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MIGRATION AND GENDER ISSUES

Determinants, Impacts and Interactions

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This thesis is dedicated to all the people living in a condition of poverty and vulnerability, who struggle every day to make a livelihood for themselves and their families and whose crucial contribution to social and economic development is too often overlooked and marginalised by the unfair structures of society.

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Chapter 1

A
Three-Paper
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My doctoral thesis consists of three separate research papers, which together represent the result of three years of research undertaken by me as part of the PhD programme in Development Economics at the University of Florence. Although the three papers are each free standing, they constitute a distinct research path that has unfolded around the issues related to migration and gender. This first chapter introduces the main features of the three papers and explains how my investigation of the issues related to migration and gender has developed over the course of the PhD programme.

This doctoral thesis is the product of the research path that I have followed in the course of my PhD programme in Development Economics and comprises of the three research papers that I have produced during this period. I am presenting here the three papers separately, since they represent free-standing researches that need to be studied in their individual analytical framework. At the same time though, the three papers together constitute my distinct doctoral research path that has unfolded around the issues related to migration and gender. In fact, my third paper, which deals with the impacts of migration on gender-specific labour allocation, is the culmination of my research on both migration and gender issues, which can thus be regarded as the overall topic of this PhD thesis. In all of the three papers, I have investigated the effects determined by migration and gender dynamics on the labour patterns of either children or adults, which therefore gives labour issues a prominent role in my research work. In addition, I have also explored other related subjects, which are equally affected by migration and gender issues, including child schooling rates and women's time burden and personal welfare. Hence, the overall aim of my doctoral research is to shed light on the centrality of migration and gender in the study of some key aspects associated with men, women and children living in the developing world.

My first paper is concerned with the impacts of internal and international remittances on child well-being, intended as child labour prevalence and schooling rates, in Vietnam. The empirical strategy of this research includes both a cross-sectional and a panel analysis, making use of the 1993 and 1998 Vietnam Living Standards Surveys (VLSS). By employing an original analytical procedure, I have measured the average response of remittance recipient households when it comes to child well-being, showing that only internal remittances appear to have a significant beneficial impact on child labour and schooling. These results also hint at some gender-specific effects of remittances, which arose my interest in this subject. As a consequence, I decided to shift the research focus on gender issues in my second paper, which I wrote during my time as a visiting PhD student at the Institute of Development Studies (IDS), in the United Kingdom. This second paper investigates the disproportionate impact that economic shocks and crises have on women, highlighting the unfair gender biases and constraints that characterise both the household and the labour market. The empirical analysis combines qualitative information derived from an IDS field study and quantitative data based on the 2003 and 2008/09 Kenya Demographic Health Surveys (DHS). My findings indicate that Kenyan women bore the greatest burden of the multiple crisis that affected their country from 2007 to 2009, engaging in undesirable jobs to make up for the crisis-induced loss of household income, whilst continuing to be solely responsible for domestic work. As a consequence, most women ended up being overloaded with work, as clearly emerging from my qualitative results, which negatively affected their already heavy time burden. This research made me realise the importance of adopting a gender-specific perspective for the analysis of the dynamics characterising developing countries' households, particularly in the case of the division of labour amongst household members. This prompted me to dedicate my third and last PhD paper to the labour allocation of men and women in the households affected by the migratory process. On the one hand, this allowed me to continue and develop my previous work on migration and remittances; on the other hand, it also provided me with the opportunity to deepen my understanding of some of the gender issues related to the allocation of labour within the household.

In particular, my third paper focuses on the impacts of internal and international migration and remittances on the hours of work allocated by men and women across farm, off-farm and unpaid family work, in Indonesia. The panel analysis that constitutes the empirical model of the research is based on the 2000 and 2007 waves of the Indonesia Family Life Survey (IFLS), which is a multipurpose survey including information on both migration and labour activities. The latter only refer to the main job performed by the respondent, thus preventing me from undertaking a time-use analysis of all the activities carry out by the individual during the day. Nonetheless, my analysis shows interesting results concerning migration-induced changes in the time spent by men and women performing their main work activities. Although losing a household member to migration and receiving remittances appear to determine a general reduction in both sexes' working hours, some critical differences emerge between the impacts of internal and international remittances and gender-specific effects are also detectable. Whilst women are found to reduce their time in farm, off-farm and unpaid work as soon as they receive either internal or international remittances, men's labour patterns appear to be mostly affected by the more substantial international remittances, which they use to either reduce their work effort in off-farm and unpaid work or to increase the hours spent in farm work, indicating potential investments in agricultural production. Hence, my third paper seems to broadly confirm the main indications obtained in my previous two papers. On the one hand, the impacts of both internal and international migration and remittances need to be taken into account, given the proven relevance of the two types of flows and their distinct attributes and effects. On the other hand, changes and transformations in the roles and activities of men and women within the household and in the labour market, due to migration or other shocks, are properly understood only by adopting a gender sensitive analytical approach.

The central aim of my first paper is to assess whether the money received from internal and international migrants is used by the recipient households to withdraw children from the labour market and send them to school. As mentioned above, the reason for distinguishing between internal and international remittance flows is to take into consideration the different decision processes and resulting effects that underlie internal and international migratory experiences. The impacts of remittances on household decisions regarding school enrolment and child labour have been extensively investigated in the literature. According to the 'luxury axiom' (Basu and Van, 1998), parents take the decision to send their children to work not out of a selfish attitude, but in order to meet basic household needs. Therefore, since remittances can be theoretically incorporated in a household model as an additional income source, an increase in remittance inflows is likely to have beneficial effects for children, by releasing their parents from the necessity of relying on child labour. An increasingly large number of empirical studies seem to confirm this line of reasoning, showing that remittances do help reduce child labour and also have the potential to produce a positive effect on education. In this regard, Edwards and Ureta (2003) find that international remittances significantly affect school retention in El Salvador and Yang (2008) demonstrates that, in the Philippines, educational expenditure increases and child labour declines when households receive remittances from abroad. In a more recent study on El Salvador, Acosta (2011) shows that the impact of remittances on schooling disappears when controlling for endogeneity, whilst the reduction in child wage labour due to remittances is confirmed as significant. The few studies that have attempted to disentangle the effects produced by internal and international remittances tend to indicate that international remittance inflows have a more positive and significant impact than internal ones. Nguyen (2009) shows that, in Vietnam, international remittances are channelled into productive investments, whilst internal remittances are normally used for consumption. When it comes to child well-being, Joseph and Plaza (2010) find that only overseas remittances reduce child labour, in Ghana, whilst internal remittances appear to have no statistically significant impact. However, a number of studies have also highlighted the potential negative side-effects associated with international migration. Giannelli and Mangiavacchi (2010), for instance, find that a lack of parental care for children left behind by international migrants, in Albania, can have a long-term negative impact on school attendance. My first paper aims at capturing also this negative side-effect, by distinguishing between the impacts of internal and international remittances, and thus furthering the understanding of the overall effects on children of the migratory processes occurring in their households.

One interesting aspect emerging from this first paper was, for me, the gender differential in school attendance rates, with boys found to be more likely to go to school than girls. This finding led me to investigate more in depth the issues related to gender inequality, in my second paper. In particular, the research that I have undertaken at IDS for my second paper applies a gender-specific perspective to the study of the impacts of economic shocks and crises in Kenya. This paper investigates the disproportionate burden that Kenyan women were obliged to bear as part of the coping strategies that their households put in place to deal with the socioeconomic transformations induced by the economic downturn. The research focus of the paper is concerned with the deteriorating working conditions of Kenyan women during the period of multiple crisis that struck their country between 2007 and 2009 and is intended to explore the unfair gender division of labour and responsibilities that characterises the households, the local communities and the informal and formal labour markets. The literature informing my second paper is very extensive and includes feminist economics, gender analysis frameworks and human well-being. Baden (1997) clearly argues that gender needs to be recognised as a central and distinct aspect of vulnerability, which explains the specific determinants of women's poverty and disadvantage. Changes in capacities and vulnerabilities induced by crises and economic transformations have been shown to affect men and women in a different way (Fontana et al., 1998), due to the socioeconomic structure of unfair gender based constraints in society (Folbre, 1994). A number of authors have stressed the importance of gender differences in the access and control over resources amongst household members, as the main reason behind gender inequality (Overholt et al., 1985). Others have emphasised the centrality of gendered power relations at the community and institutional levels, which are deemed as responsible for perpetuating gender inequality (Elson, 1993). As a result, there exists a 'stickiness' in the substitutability between men's and women's household roles and labour activities (Kabeer, 1997). Women have both productive roles, on more precarious terms than men, and reproductive roles, including domestic and caring tasks, whilst men only work outside of the household. Therefore, when women increase their participation in the labour market to make up for the income loss due to economic shocks, they cannot reduce their housework and leisure time becomes the only adjusting factor at their disposal (Andia Falgade, 2006). Elson (1995) points out that, in times of crisis, women become 'shock absorbers' and end up being overloaded with work, with no leisure time left. In addition, most of the work performed by women is labelled as unpaid and, as a consequence, its magnitude and importance for the national and household economies tend to be underestimated (Beneria, 2003).

