afore.

Tertiary Education: Percentage of population aged 10 and above who have completed graduate or above level of education.

Table A2: Comparison of Means of characteristics of Households that left the PRHPS

	Round 1 and 2			Round 2 and 3			Round 3 and 4	
	Migrated	Refused	Other	Migrated	Refused	Other	Migrated	Refused
Province								
Average	4.2	0.66	1.9	3	1.4	0.10	4.4	2.2
Punjab	2.4***	0.45*	1.6	2.6	1.8	.08	5.6	4.6
Sindh	8.2***	1.4*	2.1	3.8	0.9	0	-	
Khyber Pakhtunkhwa	5.5***	0	3.1	4	0	0.45	4	0.96
Migrant Households								
Non-Migrant Households	4.3	0.65	2	3.1	1.2	.11	4.8	2
Left Behind	4.3	4.3	0	3.6	0	0	3.8	2
Temporary Migrant	1.6	0	3.2	7.1	0	0	4.8	1 obs (6.7 percent)
Income and Wealth								
Annual Income	191389	310433	96494	133637	188428	93000	144227	256125
Average	186800	186175	188776	200842	198847	198833	179727	176398
Annual Income per Person	39758	54488	17536	22222	28635	37333	30839	37755
Average	31587	31787	32227	32401	32120	32075	30951	30792
Wealth Index ¹	8.8**	10.5	8.7**	9.3**	11	9.3	12.1	12
Average	9.8	9.7	9.7	10	10	10	12.1	12
Household Size	5.5**	7.6*	5.9	6	7.1	-	5.8	6.4
Average	6.3	6.3	6.3	6.6	6.5	6.5	6.5	6.4
Household Education Expenditure	6923	10615	4441	6581	8920	-	15473	4080
Average	5097	5132	5186	6310	6285	-	8995	9350
Girls Share	1*	0.7	0.7	0.71	1.2*	-	0.88	0 (1 obs)
Average	0.7	0.7	0.7	0.74	0.74*	-	0.78	0.79
Girls out of school ²	60	67	76	57	44	-	34	67 (2/3 obs)
Average	70	69	69	57	57	-	34	33

1. Detail of the construction of the wealth index are provided in the empirical chapters below. In summary, the wealth index is constructed using Principal Component Analysis (PCA) of households' ownership of assets. A certain value of the wealth score does not convey any meaning on its own. However, the wealth scores of the households can be compared to show how much wealthier a household is in comparison to other households. The indicated wealth score has an average value of 9.7 and varies between a maximum of 19 and minimum of 5.5.

2. For households that had girls of the school age group present in the household)

Table A3: Attrition at the individual level (Round 1 and 2)

	Average	Moved to New Household	Migrated	Married	Other Reasons
Women's Work Hours					
Domestic Work	30.1	30	17	34	31
Paid Work	19	11	-	12*	4
Own Work	9.4	7.8	1 obs	8.8	6.8
Children's work hours (Girls)					
Domestic Work	23	23	-	41***	17
Paid Work	16	7 (1 obs)	-	18.5	-
Own Work	6.5	-	-	4	3 (1 obs)
Children's work hours (Boys)					
Domestic Work	9.5	1.6	-	-	-
Paid Work	19	-	-	-	-
Own Work	7.5	7 (1 obs)	-	-	-
Children's Education					
Schooling (ever attended)	59.4	65	-	51	50
Schooling (In School)	49	58	-	12.2***	25
Expenditures on Schooling	3600***	10354***	5330	2162	6428

Table A4 Attrition at the individual level (Round 2 and 3)

	Average	Moved to New Household	Migrated	Married	Other Reasons
Women's Work Hours					
Domestic Work	38	41	68 (2 obs)	34	37
Paid Work	30	31	-	29	25
Own Work	12*	-	-	8*	7
Children's work hours (Girls)					
Domestic Work	22	27	24 (1 obs)	34***	28
Paid Work	28	-	-	35	-
Own Work	7.6	5 (1 obs)	-	9.1	-
Children's work hours (Boys)					
Domestic Work	9.7	3 (1 obs)	7 (1 obs)	-	-
Paid Work	29	-	56 (1 obs)	-	-
Own Work	12	5.5 (2 obs)	14 (1 obs)	-	-
Children's Education					
Schooling (ever attended)	70	66	81	48	69
Schooling (In School)	56	62	45	10	46
Expenditures on Schooling	4033	2833	2902	3645	3503

Table A5 Attrition at the individual level (Round 3 and 4)

	Average	Moved to New Household	Migrated	Married	Other Reasons
Women's Work Hours					
Domestic Work	29***	20***	42	24*	9*
Paid Work	41	28 (1 obs)	-	39	-
Own Work	4.5	no obs	2.5	3.3	1.5
Children's work hours (Girls)					
Domestic Work	11.5	8.4	-	17*	-
Paid Work	-	-	-	-	-
Own Work	2.1	3.25	-	10 (1 obs)	-
Children's work hours (Boys)					
Domestic Work	4.25	12 (1 obs)	-	-	3
Paid Work					
Own Work	2.3	0	0	0	0
Children's Education					
Schooling (ever attended)	94	97	83	82	100
Schooling (In School)	82	78	50**	30***	1 obs
Expenditures on Schooling	4907	3384	1906	4823	-

Table A6 Number of Hours per Week, zero hours not included

Variable	Non-Migrant Households	Migrant (left behind) Households
Hours spent per Week in Domestic Work	43***	36***
Hours spent per week in Paid Work	26**	20**
Hours spent per Week in Own Work	10***	8.2***

Domestic work includes cooking, cleaning the house, washing utensils, care of children and the elderly in the home, collecting water for household consumption, collecting fuelwood for household use and fodder for own cattle, washing laundry of household members and ironing, sewing of clothes for household members and preparing dung cakes for household use.
Paid Work: Includes agricultural or non-agricultural work done in exchange for wage.
Own Work: Includes agricultural or non-agricultural work on household own enterprise.
*** p<0.01, ** p<0.05, * p<0.1

Table A7 Dependent Variable: Participation in Household Expenditure Decisions, Logistic Coefficients with Random and Fixed Effects (All Women)