By including unpaid family work in the analysis and by looking at men's and women's work activities separately, my third paper attempts to build on these considerations, which emerge from the literature background as well as the results of my second paper. At the same time, in the third paper I consolidate my investigation into the impacts of migration and remittances, thus concluding my research path by bringing together migration and gender issues. As already mentioned, my third and last paper is concerned with the effects that migration and remittances produce on men's and women's allocation of working hours in migrants' households of origin. Most of the literature on the subject has focused on the impacts of migration on labour supply (Adams, 2011; Acosta, 2011), whilst my analysis also includes farm and unpaid family work, thus adopting a more gender sensitive approach, given women's prominent contribution to those sectors (Blackden and Wodon, 2006). Furthermore, examining the changes in the number of hours spent by remittance recipients in different areas of work, rather than focusing only on their employment status, has been shown to be more revealing of the actual work-shifts induced by migration (Hanson, 2007; Görlich, Mahmoud and Trebesch, 2007). According to the neo-classical model of labour and leisure choice, remittance recipients reduce the number of hours worked, since their reservation wage increases (Killingsworth, 1983). This income effect of remittances have also been demonstrated by a number of empirical studies. For instance, Airola (2008) shows that, in Mexico, the hours worked by remittance recipients declined and Kim (2007) finds that recipients are likely to stop working all together in Jamaica. A few studies also show a gender difference in the impacts of migration, with women normally more likely than men to reduce their work effort outside of the household, when receiving remittances (Rodriguez and Tiongson, 2001; Hanson, 2007). Given the already discussed condition of time poverty suffered by many overworked women in developing countries, this reduction in the number of women's labour hours can be interpreted as a positive consequence of migration (Jolly and Reeves, 2005). Interestingly, the literature suggests that migration could also have the opposite effect, increasing the number of hours worked by household members left behind, as a result of the income loss due to the departure of the migrant (Amuedo-Dorantes and Pozo, 2006). Besides, remittance inflows can be channelled into productive investments, especially in agriculture, thus leading, also in this case, to an increase in labour hours (Damon, 2010). My analysis draws from this literature as it investigates both these aspects, finding that, on the one hand, the income effect of remittances is stronger than the potential disruptive effect of migration and, on the other hand, the use of remittances for investment purposes tends to be limited to the more substantial international inflows and appears to have a gender-specific characterisation, which hints at a distinction in men's and women's roles and power over household resources.

As far as the empirical strategy is concerned, I employ different econometric models in each one of the three papers, with the aim of undertaking the most suitable empirical analysis for each specific research. In the first paper, I carry out a cross-sectional analysis as well as a panel analysis in order to assess the contribution made by internal and international remittances to the decline of child labour and the improvement of school attendance rates amongst Vietnamese children aged 6 to 15. The dataset used in the analysis comprises of the first two rounds of the VLSS and includes 2,054 panel households, which I have extracted from the total 1993 and 1998 VLSS panel sample of 4,300 households, by keeping the households with at least one child aged 6 to 15. Both my cross-sectional and my panel analyses make use of this same household sample, for comparability purposes. The outcome variables of my estimations are Child Labour and Schooling, which are defined, respectively, in accordance with the employment and education sections in the VLSS questionnaire. The control variables used in the analysis account for a number of relevant individual and household characteristics. In the cross-sectional analysis, I perform two sets of Ordinary Least Squares (OLS) regressions for each one of the two years, whilst for the panel analysis I employ a linear probability model with fixed effects. Using an original estimation procedure, I perform my analysis at the household level, thus calculating the average values of the attributes of the children who belong to the same household. Hence, I generate an average observation for each household, which enables me to compare the average 1993 child with the average 1998 child, in the same household. Although this methodology causes me to lose some of the child-specific information, it allows me to include in the analysis all the households with children in my age range of interest, which are part of the panel sample. In fact, because of the time span separating the two survey rounds, most children in the 1993 sample become older than fifteen by 1998, thus dropping out of the school-age range chosen for my analysis and making it impossible to specifically focus on panel-children. Besides, I believe that this approach is appropriate to understand households' response when it comes to receiving remittances, since it is not the individual child that receives the money sent back by migrants, but it is the household unit as a whole. The use of a fixed-effects linear model enables me, in the panel analysis, to control for time-invariant unobservable factors, which are normally associated with migration and remittances. In particular, recipients may possess characteristics which are related to the fact that they receive remittances and, at the same time, have an influence on the probability of their children to go to work or to school. Interestingly, by controlling for this endogeneity issue, my panel estimation produces results that are in contrast with my cross-sectional results. Specifically, internal remittances are found, in the panel analysis, to have a more significant positive effect on child labour and schooling than international remittances. This may be due to the lack of parental care associated with migration, which is stronger in the case of international migration since internal migrants can maintain closer relations with children in their households of origin. The cross-sectional results, showing a more significant impact of international remittances are probably biased by unobservable factors, including the economic status of the households, which are thus effectively dealt with by my fixed-effects model.

In my second paper, I use a multi-method analytical approach, which combines quantitative and qualitative analysis. I have decided to integrate these two different sources of information in order to enhance the results of my research, by using the indications coming from the IDS qualitative study to achieve a better understanding of the findings emerging from my econometric analysis. The latter, which makes use of the 2003 and 2009 Kenya DHS separately, is a two-fold categorisation that attempts to estimate, on the one hand, the probability of a woman to participate in extra-household labour and, on the other hand, the probability of her choosing a particular type of occupation. In particular, the work participation model employs a binomial logistic regression estimator, whose outcome variable takes value 1 if a woman, aged 15 to 49, performs some form of work outside of the household, and 0 otherwise. Whereas, the occupational choice model uses a multinomial logistic regression, in which the reference category is being outside the labour force and the three outcome variables are unpaid work, permanent employment and self-employment. This further specification, concerning the type of work performed by the woman, allows me to investigate more in detail her labour status and the determinants that underlie her decision to engage in a particular type of occupation. I make use of an extensive range of individual, household and community explanatory variables, with the aim of understanding which elements have the most pronounced and significant effect on the woman's labour choice problem. The key explanatory variable used in this analysis is the empowerment indicator, which I have constructed by using the DHS questionnaire's section on women's attitude towards domestic violence. Crucially, my multinomial results show that, whilst in 2003 women who were relatively more empowered were also less likely to choose the non-paid and poorly paid jobs, in 2009 the empowerment indicator loses its significant impact as an explanatory variable, thus suggesting that an increased number of women were led to engage in undesirable jobs, regardless of their level of emancipation, as a consequence of the crisis. The qualitative analysis help me to elaborate on the meaning of these quantitative results and to partially make up for the lack of information on women's time use and working conditions in the DHS datasets. The IDS qualitative study, which I am using for my analysis, was undertaken in two separate Kenyan communities, through semi-structured interviews and group discussions, with the objective of assessing the social dimensions of the food, fuel and financial crises that affected Kenya from 2007 to 2009. The great majority of the women who participated in this study pointed out that they were forced by the crisis to seek new means of income and carry out undesirable and menial job, which they would have normally avoided. This appears to confirm my quantitative findings, highlighting that, in 2009, the decision to work was not taken as a free and empowered choice, but was, on the contrary, a necessary expedient who made women's lives 'generally much harder', as claimed by one of the participants in the study. A key aspect emerging from this qualitative information, which was impossible to single out in the quantitative analysis, is that women ended up being overloaded with work as a consequence of the crisis, since they were expected to continue performing all domestic chores even when working more outside of the house.

By combining quantitative and qualitative analysis, I therefore manage to depict a clearer and more comprehensive picture of the gender-specific impacts that the economic downturn had on Kenyan women, capturing the unfair burden that they were required to bear, with negative consequences for their overall welfare.

The empirical model of my third paper is based on the latest two waves of the IFLS, which share the same definition of my variables of interest related to migration, and makes use of the large range of data provided in the survey on migration and remittances, work experience, farm activity, education, income, assets and other individual and household information. As mentioned above, my panel analysis, which is performed on a sample of 13,801 individuals, aims at estimating the impact of losing one or more household members to migration and receiving internal or international remittances on the allocation of hours spent working in the activity that consumes most time by men and women in migrants' households of origin. I employ a Tobit model for panel data, which enables me to efficiently estimate my three dependent variables, namely number of hours worked by the individual in off-farm, farm and unpaid activities, accounting for the fact that they are all censored at zero hours worked. This censored regression model for panel data allows me to control for unobserved time-invariant individual effects, with a random effects assumption. In the paper I highlight the fact that, as argued by the theoretical literature on the subject, the use of a fixed-effects panel Tobit model would be technically challenging and would not produce consistent estimations, especially given the limited number of time periods used in my panel analysis. Besides, other empirical strategies that I have attempted to employ for this analysis, including the Heckman two-stage estimation procedure and the instrumental variable approach, did not produce efficient and satisfactory results and led me to confidently choose the Tobit model for panel data with random effects assumption. As discussed in the presentation of my first paper's empirical model, controlling for unobservable characteristics is very important when investigating the effects of migration and remittances, given the necessity of dealing with endogeneity issues. Hence, I believe that my panel analysis, showing an overall reduction in the number of hours worked by men and women with some interesting gender and sector differentiations, is capable of producing valid and reliable empirical results.

From these three papers it is possible to draw several conclusions specifically relating to the different research topics under consideration as well as a more general consideration regarding the importance of migration and gender issues. The results of my first paper clearly show that remittances can have a positive effect on child well-being, reducing the incidence of child labour and increasing schooling attendance rates. In addition, this analysis demonstrates that it is essential to take into consideration both internal and international remittance flows, since their characteristics and effects can be remarkably different. In particular, my panel analysis results indicate that internal remittances matter more than international remittances when it comes to child well-being. This is somewhat surprising, since most of the studies on the subject suggest that international remittances have a stronger and more significant impact. Since my cross-section results also show a prevalent effect of international remittances, I ascribe the difference in my panel results to the use of a fixed-effects model, which enables me to control for time-invariant unobservable characteristics and critically mitigates endogeneity problems. On the one hand, my first paper's findings suggest that the policy focus, in Vietnam as well as in other developing countries with similar socioeconomic and migratory dynamics, should be placed on internal migration and remittance flows at least as much as on international flows. Similarly, more empirical research should be dedicated to explore the specific effects produced by internal migration and remittances on child and adult recipients. On the other hand, my conclusions also give rise to some interesting methodological implications, highlighting, in particular, the importance of dealing with endogeneity issues in order to obtain unbiased and reliable results, when analysing the impacts of migration and remittances.

Also in my second paper, the implications in terms of analytical methodology play a central part in the conclusions of the research. Indeed, the combination of quantitative and qualitative analysis demonstrates to be an effective approach to achieve a more complete and satisfactory understanding of the gender-specific impacts of economic shocks and crises. The qualitative information used in the paper help attain a correct and realistic interpretation of the results produced by the quantitative analysis. The latter sheds considerable light on the changing determinants of Kenya's female labour force participation and occupational choice in the wake of the multiple crisis that affected the country. The qualitative study emphasises the effects of such transformations as they were felt by the women in their daily lives, with crucial insights into their deteriorating time burden and personal welfare, which cannot be captured in the quantitative data. From a policy perspective, the main implication that emerges from my research is that, since economic shocks appear to disproportionately affect women, policy interventions aimed at stimulating economic recovery need to be gender-specific in order to account for gender inequality and women's particular vulnerabilities. This is not only applicable to Kenya, the case study of my paper, but equally to any other society affected by unfair gender structures and social norms. Hence, additional research should investigate the impacts of crises and shocks on women's well-being, preferably adopting a multi-method analytical approach.

Finally, the extensive set of results of my third paper suggests that migration and gender issues interact when it comes to the effects of migration and remittances on men's and women's labour allocation. In fact, my findings on Indonesia show that women use either internal or international remittances to simply reduce the hours of work that they perform in off-farm, farm and unpaid family activities. This indicates that women are keen on using this extra non-labour income to ease their time burden, which is a result expected from the considerations on gender issues thoroughly discussed in my second paper. Conversely, my analysis shows that men reduce their off-farm work only when receiving international remittances, which are on average more substantial than internal remittances. At the same time, I also find that international remittances are used by men to increase their time spent in farm work, which suggests an investment in agricultural production. This is probably one of the most interesting results of my research, since it highlights the potential productive role of remittance flows and should therefore be further investigated. The significance of migration impacts, both internal and international, is thus confirmed together with the centrality of gender issues, providing a rightful conclusion to my research path.

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Chapter 2

Internal vs. International Migration: Impacts of Remittances on Child Well-Being, in Vietnam

This paper focuses on the effects of internal and international remittances on children's well-being. Using data from the 1992-1993 and 1997-1998 Vietnam Living Standards Surveys, I investigate average school attendance and child labour in remittance recipient and non-recipient households. The results of my cross-section and panel analyses indicate that remittances increase schooling and reduce child labour. Although international remittances are found to have a stronger beneficial impact than internal remittances in the cross-section analysis, the panel analysis reverses this result, showing that the only significant impact stems from internal remittances.

***Key words**: Migration, Remittances, Schooling, Child Labour, Panel Data, Vietnam*

Introduction

This paper investigates whether a significant positive association between remittances and child well-being exists, by examining the incidence of school attendance and child labour in remittance recipient households, as compared to households where this income source is absent. In addition, since internal and international migratory experiences may be the outcome of different decision processes and the source of different effects, the paper aims at disentangling the impacts of internal and international remittances on children's well-being.

The literature on the effects of remittances on household decisions is large and continuously growing. According to Adams and Cuecuecha (2010) there are at least three distinct views: the most widespread one is that remittances are spent at the margin like income from any other source; a second view maintains that remittances tend to be spent on consumption rather than investment goods; finally, a more recent one claims that, since remittances are a transitory type of income, households tend to spend them at the margin more on investment goods — human and physical capital investments — than on consumption goods.

As far as the effects on school enrolment and child labour in developing countries are concerned, if remittances have a positive effect on education, they may also contribute to reduce child labour. From a theoretical point of view, the simplest way to incorporate remittances in a household model is to treat them as an additional income source. In this case, if parents' decision to rely on child labour is due to the necessity of meeting the most basic household needs and is not the result of a selfish attitude – namely, if the 'luxury axiom' holds (Basu and Van, 1998)[1] – an increase in income due to remittances is likely to release parents from the necessity of employing their children in family farm and/or business activities and/or of sending them to work in the labour market. Under the same line of reasoning, Fallon and Tzannatos (1998) argue that if schooling and leisure are identified as normal goods, they will jointly increase as income rises, leading to a reduction in child labour. In this sense, remittance inflows can play a role as extra income, with beneficial effects for children.

[1] This axiom states that: 'A family will send the children to the labour market only if the family's income from non-child labour sources drop very low.' (Basu and Van, 1998, p. 416).

I analyse the impact of remittances in the context of Vietnam in the 1990s, using the information gathered in the 1992-1993 and 1997-1998 Vietnam Living Standards Surveys (VLSS). During the crucial decade of the Nineties, Vietnam experienced a sharp increase in economic growth rates and a dramatic drop in overall poverty (Glewwe et al. 2004), which yielded significant welfare gains for Vietnamese children (Edmonds and Turk 2004). At the same time, Vietnam's migration and remittance patterns reshaped and expanded, both internally and internationally (Nguyen 2009). I test the potential correlation between these improvements and the simultaneous presence of remittances by undertaking both a cross-sectional and a longitudinal analysis based on the VLSS panel data, whose quality has been certified by previous research.

Conceptual Framework

On the applied side, there is an increasing number of empirical findings that seem to confirm the beneficial effects produced by remittances. For instance, Edwards and Ureta (2003) examine the effects of remittances from abroad on households' schooling decisions using data from El Salvador and find that remittances have a large significant effect on school retention. However, in another recent study on El Salvador, Acosta (2011) does not find a significant overall impact of remittances on schooling, when controlling for endogeneity; whereas, his results show a strong reduction in child wage labour in remittance recipient households. Yang (2008) finds that increased receipt of overseas remittances due to favourable exchange rate movements in the Philippines increases child schooling and educational expenditure, whilst reducing child labour. Dimova *et al.* (2011), using Living Standards Measurement Survey (LSMS) data on the Kagera region in Tanzania, find empirical support for the hypothesis that both emigration and remittances reduce child labor. In their research on Moldova, Görlich et al. (2007) provide some indication that the boom in university enrolment rates, which has been observed in Moldova in recent years, might partly be explained by the sharp rise in migration and remittance flows. With respect to the distinction between internal and international remittances, the few comparative studies undertaken so far show that international remittances tend to have a stronger impact than internal remittances. Adams (2008) finds that, in Ghana, there are more households receiving internal remittances; though, these are of lower value, on average, than international remittances. Joseph and Plaza (2010), also focusing on Ghana, find that international remittances unambiguously reduce child labour, while internal remittances appear to have no statistically significant effect on the decision to send children to work. Using the two VLSS (2002 and 2004) subsequent to those employed in my analysis, Nguyen (2009) undertakes a fixed effects panel analysis on the impacts of international and internal remittances on Vietnamese households' welfare, showing different results depending on the type of remittances. In particular, whilst a large proportion of international remittances are found to be used for saving and investment purposes, most internal remittances are found to be channeled towards consumption expenditures.