VARIABLES	(1)	(2)	(3)	(4)
	FE Small Exp	FE Big Exp	RE Small Exp	RE Big Exp
Migrant Household (Dummy Variable) = 1	-0.0453 (0.287)	0.0957 (0.293)	0.235* (0.126)	0.463*** (0.140)
Woman Receives Remittances (Dummy Variable) = 1	0.867*** (0.292)	1.043*** (0.272)	0.747*** (0.138)	0.898*** (0.148)
RHPS round indicator = 3	0.786** (0.328)	0.723** (0.306)	0.423*** (0.0656)	0.0508 (0.0674)
RHPS round indicator = 4	1.342 (1.307)	0.785 (1.210)	0.501*** (0.123)	-0.208 (0.137)
Age Year	-0.397 (0.312)	-0.364 (0.289)	0.0289*** (0.00212)	0.0293*** (0.00220)
Employed (Dummy Variable) = 1	-0.424** (0.203)	-0.414** (0.204)	0.114 (0.0861)	-0.0108 (0.0913)
Marital Status (Dummy Variable) = 1	-0.295 (0.732)	-0.155 (0.761)	-0.134 (0.0816)	0.134 (0.0861)
Number of Children	0.258* (0.145)	0.232 (0.159)	0.0401* (0.0204)	0.0118 (0.0227)
Ratio of Sons to Daughters	-0.160 (0.165)	-0.289* (0.172)	0.0408 (0.0298)	0.0964*** (0.0315)
Extended Family Household (Dummy Variable) = 1	0.112 (0.337)	0.213 (0.342)	0.360*** (0.0789)	0.265*** (0.0885)
Household Size	-0.0144 (0.0731)	-0.0149 (0.0750)	-0.0567*** (0.0136)	-0.0622*** (0.0166)
Adult Women to Men in Household	-0.128 (0.192)	-0.215 (0.194)	-0.00792 (0.0509)	0.0203 (0.0564)
Constant			-1.567*** (0.140)	-1.103*** (0.151)
Observations	1,801	1,801	6,741	6,741
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Number of person_id			3,783	3,783

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A8 Dependent Variable: Participation in Household Expenditure Decisions, Logistic Coefficients with Random and Fixed Effects (Wife)

VARIABLES	(1)	(2)	(3)	(5)
	FE Small Exp	FE Big Exp	RE Small Exp	RE Big Exp
Wife of Migrant (Dummy Variable)	0.374 (0.978)	-0.987 (1.009)	1.031 (0.688)	0.448 (0.611)
<i>Migrant Wife * Receives Remittances</i>	1.799 (1.400)	1.985 (1.413)	0.702 (1.022)	0.737 (0.915)
<i>Migrant Wife * Extended Family</i>	-1.375 (1.110)	0.0111 (1.165)	-0.802 (0.747)	-0.0523 (0.675)
Woman receives Remittance, Dummy	0.969*** (0.281)	0.785** (0.305)	0.819*** (0.157)	0.700*** (0.148)
Age Year	-0.359 (0.292)	-0.396 (0.302)	0.0293*** (0.00222)	0.0291*** (0.00213)
Employed (Dummy Variable) = 1	-0.418** (0.212)	-0.426** (0.211)	-0.0782 (0.0990)	0.0881 (0.0913)
Marital Status (Dummy Variable) = 1			0.141 (0.0868)	-0.136* (0.0816)
Number of Children	0.231 (0.159)	0.271* (0.145)	0.00169 (0.0231)	0.0347* (0.0208)
Ratio of Sons to Daughters	-0.276 (0.174)	-0.153 (0.169)	0.100*** (0.0317)	0.0419 (0.0298)
Household is Joint Family = 1	0.240 (0.341)	0.119 (0.336)	0.280*** (0.0892)	0.361*** (0.0791)
Household Size	-0.0236 (0.0738)	-0.0193 (0.0721)	-0.0622*** (0.0166)	-0.0562*** (0.0135)
Adult Women to Men in Household	-0.163 (0.183)	-0.103 (0.181)	0.0394 (0.0560)	-0.00341 (0.0506)
Log of Women's Income	-0.00609 (0.0211)	-0.000667 (0.0209)	0.0120 (0.00840)	0.00456 (0.00789)
RHPS round indicator = 3	0.717** (0.309)	0.788** (0.319)	0.0633 (0.0676)	0.428*** (0.0656)
RHPS round indicator = 4	0.784 (1.224)	1.350 (1.272)	-0.149 (0.135)	0.524*** (0.123)
Constant			-1.136*** (0.153)	-1.575*** (0.140)
Observations	1,801	1,801	6,740	6,740
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Number of person_id			3,783	3,783

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A9 Dependent Variable: Participation in Household Expenditure Decisions, Odds Ratios with Random and Fixed Effects (All Women, Balanced Panel)

VARIABLES	(1)	(2)	(3)	(4)
	FE Small Exp	FE Big Exp	RE Small Exp	RE Big Exp
Migrant Household (Dummy Variable)	1.347 (0.333)	1.711* (0.323)	1.131 (0.196)	1.399* (0.201)
Woman Receives Remittances (Dummy Variable)	1.373 (0.525)	2.373* (0.473)	1.237 (0.263)	1.413 (0.257)
Constant			0.424*** (0.270)	0.574** (0.231)
Observations	619	619	1,606	1,606
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Number of person_id			753	753

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A10 Dependent Variable: Participation in Household Expenditure Decisions, Odds ratios with Random and Fixed Effects (Wife, Balanced Panel)

VARIABLES	(1)	(2)	(3)	(4)
	FE Small Exp	FE Big Exp	RE Small Exp	RE Big Exp
Wife of Migrant (Dummy Variable)	1.897 (0.571)	0.746 (0.673)	1.244 (0.442)	2.385* (0.487)
<i>Migrant Wife * Receives Remittances</i>	3.376 (1.325)	4.651 (1.343)	2.386 (0.972)	1.212 (0.984)
Woman receives Remittance, Dummy	2.327 (0.548)	1.017 (0.678)	1.172 (0.315)	0.824 (0.340)
Constant			0.572** (0.231)	0.417*** (0.267)
Observations	619	619	1,606	1,606
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Number of person_id			753	753

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A11 Dependent Variable: Participation in Production Decisions, Logistic Coefficients (All Women, Full Panel)