A number of applied studies present less positive evidence on the relationship between migration and child well-being, highlighting the negative side-effects of international migration. In their paper on Albania, Giannelli and Mangiavacchi (2010) show that parents' migration can have a negative effect on school attendance in the long term, mainly because of a lack of parental care for children left behind. McKenzie and Rapoport (2011) reach similar conclusions in their study on school girls and boys in rural Mexico.

So far, much of the literature has either focused on remittances as a whole (without any geographical distinction) or separately analysed international or internal remittance flows. By specifically investigating the difference between internal and international remittances, I aim at furthering the understanding of the negative side-effects caused by a lack of parental care for migrants' children left behind. I therefore embrace the assumption, typical of the most part of the literature, that parents care about their children's education, spending some of their income and time favouring their children's school attendance and trying to avoid or limit child labour. Income and time become complementary factors in a child's well-being, with parents devoting time on looking after their children and considering how to spend money for them. Income from international remittances, instead, is hardly a complement of parental time for children left behind. Since parents who have migrated abroad normally have fewer opportunities to visit their families as compared to parents who have migrated internally, international migrants are likely to have less control on the use of remittances at home. As a consequence, international remittances may turn out to be less effective than internal remittances in improving the well-being of children left behind. Hence, the distinction between internal and international remittances may reveal that the positive effect of remittances on child well-being is counterbalanced by the negative effect of having distant parents who have migrated abroad. In this regard, Vietnam is a particularly suitable country for my analysis, since foreign migration is mostly directed towards the United States, quite a distant country in terms of both geographical location and culture.

As mentioned above, the overall evidence that has emerged from several case studies, mainly from cross sectional data, has pointed to a positive effect of remittances on children's welfare. In fact, anticipating my own results, also the cross-sectional analysis in this paper confirms the previous evidence, since international remittances appear to have a positive and significant impact on children's welfare. However, this result is likely to be biased by specific unobserved factors associated with international migration, which are especially relevant in the case of Vietnam, where migration has political roots. Indeed, my fixed effects panel analysis, enabling me to control for time-invariant unobserved characteristics, highlights the greater importance of internal remittances for children's well-being, thus giving support to my hypothesis.

My analysis intends to contribute to the existing literature in an attempt to assess the effects of remittances on a twofold concept of child well-being. In particular, while previous literature has often analysed schooling and child labour prevalence separately, I focus on the impact of remittances on these two different aspects altogether. In addition, in order to assess the impact of remittances on children belonging to a recipient household, I use the characteristics of the 'average' child in the household, that is, I average at the household level the individual attributes of all children belonging to it. This approach, which is in fact dictated by the structure of the data, can also be theoretically justified by the assumption that parents, recognizing the impossibility to treat their children equally (for example if children's abilities differ) try to maximize the well-being of the average child in the household.

The importance of facilitating labour movement, especially within national borders, appears to be the main policy implication stemming from my findings. When people are free to migrate between provinces, often from rural to urban areas, they can sustain the welfare of their children left behind by sending internal remittances whilst continuing to have a good oversight of their activities. At the same time, the highlighted downsides related to international migration should be tackled with a set of policies aimed at providing care to children with migrant parents living abroad; this would make the impacts of international remittances more effective and beneficial for children's well-being.

The Case of Vietnam

In the last decade of the twentieth century, Vietnam experienced a sharp rise in economic growth rates and a dramatic drop in poverty. The beginning of this economic transformation can be roughly associated with the introduction of the Doi Moi policy in 1986, a plan of economic innovations and liberalisations. Although these achievements varied significantly across households and regions, there were overall improvements in many social indicators, including child labour and school enrolment rates for both boys and girls (Arpino and Aassve 2006). The proportion of people living under the poverty line fell from over 50 per cent in the early 1990s to 37 per cent at the end of the decade and the prevalence of underweight children declined on average by 1.1 per cent every year (Nguyen 2009, Khan et al. 2007, Glewwe et al. 2004).

The two Vietnam Living Standard Surveys undertaken during the 1990s document this pervasive but unequal transformation and have been used in several studies to examine the trends and incidence of different factors, including migration and remittances. Evidence shows that migration patterns played a central role in Vietnam's development, with the flow of remittances increasing in quantity and changing in terms of provenance. After the collapse of the Soviet Union, different areas of the world were chosen by Vietnamese emigrants as new destinations, including Asia, the Middle East and especially the United States. The inflows of international remittances eventually outstripped the Official Development Assistance (ODA) and other capital flows as the main and most reliable source of foreign financial inflow for the country (Pfau 2008).

One of the most positive outcomes of this socio-economic transformation was an impressive reduction in the participation of children in the labour force. There was a decrease in both the number of children working, as well as the amount of hours supplied. Most of the children working by the end of the decade were located in rural areas and worked predominantly within the household unit. With the 1992 revised Constitution emphasising the importance of primary education, defined as both free and compulsory, education levels markedly increased over the 1990s, while gender differences in enrolment rates declined. All these elements seem to indicate a general improvement of children's welfare.

Data and Descriptive Statistics

I use the first two waves of the VLSS, conducted by the General Statistics Office of Vietnam, in the framework of the World Bank's Household Living Standards Measurement Surveys. The data for the first VLSS was collected from October 1992 to October 1993 and covered 4,800 households, while the second round was undertaken from December 1997 to December 1998 with a sample of 6,002 households. The two surveys also form a panel dataset, from which I have extracted 2,054 households, those with at least one child aged 6 to 15. For comparability purposes, I use the same household sample in both the cross section and the panel analyses. I present here some descriptive statistics about remittances, child labour and schooling for the two rounds of the survey.

Table 1. Percentage of households receiving remittances and distribution of total value between internal and international remittances

Source of remittances	Percent. of households		Percent. of total value	
	1993	1998	1993	1998
No remittances	77	73	-	-
Internal remittances	18	21	30	40
International remittances	5	6	70	60

Source: Author's calculations on VLSS 1993 and 1998

Table 1 shows, for both years, an increase in the percentage of households receiving remittances. These figures also point towards the relative importance of international remittance inflows, which reached only a small proportion of families, but represented most of the total monetary value of all remittances.

Table 2. Child activities by gender (%)

Child activities	Boys		Girls	
	1993	**1998**	**1993**	**1998**
School only	58	74	55	73
Work and school	22	16	19	14
Work only	11	6	16	8
Neither	9	4	10	5

Source: Author's calculations on VLSS 1993 and 1998

From Table 2 it is possible to appreciate the sharp rise in the proportion of children only going to school, coupled with a decline in the proportion of children only working. In addition, there is a noticeable reduction in gender differences, especially in total enrolment rates and among children only working.

Table 3. Enrolment rates (%) of children by expenditure quintile

Enrolment rates	Primary		Lower Sec.		Upper Sec.		Post Sec.	
	1993	**1998**	**1993**	**1998**	**1993**	**1998**	**1993**	**1998**
Total	87	91	30	62	7	29	3	9
Poorest quintile	72	82	12	34	1	5	0	0
Richest quintile	96	96	55	91	21	64	9	29

Source: Author's calculations on VLSS 1993 and 1998

The 1998 net enrolment rates of 91 per cent in primary education and 62 per cent in lower secondary school, shown in Table 3, are the expected outcome of the general rise of enrolment rates in all levels of schooling in Vietnam, during the course of the decade. However, Table 3 also shows that children belonging to poor families did not perform as well as rich children, at all levels of schooling. In addition, a large number of children attended primary school whilst they were engaged in labour activities and this was likely to be the case for the poorest children especially. Through the use of suitable control variables and fitting estimation procedures in my empirical model, I am attempting to account for this inequality in children's educational attainments, focusing on households' economic status and geographical rural/urban differences across the country.

Table 4. Distribution of remittance inflows by area of residence

	Share of total remittances (%) 1993	1998
Region		
Hanoi	30.9	15.8
Ho Chi Minh City	42.6	49.1
Centre-North regions	4.4	10
Centre-South regions	22.1	25.1
Urban/Rural		
Rural	20.9	25.2
Urban	79.1	74.8

Source: Author's calculations from VLSS 1993 and 1998

In this regard, Table 4 shows that remittances inflows were directed towards the two main cities in Vietnam, namely Hanoi and Ho Chi Minh City. Accordingly, urban areas received a higher share of remittances than rural areas, in both 1993 and 1998. These figures seem to suggest that remittances did not have a positive impact on urban/rural differentials.

Empirical Strategy

The econometric analysis attempts to verify whether internal and international remittances have contributed to the improvement in Vietnamese children's living conditions in terms of education and child labour incidence. I focus on the rates of school attendance and on the incidence of child labour among children aged 6 to 15. In the first part of my analysis I separately use the 1993 and 1998 VLSS cross-sectional datasets and undertake two sets of Ordinary Least Squares (OLS) regressions for each year. In the second part I carry out a panel data analysis applying a conditional fixed effects linear model to the panel households in 1993 and 1998. Since I conduct my analysis at the household level, my dependent variables are the household average rates of children's school attendance and child labor. This choice, while on the one hand has the disadvantage of leading to a loss of child-specific information, on the other hand has the advantage of allowing me to sample all panel households with children in the selected school-age range. If I had chosen to conduct a child specific analysis, given the time distance between the two surveys, my sample would have been constrained by the limited number of panel-children who remain in the school-age range in both rounds of the survey.

My definitions of *Child Labour* and *Schooling* are taken from the sections dedicated to employment and education respectively in the 1993 and 1998 VLSS questionnaires. I consider a child as engaging in labour if they answered 'yes' to at least one of the three questions related to 'employment during the past 7 days', specifically: 'have you worked for a pay for someone not a member of your household'; 'did you work in a field […] or raise livestock […] or process home-produced crops for your household'; 'have you worked in a business managed by yourself or by your household'. As far as schooling is concerned, I consider a child as only going to school if they answered 'yes' to the question 'are you currently attending school' (including those on summer breaks) and 'no' to all of the above questions on employment.

More precisely, in my econometric model for each household *i*:

$$ChildLabour_i = \sum_{j=1}^{J} y_j \Big/ J$$

where the j index refers to the *jth* child in the household, J is the total number of children aged 6 to 15 in household i, and y_{ij}= 1 if child j does any form of work in agriculture, in the household business, or in the labour market for a wage, notwithstanding the fact that she/he might also be attending school. It follows that:

- *Child Labour*= 1 if y_{ij}= 1 for all j
- 0<*Child Labour*< 1 if y_{ij}= *1* for at least one j
- *Child Labour*=0 if y_{ij}= *0* for all j

According to my definition, therefore, *Child Labour* is the probability of child labour within the household, which may also be intended as a measure of child labour intensity in the *ith* household.

The other dependent variable, *Schooling*, is calculated in an analogous way. and takes the following values:

- *Schooling* = 1 if y_{ij}= 1 for all j , where 1 applies to a child who goes to school and does not perform any type of work
- 0<*Schooling*< 1 if y_{ij}=1 for at least one j (i.e. even if only one child is attending school without working)
- *Schooling* =0 if y_{ij}= *0* for all j, when no child is only going to school without being engaged in some form of labor.

According to my definition, therefore, *Schooling* is the probability of school attendance within the household, which may also be intended as a measure of schooling intensity in the *ith* family.

Obviously, these two measures of children's well-being are not perfectly complementary. My notion of child labour encompasses any child who is spending at least some of their time working (namely, they might also attend school), with potentially detrimental effects on their personal welfare. A reduction in child labour due to remittances may thus be seen as a first step to increase child well-being. Schooling, as defined in my empirical model, is a more restrictive concept, entailing that the child is only attending school without doing any work, apart from unobservable domestic chores. Hence, for coefficients of the same magnitude, the well-being effect of remittances would be greater for schooling as compared to child labour.

The specification of the cross-section analyses is therefore the following:

$$ChildLabour_i = \alpha + \beta X_i + \gamma(\sum_j z_{ij} / J) + \varepsilon_i$$

$$Schooling_i = \delta + \eta X_i + \phi(\sum_j z_{ij} / J) + \eta_i$$

Where X_i are household's characteristics and z_{ij} are household *i* children's characteristics, ε and η are random error terms.

In the panel analysis, I take advantage of the longitudinal nature of the data by estimating a fixed effects model.

In this case the specification for Child Labour becomes:

$$ChildLabour_{it} = \alpha + \theta_i + \beta X_{it} + \gamma(\sum_j z_{ijt} / J) + \chi_{it}$$

Analogously, the specification for Schooling becomes

$$Schooling_{it} = \delta + \theta_i + \eta X_{it} + \phi(\sum_j z_{ijt} / J) + \chi_{it}$$

where *t* denotes time, θ_i the unobservable household fixed effect and χ_{it} the remainder disturbance.

Whilst children's characteristics are averaged at the household level to create the average child's profile, some important features of the household are captured by variables that refer to the household head's characteristics as well as the household's urban or rural location and expenditure quintile. In the preliminary phase of my analysis, I have employed a number of other household variables to test out their significance, including the average level of education of all household members and of adults members only, the share of female members and the ratio of children to adults in the family. Finally, I have chosen to present the results for the subset of household variables that turned out to be the most significant.

The vector X_i of household variables contains the two explanatory variables of interest, namely, the logarithm of the value of internal remittances and the logarithm of the value of international remittances, both of them measured at the household level *i*. They are the logarithm of the amount of money (in Vietnamese Dongs) received by each household by members who have left the household to migrate. Remittances are defined in both the 1993 and 1998 VLSS questionnaires as 'the amount of money and monetary value of in-kind benefits received by a household from people not living in the household, including family and friends, which do not require repayment'. These remittance variables incorporate two crucial aspects for the analysis, namely the geographical origin of the remittances, which roughly accounts for the proximity of the remitters' place of immigration to their household of origin, and the amount of money sent. As I will discuss more in depth during the interpretation of my panel results, the amount of money and the distance of the migrants from their place of origin are two key factors that interact with each other in determining the impact of remittances on migrants' children left behind.

The summary statistics of my two dependent variables and of all explanatory variables are presented in Table 5.

Table 5. Summary statistics: child labour, schooling, remittances, individual and household variables[2]

Variables	Mean		Standard Deviation	
	1993	1998	1993	1998
Child Labour	0.25	0.25	0.34	0.37
Schooling	0.64	0.58	0.39	0.48
Log of the value of internal remittances	- 8.17	- 7.99	2.69	3.07
Log of the value of international remittances	- 8.87	- 8.77	1.77	2.10
Gender of the child (1 is male)	0.51	0.52	0.38	0.38
Age of the child	9.57	11.67	2.01	1.95
Age of the child squared	98.95	140.04	40.47	44.82
Recipient is parent or grandparent	0.03	0.05	0.16	0.21
Gender of the household head (1 is male)	0.81	0.80	0.39	0.40
Level of education of the household head:				
Low level of education	0.37	0.26	0.48	0.44
Medium level of education	0.10	0.48	0.30	0.50
High level of education	0.06	0.20	0.24	0.40
Age group of the household head:				
Age 30 to 50 years	0.37	0.73	0.48	0.44
Age over 50 years	0.08	0.26	0.27	0.44
Size of the household	5.97	5.70	1.96	1.81
Number of children in the household	2.27	2.14	1.07	1.05
Urban household (Rural as reference)	0.17	0.19	0.37	0.39
Expenditure quintile 2	0.23	0.21	0.42	0.41
Expenditure quintile 3	0.20	0.21	0.40	0.41
Expenditure quintile 4	0.18	0.20	0.38	0.40
Expenditure quintile 5 (TOP)	0.16	0.17	0.37	0.38
Number of Observations	2054	2054	2054	2054

Source: Author's calculations on VLSS 1993 and 1998

[2] Through the transformation formula employed to generate the logarithms, all amounts equaling zero were replaced by a (very small) negative number. The means shown in Table 5 were obtained including both recipients and non-recipient households and this explains their negative values.

The first two figures in Table 5 show the average household incidence of child labour and school attendance. In 1993, in each household on average 64 per cent of children were only going to school whilst 25 per cent of them were either studying and working or only working. In 1998, the proportion of children engaged in some form of labour is practically the same, but the average proportion of children only going to school declines to 58 per cent. This could be due to the fact that, in my 1998 sample, there were fewer children of primary school age (who are generally more likely to only go to school) compared to the 1993 sample. In fact, the age of the average child increases from 9.57 years in 1993 to 11.67 years in 1998, thus overcoming the threshold at which Vietnamese children finish primary school.[3] This detectable effect of the increase in children's average age highlights the substantial length of time, five years, that passed between these two rounds of the VLSS.