VARIABLES	(1) Food Crop Decisions	(2) Cash Crop Decisions	(3) Livestock Decisions
Household has Migrant Member	0.643** (0.263)	0.536* (0.282)	0.723*** (0.241)
Woman receives Remittance	0.333 (0.256)	0.237 (0.281)	0.124 (0.223)
Age Year	0.0221*** (0.00484)	0.0222*** (0.00547)	0.0263*** (0.00550)
Ever Attended School, Dummy	-0.0785 (0.168)	-0.0260 (0.182)	-0.209 (0.155)
Employed (Dummy Variable)	0.708*** (0.223)	0.757*** (0.239)	0.709*** (0.202)
Marital Status (Dummy Variable)	0.0118 (0.196)	0.0869 (0.210)	0.679*** (0.196)
Number of Children	0.101** (0.0419)	0.0742* (0.0443)	0.132*** (0.0406)
Sons to Daughter Ratio	-0.0764 (0.0612)	-0.0272 (0.0673)	0.0160 (0.0537)
Extended Family Household	0.225 (0.166)	0.207 (0.178)	0.202 (0.148)
Household Size	-0.0502* (0.0291)	-0.0365 (0.0279)	-0.0818*** (0.0284)
Women to Men in the Household	-0.102 (0.140)	-0.179 (0.158)	0.0418 (0.105)
Log of Women's Income	-0.0193 (0.0197)	-0.0243 (0.0206)	0.0255 (0.0171)
RHPS round indicator = 4	0.417* (0.230)	0.189 (0.317)	0.0850 (0.265)
Constant	-2.256*** (0.437)	-2.349*** (0.520)	-2.454*** (0.474)
Observations	1,808	1,622	2,528
Number of person_id	1,709	1,579	2,443
Individual FE	No	No	No
Year FE	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A12 Dependent Variable Women's participation in production decisions, Logistic Coefficients (Left Behind Wife, Full Panel)

VARIABLES	(1) Food Crop Decisions	(2) Cash Decisions	(3) Livestock Decisions
Wife of Migrant (Dummy Variable)	1.903* (1.151)	2.132* (1.136)	2.351* (1.253)
Woman receives Remittance	-0.0269 (0.275)	-0.0755 (0.290)	-0.108 (0.218)
<i>Migrant Wife * Extended Family</i>	-1.364 (1.241)	-2.132 (1.328)	-1.936 (1.302)
<i>Migrant Wife * Receives Remittances</i>	1.005 (1.075)		0.0137 (1.363)
Age Year	0.0221*** (0.00524)	0.0208*** (0.00556)	0.0233*** (0.00536)
Ever Attended School, Dummy	-0.253 (0.171)	-0.156 (0.182)	-0.375** (0.158)
Employed (Dummy Variable)	0.924*** (0.255)	0.931*** (0.263)	0.738*** (0.207)
Number of Children	0.120*** (0.0391)	0.106*** (0.0403)	0.213*** (0.0433)
Sons to Daughter Ratio	-0.102 (0.0635)	-0.00938 (0.0637)	0.0167 (0.0522)
Extended Family Household	0.119 (0.177)	0.0969 (0.181)	0.218 (0.144)
Household Size	-0.0509* (0.0303)	-0.0445 (0.0295)	-0.105*** (0.0294)
Women to Men in the Household	-0.0932 (0.127)		-0.0105 (0.0965)
Log of Women's Income	-0.00868 (0.0218)	-0.0132 (0.0226)	0.0245 (0.0166)
RHPS round indicator = 4	-0.126 (0.267)	-0.509 (0.367)	-0.238 (0.273)
P_Code = 2, Sindh	-1.159*** (0.229)	-1.086*** (0.236)	-1.134*** (0.222)
P_Code = 3, KPK	0.673*** (0.211)	0.827*** (0.260)	0.381* (0.221)
Constant	-2.047*** (0.422)	-2.254*** (0.461)	-1.471*** (0.371)
Observations	1,808	1,622	2,528
Number of person_id	1,709	1,579	2,443
Individual FE	No	No	No
Year FE	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A13 Dependent variable number of hours per week spent in 1. Paid Work 2. Domestic Work and 3. Own Work (All Women, Full Panel)

VARIABLES	(1) Paid Work	(2) Domestic Work	(3) Own Work
Migrant Household	-0.671 (0.545)	-3.083 (2.056)	-1.166* (0.657)
Woman receives Remittances, Binary Variable	-6.370*** (1.192)	-5.484** (2.311)	-1.338 (0.824)
Age Year	0.459 (0.844)	-0.491 (1.888)	-0.710 (0.634)
Years of Schooling = 0,	-	-	-
Marital Status Dummy, Married=1	0.360 (2.494)	0.716 (5.601)	0.750 (1.406)
Employment Status Dummy, Employed=1	7.130*** (0.891)	0.947 (1.413)	1.021* (0.529)
Number of Children under 10	-0.378 (0.334)	1.374 (0.907)	-0.209 (0.248)
Number of Children under 16	0.0334 (0.333)	-1.655 (1.401)	0.404 (0.413)
Household Size	0.0752 (0.127)	-0.413 (0.435)	-0.183* (0.106)
Ratio of Women to Men in the Household	0.506 (0.340)	-0.777 (1.208)	-0.0728 (0.313)
Log of Income per Member	-4.85e-07 (1.91e-06)	-1.23e-05* (7.30e-06)	-3.83e-06* (2.30e-06)
Joint Family Household, Binary Variable	-1.242 (1.012)	-4.508* (2.378)	-0.129 (0.737)
Village Average Daily Wage in Rabi Work	0.00414 (0.00424)		
RHPS round indicator = 2	1.407 (1.031)	-0.874 (2.203)	1.707** (0.735)
RHPS round indicator = 3	-2.007 (1.820)	-5.568 (3.954)	1.805 (1.348)
RHPS round indicator = 4	-0.677 (4.499)	8.130 (9.523)	6.049* (3.607)
Constant	-14.66 (25.04)	60.57 (56.46)	25.64 (18.83)
Observations	7,452	7,452	7,452
R-squared	0.102	0.044	0.017
Number of person_id	3,958	3,958	3,958
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A14 Dependent variable number of hours per week spent in 1. Paid Work 2. Domestic Work and 3. Own Work (All Women, Balanced Panel)