The rest of the summary statistics associated with children show the figures emerging from my choice of averaging the child's profile. In particular, since I am employing the household average values of children's characteristics, the binary variables concerning children at the individual level are converted into continuous variables once computed as averages across all household's child members. As a result, the only dummy variables that maintain a binary form are the ones associated with the characteristics of the household head[4] and the ones defining the urban/rural location of the household and its expenditure quintile category. With respect to the latter, I am employing the VLSS expenditure data, sorted into five quintile ranks, through the use of four dummy variables (first poorest quintile as reference).[5]

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[3] In Vietnam primary school starts at six years of age and lasts five years (Art. 22, Education Law)

[4] Beside the dummy variable associated with the gender of the household head, I am using 'level of education' and 'age group' of the household head, which are expressed by three dummies and two dummies respectively. The reference base for education is 'no qualification obtained' and the three levels represent primary school (low education), secondary school (medium) and college or university (high). For the age group, the reference base is 'under 30 years of age'. Using these age cohorts instead of a continuous age variable allows me to distinguish between relatively younger and older households heads, which are likely to have specific attitudes towards children.

[5] Although it would have been more valuable for my analysis to use a measure of total household income, given its influence on child labour and schooling (see e.g. de Carvalho Filho 2012), there

Also at variance with other studies, the data allows me to control for whether or not the people who received the remittances were the migrants' parents or grandparents, thus relatively older members of the household. The presence of this variable enriches the pool of information in my model and the results associated with it, though not statistically significant, give rise to an interesting interpretation, as I shall see in the next section.

In a preliminary analysis, I have also tested out some alternative remittance variables, exploiting the wealth of data in the VLSS surveys, including other information on the remitters and the receivers of remittances. However, none of them appeared to add to the value of my model. For instance, in contrast to Kugler and Bui (2011), I find no significant impacts on child labour and schooling associated with women receiving larger shares of remittances. The two authors admit that the fraction of remittances going to women is likely to be related to unobservable factors and apply an instrumental variables strategy to their cross-section data. However, the availability of panel data, in my case, allows a more robust control at least of the fixed unobserved factors.

Cross-Sectional Analysis

In the cross-sectional estimations, OLS regressions are applied to model my two child well-being outcome variables, *ChildLabour* for child labour and *Schooling* for school attendance. In order to guarantee comparability, I am using the same sample of observations for both the cross-section and the panel estimation. Taking advantage of the information on the province, district and village of residence, I also control for clustered standard errors at the village level.

Table 6, which shows the results of the OLS regressions separately for 1993 and 1998, suggests that remittances played some part in reducing child labour, in both 1993 and 1998. The coefficients of the logarithms have a negative sign, as expected; children are less likely to be engaged in labour activities if their household is a recipient of remittances.

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is no such information in the 1993 and 1998 VLSS datasets. A specific module concerning household income has been introduced in the surveys starting from the 2002 wave onwards.

Table 6. Household child labour in 1993 and 1998, OLS

	1993	1998
	Coeff. (se)	Coeff. (se)
Log of the value of internal remittances	- 0.004 (0.0029)	- 0.002 (0.0029)
Log of the value of international remittances	- 0.002 (0.0030)	- 0.005** (0.0025)
Gender of the child	- 0.032* (0.0177)	- 0.022 (0.0233)
Age of the child	0.021 (0.0297)	0.010 (0.0393)
Age of the child squared	0.002 (0.0015)	0.002 (0.0018)
Recipient is parent or grandparent	0.024 (0.0422)	- 0.019 (0.0445)
Gender of the household head	0.011 (0.0198)	0.014 (0.0241)
Level of education of the household head:		
Low level of education	- 0.002 (0.0173)	- 0.025 (0.0399)
Medium level of education	0.068*** (0.0255)	- 0.003 (0.0430)
High level of education	- 0.003 (0.0259)	0.008 (0.0460)
Age group of the household head:		
Age 30 to 50 years	- 0.009 (0.0160)	- 0.064 (0.0718)
Age over 50 years	0.006 (0.0302)	- 0.071 (0.0735)
Size of the household	- 0.015*** (0.0047)	- 0.013** (0.0055)
Number of children in the household	0.025*** (0.0086)	0.013 (0.0090)
Urban household (Rural as reference)	- 0.111*** (0.0246)	- 0.151*** (0.0266)
Expenditure quintile 2	- 0.009 (0.0240)	- 0.086*** (0.0278)
Expenditure quintile 3	- 0.058** (0.0234)	- 0.132*** (0.0299)
Expenditure quintile 4	- 0.128*** (0.0229)	- 0.198*** (0.0315)
Expenditure quintile 5 (TOP)	- 0.165*** (0.0254)	- 0.269*** (0.0323)
Number of Observations	2054	2054
R-squared	0.228	0.167

Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

However, the level of statistical significance is very low for all coefficients apart from the international remittance one in 1998. This cross-sectional analysis seems to indicate two key elements: first, in 1993 the negative effect of remittances on child labour was not strong enough to appear statistically significant; secondly, in 1998 international remittances stand out for their notable and statistically significant impact. If I needed to put forward a preliminary interpretation of the latter result, I would be led to argue that receiving international remittances, which are generally associated with larger sums of money when compared to internal remittances, became increasingly important from 1993 to 1998 for reducing child labour. Conversely, internal remittances do not seem to play a substantial role, being non-significant in both years.

From the examination of the other explanatory variables I notice that, in both years, children living in rural areas were more likely to work, albeit this difference was slightly stronger in 1998. In addition, while moving from lower to higher expenditure quintiles reduced the probability of working in the two years, in 1993 the passage from the bottom quintile to the second does not have a significant impact. I know that people in the lowest quintile were poorer in 1993 than in 1998 and this is confirmed by my results, which seem to highlight a general improvement of the economic situation, even though the rural/urban gap persisted. I also notice that while an increasing overall size of the household reduced the child's probability to work, with older members available to work, a higher number of children in the household caused a rise in child labour, especially in 1993.[6] The significant impact of a medium level of education of the household head, which seems to increase the probability of working for the average child in 1993, is difficult to interpret and this result is in contrast with my panel results. Finally, the effect of the recipient's relationship with the sender (parent or grandparent) appears to be unclear (albeit insignificant), being positive in 1993 and negative in 1998. This point will be discussed in more depth in my panel analysis. Table 7 reinforces the argument that in 1993 receiving remittances was less influential on child activities than in 1998. At the end of the decade, after five years of increasing internal and international migration, the importance of the sum of money received appears to be heightened with respect to child schooling, possibly reflecting both the growing importance of remittance inflows as a substantial source of income and the easing of some socioeconomic constraints thanks to economic development.

[6] Very similar results were obtained in a preliminary analysis by using a variable containing the children to adults ratio in the household.

Table 7. Household school attendance in 1993 and 1998, OLS

	1993	1998
	Coeff. (se)	Coeff. (se)
Log of the value of internal remittances	0.004 (0.0032)	0.006* (0.0036)
Log of the value of international remittances	0.006 (0.0037)	0.011*** (0.0038)
Gender of the child	0.035* (0.0208)	0.0282 (0.0267)
Age of the child	0.163*** (0.0387)	- 0.010 (0.0509)
Age of the child squared	- 0.011*** (0.0019)	- 0.002 (0.0022)
Recipient is parent or grandparent	- 0.057 (0.0508)	0.005 (0.0576)
Gender of the household head	- 0.035* (0.0211)	- 0.017 (0.0287)
Level of education of the household head:		
Low level of education	0.023 (0.0193)	0.043 (0.0523)
Medium level of education	0.024 (0.0263)	0.077 (0.0540)
High level of education	0.081*** (0.0294)	0.082 (0.0578)
Age group of the household head:		
Age 30 to 50 years	0.020 (0.0181)	0.029 (0.0987)
Age over 50 years	0.023 (0.0334)	0.034 (0.0991)
Size of the household	0.006 (0.0052)	0.014* (0.0074)
Number of children in the household	- 0.028*** (0.0098)	- 0.102*** (0.0139)
Urban household (Rural as reference)	0.113*** (0.0260)	0.153*** (0.0351)
Expenditure quintile 2	0.117*** (0.0281)	0.113*** (0.0347)
Expenditure quintile 3	0.173*** (0.0278)	0.197*** (0.0379)
Expenditure quintile 4	0.268*** (0.0260)	0.266*** (0.0409)
Expenditure quintile 5 (TOP)	0.303*** (0.0296)	0.384*** (0.0424)
Number of Observations	2054	2054
R-squared	0.234	0.202

Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

As a result, for 1998 the coefficients of both remittance logarithms are statistically significant. In addition, the descriptive evidence seems to be confirmed in that international remittances appear to have a stronger and more significant impact than internal remittances.