VARIABLES	(1) Paid Work	(2) Domestic Work	(3) Own Work
Migrant Household	-0.558 (0.671)	-1.289 (2.725)	-2.282*** (0.795)
Woman receives Remittances, Binary Variable	-6.580** (2.635)	0.0311 (7.698)	-2.439 (1.980)
Age Year	0.191 (0.836)	-0.390 (1.847)	-0.701 (0.659)
Marital Status Dummy, Married=1	5.983 (3.843)	6.267 (6.451)	1.918 (3.377)
Employment Status Dummy, Employed=1	7.366*** (2.527)	-1.482 (3.643)	1.776 (1.411)
Number of Children under 10	0.171 (0.271)	1.564 (1.130)	-0.131 (0.343)
Number of Children under 16	0.154 (0.311)	-1.889 (1.813)	0.401 (0.624)
Household Size	0.127 (0.157)	-1.015 (0.681)	0.0155 (0.188)
Ratio of Women to Men in the Household	0.894 (0.669)	0.557 (2.271)	-0.261 (0.760)
Log of Income per Member	-9.47e-07 (1.84e-06)	-1.63e-05*** (5.27e-06)	6.38e-07 (1.47e-06)
Joint Family Household, Binary Variable	-0.998 (1.447)	-5.574 (3.406)	0.209 (0.970)
Village Average Daily Wage in Rabi Work	0.00961 (0.00826)		
RHPS round indicator = 2	-0.176 (1.397)	7.890*** (2.549)	1.865** (0.817)
RHPS round indicator = 3	-0.185 (2.187)	-5.641 (4.315)	1.320 (1.610)
RHPS round indicator = 4	-0.715 (4.638)	12.78 (9.333)	6.036 (3.852)
Constant	-12.39 (23.16)	49.87 (52.18)	20.64 (18.21)
Observations	1,658	1,658	1,658
R-squared	0.113	0.129	0.057
Number of person_id	813	813	813
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A15 Dependent Variable: Number of hours per week spent in 1. Paid Work, 2. Domestic Work and 3. Own Work (Wife, Full Panel)

VARIABLES	(1) Paid Activity	(2) Domestic Activity	(3) Own Activity
Migrant Wife	4.064*** (0.927)	-7.573 (7.280)	-1.323 (3.926)
Woman receives Remittances, Binary Variable	-2.175* (1.282)	-3.332 (2.040)	-0.221 (0.639)
Migrant Wife * Extended Family	-1.763 (1.909)	6.362 (8.733)	1.156 (4.228)
Migrant Wife * Receives Remittances	-0.391 (2.255)	-6.504 (12.19)	-0.728 (4.393)
Migrant Wife * Receives Remittance * Extended Family	3.258 (2.656)	-16.55 (17.31)	0.0718 (4.863)
Age Year	-3.331*** (0.376)	-1.599 (1.628)	-0.858 (0.576)
Number of Children under 10	-1.354** (0.654)	1.574* (0.873)	-0.268 (0.234)
Number of Children under 16	0.102 (0.594)	-0.357 (1.163)	0.231 (0.398)
Daughters to Sons	0.0363 (0.858)	0.0851 (1.083)	0.135 (0.500)
Ratio of Women to Men in the Household	0.503 (0.506)	-0.587 (1.170)	-0.380 (0.346)
Household Size	-0.324 (0.281)	0.293 (0.438)	-0.154 (0.141)
Joint Family Household, Binary Variable	-1.114 (1.561)	-6.355*** (1.912)	-0.0418 (0.676)
RHPS round indicator = 3, omitted	-		
Income Quintile = 2	1.101 (0.891)	-0.529 (1.204)	0.983** (0.432)
Income Quintile = 3	0.941 (0.931)	2.206* (1.259)	0.676 (0.436)
Income Quintile = 4	-0.0609 (0.911)	-2.555 (1.576)	0.417 (0.484)
Village Average Daily Wage in Rabi Work	-0.00271 (0.00474)		
RHPS round indicator = 3		-2.504 (1.728)	0.190 (0.619)
RHPS round indicator = 4		12.45* (6.720)	5.049* (2.694)
Constant	114.3*** (11.95)	90.06* (51.36)	32.63* (18.18)
Observations	5,289	7,149	7,149
R-squared	0.064	0.048	0.014
Number of person_id	3,164	3,887	3,887
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A16 Dependent Variable: Number of hours per week spent in 1. Paid Work, 2. Domestic Work and 3. Own Work (Wife, Limited Sample)

VARIABLES	(1) Paid Activity	(2) Domestic Activity	(3) Own Activity
Migrant Wife	4.064*** (0.927)	-9.053 (7.235)	2.127 (11.19)
Woman receives Remittances, Binary Variable	-2.175* (1.282)	-2.523 (2.398)	-0.750 (0.829)
<i>Migrant Wife * Extended Family</i>	-1.763 (1.909)	4.745 (8.655)	-2.695 (11.48)
<i>Migrant Wife * Receives Remittances</i>	-0.391 (2.255)	-18.44 (11.81)	-10.31 (11.62)
<i>Migrant Wife * Receives Remittance * Extended Family</i>	3.258 (2.656)	-9.844 (18.17)	12.07 (11.90)
Age Year	-3.331*** (0.376)	-6.276*** (0.781)	-0.661*** (0.249)
Number of Children under 10	-1.354** (0.654)	0.866 (1.527)	-0.0501 (0.369)
Number of Children under 16	0.102 (0.594)	-0.864 (1.438)	0.0477 (0.539)
Daughters to Sons	0.0363 (0.858)	-0.623 (1.569)	-0.358 (0.484)
Ratio of Women to Men in the Household	0.503 (0.506)	-0.942 (1.714)	-0.385 (0.472)
Household Size	-0.324 (0.281)	0.318 (0.689)	-0.337 (0.214)
Joint Family Household, Binary Variable	-1.114 (1.561)	-5.437** (2.735)	-0.378 (1.208)
RHPS round indicator = 3, omitted	-	-	-
Income Quintile = 2	1.101 (0.891)	-1.695 (1.472)	1.442*** (0.478)
Income Quintile = 3	0.941 (0.931)	1.487 (1.600)	0.710 (0.547)
Income Quintile = 4	-0.0609 (0.911)	-2.846 (1.965)	0.0602 (0.642)
Village Average Daily Wage in Rabi Work	-0.00271 (0.00474)		
Constant	114.3*** (11.95)	241.1*** (25.01)	28.97*** (8.055)
Observations	5,289	5,289	5,289
R-squared	0.064	0.064	0.016
Number of person_id	3,164	3,164	3,164
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A17 Dependent Variable: Number of hours per week spent in 1. Paid Work, 2. Domestic Work and 3. Own Work (Wife, Full Panel)

VARIABLES	(1) Paid Activity	(2) Domestic Activity	(3) Own Activity
Migrant Wife	4.217* (2.537)	-13.38** (5.206)	-2.072 (5.204)
Woman receives Remittances, Binary Variable	-2.141* (1.223)	-4.436* (2.550)	-1.151 (0.842)
<i>Migrant Wife * Extended Family</i>	-2.316 (2.827)	13.24* (7.062)	1.931 (5.667)
<i>Migrant Wife * Receives Remittances</i>	0.215 (3.224)	-24.67** (9.797)	-2.375 (5.792)
<i>Migrant Wife * Receives Remittance * Extended Family</i>	3.353 (3.222)	-10.38 (16.46)	3.321 (6.144)
Age Year	0.396 (0.953)	-1.134 (1.998)	-0.763 (0.615)
Number of Children under 10	-0.678** (0.308)	1.969** (0.918)	-0.0603 (0.271)
Number of Children under 16	-0.0615 (0.316)	-1.770 (1.248)	0.335 (0.456)
Daughters to Sons	0.536 (0.539)	-0.850 (1.180)	0.0833 (0.528)
Ratio of Women to Men in the Household	0.174 (0.406)	-0.0587 (1.367)	-0.297 (0.418)
Household Size	-0.0857 (0.158)	-0.0837 (0.490)	-0.235 (0.147)
Joint Family Household, Binary Variable	-0.920 (1.074)	-7.004*** (2.395)	-0.159 (0.849)
RHPS round indicator = 3	-3.602*** (1.030)	-4.891** (2.144)	0.101 (0.675)
RHPS round indicator = 4	-1.890 (3.971)	10.18 (8.388)	4.162 (2.880)
Income Quintile = 2	0.798 (0.756)	-1.522 (1.376)	1.403*** (0.450)
Income Quintile = 3	0.407 (0.782)	0.914 (1.506)	0.364 (0.497)
Income Quintile = 4	-0.391 (0.763)	-3.317* (1.798)	0.00108 (0.567)
Village Average Daily Wage in Rabi Work	-0.00182 (0.00450)		
Employment Status Dummy, Employed=1		3.301** (1.517)	0.953* (0.509)
Constant	-6.632 (30.23)	79.29 (63.37)	30.15 (19.51)
Observations	6,384	6,384	6,384
R-squared	0.056	0.069	0.020
Number of person_id	3,834	3,834	3,834
Individual FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A18 Dependent Variables Log of expenditures per child and log of total education expenditures (Full Panel)

VARIABLES	(1) Log Edu Exp/Child	(2) Log Edu Exp	(3) Log Edu Exp/Child	(4) Log Edu Exp	(5) Log Edu Exp/Child	(6) Log Edu Exp
Household has Migrant Member	0.167 (0.268)	0.113 (0.287)	0.192 (0.265)	0.143 (0.284)		
Household has a Temporary Migrant	0.0682 (0.282)	0.0632 (0.311)	0.0929 (0.281)	0.0931 (0.311)		
Household Receives Remittances	0.213 (0.225)	0.258 (0.246)			0.245 (0.220)	0.281 (0.242)
Log of Income per Person	-0.00407 (0.0306)	-0.00236 (0.0336)	-0.00239 (0.0309)	-0.000332 (0.0338)	-0.00815 (0.0296)	-0.00505 (0.0324)
Household Size	0.115 (0.0810)	0.0829 (0.0890)	0.113 (0.0822)	0.0800 (0.0903)	0.102 (0.0826)	0.0743 (0.0903)
No of Children in Household	0.217** (0.107)	0.438*** (0.119)	0.219** (0.107)	0.440*** (0.119)	0.227** (0.106)	0.444*** (0.118)
Ratio of School Aged Girls to Boys in the Household	-0.185 (0.117)	-0.0956 (0.133)	-0.184 (0.117)	-0.0947 (0.133)	-0.178 (0.116)	-0.0909 (0.132)
RHPS round indicator = 2	0.545*** (0.1000)	0.602*** (0.109)	0.543*** (0.0990)	0.600*** (0.108)	0.544*** (0.0998)	0.601*** (0.109)
RHPS round indicator = 3	0.236** (0.114)	0.278** (0.125)	0.242** (0.115)	0.285** (0.126)	0.241** (0.115)	0.281** (0.126)
RHPS round indicator = 4	0.214 (0.228)	0.271 (0.246)	0.276 (0.210)	0.346 (0.228)	0.217 (0.227)	0.272 (0.246)
Income Quintile = 2	0.0500 (0.146)	0.0557 (0.161)	0.0507 (0.146)	0.0565 (0.161)	0.0499 (0.146)	0.0554 (0.160)
Income Quintile = 3	0.248 (0.173)	0.261 (0.190)	0.247 (0.173)	0.260 (0.190)	0.249 (0.173)	0.262 (0.189)
Income Quintile = 4	0.0335 (0.227)	0.0385 (0.246)	0.0352 (0.227)	0.0405 (0.246)	0.0396 (0.226)	0.0425 (0.244)
Constant	3.343*** (0.436)	3.277*** (0.483)	3.340*** (0.438)	3.273*** (0.485)	3.440*** (0.436)	3.341*** (0.481)
Observations	4,655	4,655	4,655	4,655	4,655	4,655
R-squared	0.033	0.043	0.032	0.042	0.032	0.043
Number of hid	1,717	1,717	1,717	1,717	1,717	1,717
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A19 Dependent Variables Log of expenditures per child and log of total education expenditures (Balanced Panel)