From the analysis of the other control variables it emerges that boys were more likely than girls to go to school in 1993, though the gender gap seems to have narrowed by 1998. Similar gender dynamics can also be appreciated for child labour. Also the urban/rural difference reflects the patterns noticed in the child labour estimation, with children in rural areas still clearly worse off in both years. One interesting difference between the two years is the influence of the household head's education. While in 1993 household heads with a relatively high level of education had a positive and significant impact on child schooling, in 1998 the effect loses it statistical significance. It seems possible to argue that in 1993, given the more difficult economic situation, the level of education of the household head played a crucial role in promoting child schooling; in 1998, a larger percentage of children went to school thanks to an improved overall economic condition, so that other determinants became less relevant. The sign of the coefficient of my additional remittance variable concerning the recipient of remittances remains insignificant and presents also in this case diverging signs for the two years. Finally, as expected, belonging to a household in higher expenditure quintiles increased the children's probability to go to school in the two years observed.

Panel Analysis

In the second stage of my analysis I undertake a panel data estimation, using 2,054 households that appeared in the 1993 survey and were re-interviewed in 1998. Out of the total 4,300 households that make up the VLSS panel dataset, I chose those with at least one child aged 6 to 15 years in both years. This means that, following Edmonds (Edmonds 2005),[7] I do not take into account only the children who appeared in both rounds of the survey. In fact, in the five year span between the two surveys, the most part of children present in 1993 would have become older than fifteen, thus dropping out of my sample.

[7] Edmonds restricts his sample to the panel households suitable to examine the relationship between child labour and household economic status, using a non-parametric decomposition to predict the results through time and then compare them to the real 1998 observed outcomes.

Given the nature of my dependent variables, a linear probability model with fixed effects seemed to be the most appropriate estimation technique to be applied to my analysis. As explained before, I have calculated the average values of all the relevant characteristics of children belonging to the same household, thus generating an average observation for each household in each year that allows me to compare the average 1993 child with the average 1998 child in the same family. Since it is the household unit as a whole that receives the remittances and not each individual child, the use of this approach seemed to be a reasonable choice. Although I cannot observe specific differences or commonalities across children belonging to the same families, I believe that using mean values for children in the household may provide me with a better representation of the household's average response to receiving remittances.

The most striking result emerging from the estimated fixed-effects regression model presented in Table 8 is that internal remittances appear to have a stronger and more significant positive effect for child well-being than international remittances. This result is in contrast with my cross-section results and with much of previous research on the subject.

A possible interpretation of this result might be that international migrants find it more difficult to maintain close relations with their family and their visits to their countries of origin are infrequent. Hence, the negative side-effects determined by lack of parental care for the children left behind appear to outpace the benefits generated by receiving remittances. International migrants and their families of origin are usually better-off and more educated than the average; thus the positive and significant impact of international remittances observed in the cross-section is likely to be the result of unobservable factors. My fixed-effects model enables me to control for these time invariant unobserved characteristics and obtain more reliable results.

Table 8. Household Child Labour and Schooling, Fixed Effects Model

	Child Labour	Schooling
	Coeff. (se)	Coeff. (se)
Log of the value of internal remittances	- 0.007** (0.0032)	0.008** (0.0040)
Log of the value of international remittances	- 0.002 (0.0032)	0.003 (0.0051)
Year (base year 1993)	- 0.046* (0.0268)	0.011 (0.0295)
Gender of the child	- 0.033 (0.0279)	0.097*** (0.0346)
Age of the child	0.017 (0.0245)	0.092*** (0.0293)
Age of the child squared	0.002 (0.0011)	- 0.007*** (0.0014)
Recipient is parent or grandparent	0.036 (0.0466)	- 0.062 (0.0612)
Gender of the household head	- 0.048 (0.0345)	0.075* (0.0455)
Level of education of the household head:		
Low level of education	- 0.036* (0.0211)	- 0.004 (0.0234)
Medium level of education	- 0.066** (0.0266)	0.003 (0.0311)
High level of education	- 0.111*** (0.0389)	0.031 (0.0471)
Age group of the household head:		
Age 30 to 50 years	- 0.008 (0.0216)	- 0.016 (0.0259)
Age over 50 years	- 0.033 (0.0364)	0.007 (0.0427)
Size of the household	0.003 (0.0069)	0.010 (0.0089)
Number of children in the household	0.029*** (0.0078)	- 0.066*** (0.0104)
Urban household (Rural as reference)	- 0.055 (0.0382)	0.109** (0.0526)
Expenditure quintile 2	- 0.028 (0.0265)	0.041 (0.0308)
Expenditure quintile 3	- 0.054* (0.0282)	0.090** (0.0371)
Expenditure quintile 4	- 0.041 (0.0332)	0.084** (0.0414)
Expenditure quintile 5 (TOP)	- 0.003 (0.0378)	0.042 (0.0521)
Number of Observations	4108	4108
Number of Groups	2054	2054
R-squared overall	0.112	0.123

Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

In other words, the fixed-effects method allows me to control for the fact that receiving remittances may be endogenous: recipient households may have characteristics correlated to receiving remittances that make them more likely to send/not to send their children to school/to work. This may be more likely in households where some members have migrated abroad, and where overseas migration was mainly driven by political factors, as in the case of Vietnam.

The interpretation of the coefficients of the control variables coefficients follow some of the considerations put forward in the previous section. Children belonging to urban and wealthier households have a greater probability of attending school. However, when it comes to child labour, the urban/rural coefficient, though bearing the expected sign, is not statistically significant. Part of its influence might have been captured by my internal remittances variable, given the significance of rural to urban internal migration. Besides, the specific importance of living in an urban area for schooling can also be explained by the shortage of schools in rural areas. Unlike the overall number of household members, an increasingly large number of children in the household appears to produce a significant detrimental effect on both my measures of child well-being. As mentioned in the cross-section analysis, also when using a ratio of children to adults variable, I obtain similar results, which suggests that children are better off if there are more adults who can take care of them and earn an income for the family. At the same time, the more educated the household head, the lower probability of the average child of going to work, but increasing education levels of the household head have no significant impact on children's probability to attend school. Interestingly, if the household is headed by a man, the average child is more likely to be attending school. Rather than being related to paternal affection, this result reflects the fact that female headed households are normally poorer than male headed ones and have fewer resources to sustain the costs of education. Gender does not appear to have a significant impact on child labour, with girls and boys likely to be engaged in gender specific work tasks. However, despite the reduction in the gender gap between 1993 and 1998, girls are still found to be significantly less likely to attend school. Since this gender variable is averaged at the household level, it could also be interpreted as representing the share of male-to-female children in the household. Hence, the larger the number of boys, the greater the probability that families will invest in their offspring's education.

Although all the coefficients associated with the household expenditure quintiles bear the expected signs, only the coefficient of the third quintile shows a significant negative impact on child labour, whilst the third and fourth quintiles have a significant positive impact on schooling. In both cases, the top quintile variables present unexpectedly small and insignificant coefficients. This inconsistency may be partially explained by the shortcomings of expenditure as a comprehensive indicator of household economic status. In this respect, information on household total income would have been a valuable addition. Nonetheless, the fact that a better economic condition appears to have a more detectable impact on schooling than on child labour seems to confirm the discussed difference between my two dependent variables. Indeed, the decision to send children only to school and not to work requires a particularly strong financial effort and commitment on the part of the household, with schooling emerging as a better indicator of well-being than child labour in my model.

Finally, although the remittance variable concerning the receiver of remittances is not significant, it does raise an interesting point. The sign of the coefficient seems to suggest that remittances sent to relatively older members of the household are not used for the average child's benefit; a fact that raises the question whether a considerable part of the money sent by the migrants to their parents or grandparents is devoted to expenditure on adults' needs or elderly care.

Conclusions

In the large body of literature dealing with the increasing importance of remittance flows for developing countries, the number of studies that investigate the specific impact of internal and international remittances on child well-being remains limited. I have attempted to explore this crucial relationship by separately taking into account the effects of remittances on child labour and on school attendance. The analysis of the difference between the effects of internal and international remittances, separating their respective values, has highlighted the greater importance of internal flows of remittances for child well-being.

The most part of the existing literature on this subject is based on cross-section data. The evidence emerging from the majority of these analyses seems to indicate that remittances matter for child well-being, but international remittances matter more than internal remittances. Therefore my main objective was to ascertain if this result is confirmed when unobservable fixed effects are taken into account.

Using panel data from the 1993 and 1998 VLSS, I have compared the results derived from my cross-section analysis with those of my panel analysis. I have employed an estimation procedure that focuses on the average characteristics of all children belonging to each household, thus generating an average representative child at the household level. My findings show, in line with the literature, that children belonging to recipient households are less likely to be sent to work and more likely to attend school than children who live in households where this source of income is absent.