VARIABLES	(1) Log Edu Exp/Child	(2) Log Edu Exp	(3) Log Edu Exp/Child	(4) Log Edu Exp	(5) Log Edu Exp/Child	(6) Log Edu Exp
Household has Migrant Member	-0.103 (0.239)	-0.262 (0.259)	0.00340 (0.235)	-0.134 (0.258)		
Household has a Temporary Migrant	-0.130 (0.446)	-0.182 (0.490)	-0.0788 (0.456)	-0.120 (0.503)		
Household Receives Remittances	0.700** (0.274)	0.845*** (0.294)			0.679** (0.264)	0.793*** (0.285)
Log of Income per Person	0.0193 (0.0437)	0.0229 (0.0484)	0.0310 (0.0437)	0.0370 (0.0484)	0.0215 (0.0432)	0.0299 (0.0477)
Household Size	-0.0529 (0.108)	-0.160 (0.120)	-0.0628 (0.107)	-0.172 (0.120)	-0.0410 (0.102)	-0.132 (0.112)
No of Children in Household	0.270 (0.185)	0.605*** (0.205)	0.266 (0.188)	0.600*** (0.209)	0.267 (0.182)	0.596*** (0.200)
Ratio of School Aged Girls to Boys in the Household	-0.179 (0.191)	-0.00625 (0.214)	-0.163 (0.195)	0.0138 (0.218)	-0.192 (0.193)	-0.0334 (0.215)
RHPS round indicator = 2	0.332* (0.172)	0.356* (0.186)	0.291* (0.167)	0.306* (0.182)	0.349** (0.169)	0.384** (0.183)
RHPS round indicator = 3	-0.0670 (0.187)	-0.0617 (0.202)	-0.0933 (0.188)	-0.0935 (0.205)	-0.0629 (0.188)	-0.0612 (0.203)
RHPS round indicator = 4	-0.136 (0.251)	-0.106 (0.273)	0.0260 (0.229)	0.0903 (0.250)	-0.123 (0.254)	-0.0898 (0.275)
Income Quintile = 2	-0.117 (0.248)	-0.0932 (0.278)	-0.141 (0.246)	-0.122 (0.275)	-0.105 (0.248)	-0.0678 (0.276)
Income Quintile = 3	0.0154 (0.271)	0.0627 (0.294)	-0.0387 (0.274)	-0.00255 (0.297)	0.0249 (0.265)	0.0743 (0.285)
Income Quintile = 4	-0.366 (0.412)	-0.411 (0.439)	-0.393 (0.421)	-0.443 (0.449)	-0.357 (0.410)	-0.398 (0.436)
Constant	6.428*** (0.516)	6.573*** (0.570)	6.457*** (0.516)	6.607*** (0.568)	6.315*** (0.517)	6.306*** (0.563)
Observations	891	891	891	891	891	891
R-squared	0.033	0.067	0.021	0.052	0.032	0.065
Number of hid	288	288	288	288	288	288
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A20 Dependent Variable Girls' share in household education expenditures (Full Panel)

VARIABLES	(1) Girls' Share in Edu Exp	(2) Girls' Share in Edu Exp	(3) Girls' Share in Edu Exp	(4) Girls' Share in Edu Exp
Household has Migrant Member	0.116** (0.0463)	0.107** (0.0547)	0.101* (0.0543)	
Household has a Temporary Migrant	-0.00923 (0.0734)	-0.00577 (0.0761)	-0.00732 (0.0760)	
Household Receives Remittances	-0.0503 (0.0574)	-0.0410 (0.0597)		-0.0188 (0.0596)
RHPS round indicator = 2	0.0503* (0.0287)	0.0511* (0.0290)	0.0522* (0.0287)	0.0505* (0.0287)
RHPS round indicator = 3	0.00331 (0.0360)	0.00728 (0.0347)	0.00662 (0.0345)	0.00587 (0.0344)
RHPS round indicator = 4	-0.0571 (0.0842)	-0.0568 (0.0850)	-0.0706 (0.0753)	-0.0546 (0.0850)
Income Quintile = 2	0.0511 (0.0536)	0.0597 (0.0566)	0.0606 (0.0563)	0.0666 (0.0571)
Income Quintile = 3	0.136 (0.0885)	0.154 (0.0945)	0.155* (0.0941)	0.162* (0.0947)
Income Quintile = 4	0.0736 (0.0713)	0.0934 (0.0837)	0.0943 (0.0833)	0.105 (0.0844)
Log of Income per Person		-0.0139 (0.0120)	-0.0143 (0.0119)	-0.0180 (0.0120)
Share of Women's Inc in HH Income		-0.181 (0.116)	-0.183 (0.116)	-0.168 (0.117)
Ratio of School Aged Girls to Boys in the Household		-0.0190 (0.0345)	-0.0195 (0.0345)	-0.0104 (0.0328)
Household Size		-0.0111 (0.0172)	-0.0107 (0.0172)	-0.0177 (0.0156)
Girls Only Household		-0.0179 (0.0780)	-0.0154 (0.0771)	-0.0254 (0.0769)
Constant	0.686*** (0.0516)	0.943*** (0.146)	0.943*** (0.146)	1.024*** (0.132)
Observations	2,481	2,481	2,481	2,481
R-squared	0.016	0.021	0.021	0.019
Number of hid	1,056	1,056	1,056	1,056
Year FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Income Quintile	Yes	Yes	Yes	Yes
Household Controls	No	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A21 Dependent Variable Girls' share in household education expenditures (Balanced Panel)

VARIABLES	(1) Girls' Share in Edu Exp	(2) Girls' Share in Edu Exp	(3) Girls' Share in Edu Exp	(4) Girls' Share in Edu Exp
Household has Permanent Migrant	0.138* (0.0715)	0.0650 (0.0820)	0.121* (0.0661)	
Household has a Temporary Migrant	0.120 (0.101)	0.0937 (0.0940)	0.117 (0.101)	
Household Receives Remittances	-0.0764 (0.0823)	-0.0980 (0.0837)		-0.0381 (0.0795)
RHPS round indicator = 2	0.0393 (0.0481)	0.0450 (0.0476)	0.0482 (0.0475)	0.0208 (0.0479)
RHPS round indicator = 3	0.00907 (0.0496)	0.0293 (0.0529)	0.0143 (0.0494)	0.00107 (0.0499)
RHPS round indicator = 4	-0.0599 (0.0923)	-0.0532 (0.0929)	-0.0811 (0.0818)	-0.0771 (0.0908)
Income Quintile = 2	-0.0500 (0.0688)	-0.0636 (0.0843)	-0.0525 (0.0838)	-0.0644 (0.0833)
Income Quintile = 3	0.0876 (0.0824)	0.0772 (0.106)	0.0856 (0.103)	0.0803 (0.103)
Income Quintile = 4	-0.0587 (0.0894)	-0.0997 (0.120)	-0.0686 (0.113)	-0.0620 (0.117)
Log of Income per Person		0.00487 (0.0217)	0.00316 (0.0223)	-0.000553 (0.0227)
Share of Women's Inc in HH Income		-0.104 (0.120)		
Ratio of School Aged Girls to Boys in the Household		0.0233 (0.0678)		
Household Size		-0.0346 (0.0297)		
Ratio of Adult Women to Men		0.129** (0.0540)		
Constant	0.823*** (0.0667)	0.881*** (0.244)	0.788*** (0.181)	0.861*** (0.182)
Observations	590	590	590	590
R-squared	0.044	0.067	0.042	0.033
Number of hid	213	213	213	213
Year FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Income Quintile	Yes	Yes	Yes	Yes
Household Controls	No	Yes	No	No

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A22 Dependent Variable: Share of Girls in Households' Expenditure on Schooling and Education of All Children of the School Age (Ages 5-17), Balanced Panel

VARIABLES	(1) Girls' Share	(2) Girls' Share	(3) Girls' Share	(4) Girls' Share
Internal Migrants	0.176*** (0.0505)	0.170*** (0.0615)	0.172*** (0.0617)	
International Migrants	-0.0368 (0.0772)	-0.0431 (0.0763)	-0.0469 (0.0769)	
Household Receives Remittances	-0.0330 (0.0557)			-0.0168 (0.0576)
Return International Migrant	0.206 (0.155)	0.209 (0.147)		0.237 (0.156)
Constant	0.678*** (0.0513)	0.904*** (0.147)	0.905*** (0.147)	1.020*** (0.132)
Observations	2,481	2,481	2,481	2,481
R-squared	0.019	0.024	0.023	0.020
Number of hid	1,056	1,056	1,056	1,056
Year FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Income Quintile	Yes	Yes	Yes	Yes
Household Controls	No	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control variables: Log of household income per person, household size, ratio of girls to boys of the school going age, share of women's income in household income, dummy variable indicating if the household has only girl children in the school going age group.

Table A23 Dependent Variable: Share of Girls in Households' Expenditure on Schooling and Education of All Children of the School Age (Ages 5-17), Balanced Panel

VARIABLES	(1) Girls' Share	(2) Girls' Share	(3) Girls' Share	(4) Girls' Share
Household has Migrant Member	0.108** (0.0459)	0.104* (0.0538)	0.106** (0.0537)	
Household has a Temporary Migrant	0.0128 (0.0774)	0.0145 (0.0801)	0.0155 (0.0800)	
Household Receives Remittances	0.00812 (0.0534)	0.0178 (0.0558)		0.0352 (0.0558)
Household has a Male Return Migrant	-0.131 (0.0878)	-0.128 (0.0861)	-0.126 (0.0856)	-0.115 (0.0832)
Constant	0.689*** (0.0517)	0.927*** (0.144)	0.926*** (0.144)	1.007*** (0.131)
Observations	2,481	2,481	2,481	2,481
R-squared	0.016	0.022	0.022	0.020
Number of hid	1,056	1,056	1,056	1,056
Year FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Income Quintile	Yes	Yes	Yes	Yes
Household Controls	No	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control variables: Log of household income per person, household size, ratio of girls to boys of the school going age, share of women's income in household income, dummy variable indicating if the household has only girl children in the school going age group.

Table A24 Dependent Variable Number of hours per week spent in Paid Work

VARIABLES	(1) Hours per Week	(2) Hours per Week	(3) Hours per Week	(4) Hours per Week
Household has Permanent Migrant	1.072 (1.900)			0.965 (1.855)
Household Receives Remittance		2.410 (1.847)		2.356 (1.800)
Household has Temporary Migrant			-1.841 (1.539)	-2.014 (1.593)
Constant	5.303 (5.816)	5.321 (5.767)	5.160 (5.814)	5.031 (5.754)
Selection equation				
Wealth Index	-0.0461** (0.0198)	-0.0465** (0.0198)	-0.0461** (0.0197)	-0.0463** (0.0198)
Household has Permanent Migrant	-0.248* (0.136)			-0.269** (0.133)
Household Receives Remittance		0.0867 (0.134)		0.116 (0.134)
Household has Temporary Migrant			0.234 (0.150)	0.243 (0.153)
athrho	-0.184*** (0.0430)	-0.185*** (0.0431)	-0.184*** (0.0433)	-0.183*** (0.0430)
Insigma	2.516*** (0.0425)	2.516*** (0.0423)	2.516*** (0.0424)	2.515*** (0.0423)
Observations	10,749	10,749	10,749	10,749
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Control Variables: Household Size, Household Type (Dummy Variable=1, Joint/Extended Family Household), Log of Household per person Annual Income, Ratio of Adult Women to Men in the Household, Ratio of Girls to Boys in the household (Children under the age of 18), Wealth Index, Sex of the Head of the Household, Education of the Head of the household, Child's Age, Child Sex, Year Fixed Effects and District Fixed Effects. Selection Equation: Household Size, Household Type (Dummy Variable=1, Joint Family), Log of Household Per person Annual Income, Ratio of Women to Men in the Household, Ratio of Girls to Boys in the Household, Sex of the Household Head, Year Fixed Effects and District Fixed Effects.				

Table A25 Shares of expenditures spent by households on education of girls and boys. Sample restricted to households with both girls and boys of that age

Variable	Obs, N	Girls (N)	Boys (N)
Ages 5-10	2160	0.43*** (1080)	.99*** (1080)
Ages 11-16	1147	1.0*** (463)	1.6*** (684)

Table A26 Share of Households' Education Expenditures for Boys and Girls and Expenditures incurred per Child (Missing Data not accommodated; Travel Expenditures included)

Variable	Girls (N)	Boys (N)
Ages 5-10	.97*** (1036)	1.29*** (1226)
Ages 11-16	1*** (664)	1.4*** (960)
Annual expenditure per Child (Ages 5-10)	4929** (1065)	6854** (1267)
Annual expenditure per Child (Ages 11-16)	10510 (668)	12451 (971)

*** p<0.01, ** p<0.05, * p<0.1
Note: Expenditures are in Pakistani Rupee.

Table A27 Women who Participate in Household Decisions and Women who do Not Participate in Household Decisions (Married and Unmarried Respondents)

	Participates in Small Expenditure Decisions (%)	Does not Participate in Small Exp Decisions (%)	p-value ¹ (Pearson's Chi2)
Number of Observations	1047 (57)	789 (43)	
Age	38.5***	42.5***	0.0000
Literacy	16.8	15.3	
Ever attended School	18	19.6	
Years of Schooling	1.2	1.2	
Household Annual Income per person (in PKR)	42791	38096	
Household Income Quintile ³			0.000 (0.000)
First	49	51	
Second	60	40	
Third	60	40	
Fourth	60	40	
National Identity Card	81	86	0.005 (0.005)
Employed	22	16	0.001 (0.001)
	11980	6352	0.000
Land, House, Car	2.5	1.4	
Large Livestock	6.3	6.1	
Small Livestock	9.7	9	
Consumer Durables	9.3	8.6	
Mobile Phone	12	6.3	0.000 (0.000)
Religion			0.004 (0.003)
Muslims	57.5	42.5	
Hindus and Christians	37.5	62.5	
Ethnicity			0.000 (0.000)
Punjabi	74	26	
Sindhi	29	71	
Baloch	30	70	
Pashtun	60	40	

Other	58	42
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p-value of Fischer's Exact test. p-values in parentheses correspond to Pearson's Chi. p-values higher than .1 are not reported.

Table A28 Women who Exhibit Gender Consciousness (Married and Unmarried Respondents)

	Conscious (%)	Not Conscious (%)	p-value ¹ (Pearson's Chi2)
Number of Observations	1199 (65)	642 (35)	
Age	40.5	41.3	
Education			
Literacy	19	7.6	0.0000 (0.00)
Ever Attended School	22	9.7	0.000 (0.000)
Number of years of Schooling ²	1.4	0.6	0.0000
Employment and Income			
Household Annual Income per person (in PKR)	44228	34897	0.0042
Household Income Quintile ³			0.012 (0.012)
First	60	40	
Second	62	38	
Third	68	32	
Fourth	70	30	
National Identity Card	86	85	
Employed	19.5	21.3	
Own Income (in PKR)	9802	9103	0.6142
Asset Ownership			
Land, House, Car	2	1	
Large Livestock	6.2	5.6	
Small Livestock	10	7	
Consumer Durables	11	5.3	0.0000
Mobile Phone	12	5	0.0000
Religion and Ethnicity			
Religion			0.0000
Muslims	65.5	35.5	
Hindus and Christians	32	68	
Ethnicity			0.000 0.000
Punjabi	74	26	
Sindhi	47	53	
Baloch	44	56	
Pashtun	74	26	
Other	67.5	32.5	

p-value of Fischer's Exact test. p-values in parentheses correspond to Pearson's Chi. p-values higher than .1 are not reported.

Table A29 Average number of Girls and Boys in Households in Age-Groups (0-4, 5-10, 11-15, 16-18)

Average number of children	Obs.	Girls (Mean)	Boys (Mean)	t stat	p value
Age (0-4)	6235	0.417	0.43	-1.07	0.28600
Age (5-10)	6235	0.455	0.484	-2.21	0.02710
Age (11-15)	6235	0.382	0.41	-2.34	0.01928
Age (16-18)	6235	0.253	0.234	2.13	0.03340

Table A30 Average number of Girls and Boys born alive but later died

Variable	Obs.	Girls (Mean)	Boys (Mean)	t stat	p value
Number of Reported Deaths of Children	594	0.9125	1.0370	-2.0958	0.0363

Note: This data is from the birth histories of all women in the age group 14-49 who had ever been married living in the households. Households reported the number of children born to these women including those who had died after birth.

Table A31 Dependent variable: Household's Share of Education Expenditures Spent on Girls (Ages 5-10, Unbalanced panel)

VARIABLES	(1) Girls Share	(2) Girls Share	(3) Girls Share
Woman's Participation in Edu Decisions, Binary Variable	0.277 (0.175)	0.278 (0.179)	0.122 (0.251)
Woman's Consciousness, Binary Variable		0.0140 (0.0837)	-0.0161 (0.0865)
<i>Decide * Conscious</i>			0.180 (0.196)
Constant	-1.621 (1.213)	-1.634 (1.231)	-1.728 (1.243)
Observations	663	663	663
R-squared	0.036	0.036	0.038
Number of hid	415	415	415
Household FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Household size, Sex of the household head, Ratio of Adult Women to Men and Log of household per Person Annual expenditure

Table A32 Dependent Variable: Log of Expenditure of Child's Education (Ages 5-10)

VARIABLES	(1) Log of Edu Exp	(2) Log of Edu Exp	(3) Log of Edu Exp	(4) Log of Edu Exp
Girl Child, Binary Variable	-0.247*** (0.0843)	-0.232*** (0.0750)	-0.206 (0.126)	-0.287* (0.155)
Woman's Consciousness, Binary Variable	0.141* (0.0836)	0.142 (0.114)	0.150 (0.125)	0.151 (0.125)
Woman's Participation in Edu Decisions, Binary Variable	0.0532 (0.107)	0.0805 (0.149)	0.0796 (0.149)	0.0849 (0.147)
<i>Woman Conscious * Girlchild</i>			-0.0290 (0.144)	0.0715 (0.163)
<i>Woman Decides * Girlchild</i>		-0.0587 (0.126)	-0.0590 (0.127)	0.253 (0.358)
<i>Woman Conscious * Decide * Girl Child</i>				-0.379 (0.402)
Constant	6.494*** (0.345)	6.485*** (0.457)	6.482*** (0.456)	6.460*** (0.443)
Selection Equation				
Distance to Girls' Primary School	-0.0395*** (0.0101)	-0.0396*** (0.0135)	-0.0394*** (0.0134)	-0.0388*** (0.0134)
Girl Child, Binary Variable	-0.347*** (0.0572)	-0.324*** (0.0646)	-0.466*** (0.0962)	-0.508*** (0.102)
Woman's Consciousness, Binary Variable	0.583*** (0.0539)	0.582*** (0.0725)	0.483*** (0.0878)	0.483*** (0.0879)
Woman's Participation in Edu Decisions, Binary Variable	0.267*** (0.0631)	0.322*** (0.0967)	0.326*** (0.0955)	0.327*** (0.0958)
<i>Woman Conscious * Girlchild</i>			0.203* (0.108)	0.262** (0.116)
<i>Woman Decides * Girlchild</i>		-0.102 (0.119)	-0.111 (0.120)	0.0916 (0.236)
<i>Woman Conscious * Decide * Girl Child</i>				-0.267 (0.265)
Constant	-0.991*** (0.196)	-1.000*** (0.256)	-0.927*** (0.258)	-0.944*** (0.256)
athrho				
Constant	0.262*** (0.0486)	0.266*** (0.0687)	0.262*** (0.0685)	0.261*** (0.0681)
Insigma				
Constant	0.256*** (0.0442)	0.257*** (0.0616)	0.256*** (0.0615)	0.256*** (0.0614)
Observations	4,236	4,236	4,236	4,236
Village FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Control Variables: Child age, Number of Boys in the household, Number of Girls in the household, Log of Household's per capita annual income. Selection Equation: Log of household's per capita annual income, Woman's participation in household decisions. Child's Age

The variables in italics are interaction terms