However, although at the descriptive and cross-sectional levels receiving international remittances appears to have a stronger effect than receiving internal remittances, this difference is reversed in my panel analysis. After controlling for time-invariant unobservable characteristics with a fixed-effects model, internal remittances are found to be the only significant inflow of migrants' money to reduce child labour and increase school attendance. In line with the evidence found in studies on the negative effects of parental absence on the well-being of children, I attribute the result of the insignificant effect of international remittances to the lack of parental care for children left behind in migrants' households of origin. Internal migrants, unlike international migrants, are likely to preserve a relatively close relationship with their families of origin, thus maintaining control over their children's welfare and the way in which remittances are spent.

On the econometric side, the significant impacts of international remittances observed in the cross-section analyses were probably due to unobserved household factors. These factors were removed in the panel analysis which, I believe, achieves a better understanding of the complex relationship between receiving remittances and children's well-being.

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Appendix

Descriptive statistics of the panel : child labour, schooling, remittances, individual and household variables

Variables	Mean	Standard Deviation
Child Labour	0.25	- 0.36
Schooling	0.61	- 0.44
Log of the value of internal remittances	- 8.08	- 2.89
Log of the value of international remittances	- 8.82	- 1.94
Gender of the child	0.52	- 0.38
Age of the child	10.62	- 2.24
Age of the child squared	119.50	- 47.38
Recipient is parent or grandparent	0.04	- 0.19
Gender of the household head	0.81	- 0.40
Level of education of the household head:		
Low level of education	0.31	- 0.46
Medium level of education	0.29	- 0.45
High level of education	0.13	- 0.33
Age group of the household head:		
Age 30 to 50 years	0.55	- 0.50
Age over 50 years	0.17	- 0.37
Size of the household	5.83	- 1.89
Number of children in the household	2.20	- 1.06
Urban household (Rural as reference)	0.18	- 0.38
Expenditure quintile 2	0.22	- 0.42
Expenditure quintile 3	0.21	- 0.41
Expenditure quintile 4	0.19	- 0.39
Expenditure quintile 5 (TOP)	0.17	- 0.37
Number of Observations	4108	4108

Source: Author's calculations on panel sample taken from VLSS 1993 and 1998

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Chapter 3

The Gender Impact of Multiple Crises, in Kenya

This paper investigates the gender-specific impact of economic shocks and crises, using Kenya as a case study. The choice of Kenya has been motivated, on the one hand, by the occurrence of multiple crises that severely affected the country from 2007 and 2009; on the other hand, by the structural gender inequality that characterises Kenya in most spheres of society. In particular, this research focuses on Kenyan women's labour activities and conditions during the crisis, highlighting the unfair gender division of labour, within and outside the household, that negatively affected their time burdens and general welfare. The analysis is combining quantitative and qualitative data in an attempt to enrich the research results by overcoming some shortcomings of each of the two approaches and thus demonstrating the complementary importance of both.

Key words: *Gender, Labour, Crisis, Vulnerability, Multi-Method Approach, Kenya*

Introduction

This research aims at assessing the gender-specific impact of economic shocks and crises in the context of a developing country, using Kenya as a case study. The gender focus of the research is intended to verify the hypothesis that women are disproportionately affected by an economic downturn, regardless of its nature. The hypothesis underlying my research is that, in time of crisis, women tend to bear the largest burden of socioeconomic adjustments stemming from household coping strategies, which negatively affect their time burdens and general welfare. Specifically, this paper focuses on Kenyan women's working conditions during a period of severe crisis, highlighting the existence of an unfair gender division of labour in both the productive and reproductive economy.

Over the last decade, women's conditions and gender equality have increasingly been recognised as crucial to social and economic development. Gender inequality is a multi-dimensional concept, characterising the different domains where women and men interact, and comprises unequal roles, rights and obligations assigned to each sex (Elson, 1993). In times of economic turmoil, this context of structural inequality aggravates the impact of the crisis on women through various channels. Evidence from previous economic crises suggests that women, given the uncertain status of their occupation, are laid off very easily in non-performing sectors, or are required to work longer hours and their working conditions deteriorate. At the same time, women are often forced to take undesirable jobs, mainly in the agricultural and urban informal sectors, including direct or disguised sex work. On top of this impact on employment, which is at the centre of my analysis, economic shocks affect also women's patterns of time use, since working women continue to bear the brunt of domestic tasks, including caring for the children, the elderly and the sick.

Kenya is a very suitable case study for my research because of three main reasons: the gravity of the impact of a multiple shock that recently hit the country; the significance of gender issues in the Kenyan society; the quality of both quantitative and qualitative data at my disposal. From 2007 to 2009, Kenya faced a 'quadruple crisis', comprising a political crisis, an oil and food price crisis, a long-lasting drought and the eruption of the global financial crisis.[1] High food prices had a negative impact on the poor in urban as well as rural areas, since 60 percent of all farming households are net buyers of staple food. Tourism revenues declined by 35 percent due to political crisis and monthly remittances in January 2009 declined by 27 percent compared with January 2008. The most affected sectors by the initial wave of the financial crisis, tourism and commercially-oriented agriculture, such as horticulture, tea and coffee, all have high shares of female employment (Mwega, 2010). Kenyan women faced this dramatic situation from a position of vulnerability, given the unfair gender differentials in Kenya's society.

As far as quantitative data are concerned, the latest round of the Kenya Demographic Health Survey provides with interesting gender-specific information collected in a crucial period, between the end of 2008 and the beginning of 2009. The previous round, run in 2003, offers a useful comparison to investigate female employment trends. Specifically, my empirical examination based on these DHS dataset is making use of a binomial logit model of labour supply and a multinomial logit model of occupational choice. The primary aim of the analysis is to look at the impact of economic shocks on women's ability to avoid the most undesirable jobs. In particular, I test the hypothesis that even the relatively more empowered women were forced to pick uncertain and poorly paid jobs due to the crisis that affected Kenya, with negative consequences for their welfare.

In this paper I will integrate and complete my quantitative results with the analysis of qualitative data. Combining these two different methodologies will allow me to tackle the short-comings characteristic of each approach and will help me understand better Kenyan women's personal perceptions of the effects of the crisis on their lives. Qualitative information will be derived from the first round of a real-time participatory study undertaken in 2009 in two Kenyan communities and coordinate by the Institute of Development Studies (IDS). The project produced rapid, real-time findings concerning the social and economic

[1] As distinctive signs of the crisis, the economic growth rate declined from 7.1 percent in 2007 to 1.7 percent in 2008 and the inflation rate reached 19.5 percent (Mwega, 2009).

dimensions of the multiple shock that hit Kenya. Specifically, qualitative data was collected through semi-structured interviews and group discussions.[2]

The paper is organised as follows: the second section presents the conceptual framework, with a literature review of feminist economics, gender analysis and well-being; the third section introduces some relevant features of the Republic of Kenya, as the case study for my research; the fourth section illustrates the methodology that will be used for my econometric model; the fifth section introduces the dataset used in the research and some descriptive statistics; the sixth section presents the results of the quantitative analysis undertaken to test the hypothesis under examination; the seventh section presents the findings emerging from the qualitative analysis; the eight section discusses the multi-method approach used for my research; the ninth section concludes.

Conceptual Framework

Feminist Economics

In my study on the negative effects of economic shocks and crises, the centrality of gender issues appears to be paramount, given the specific vulnerability of women's conditions in all the affected dimensions at the centre of my analysis, including the household, the community and the labour market. As clearly pointed out by Baden (1997), the literature that fails to recognise gender as a central aspect of vulnerability, generally treats the poor as a homogenous category, thus ignoring the particular determinants of poverty and disadvantage for each distinct sub-group, including women. Gender differentiated capacities and vulnerabilities, which arise from positions in society and relationships between sexes, determine how men and women are differently affected by economic transformations (Fontana et al., 1998). In order to fully appreciate the extent and direction of crisis-induced changes in vulnerability, a feminist economic perspective is needed to examine women's economic and social roles

[2] I have had direct access to the interviews transcriptions, the local researcher's notes and draft as well as final reports. My research is the first gender-specific analysis based on this data.

as well as the nature of gender relations, which take place within a socioeconomic structure of unfair gender based constraints (Folbre, 1994; Mumtaz, 2003). While men tend to have defined productive roles, for which they get paid in cash or kind, most women have both reproductive roles, such as child bearing or domestic tasks, and productive roles, either within the household setting or in the market, though on more precarious terms than men (Menéndez et al., 2007). In times of crisis, women end up bearing most of the adjustment burden, in their roles as producers, mothers, home managers and community organisers (Chinery-Hesse, 1989). Most of women's work is often labelled as unpaid and its magnitude tends to be underestimated, even though it includes numerous crucial activities that are income-generating and play a central part in the economy of the household and the community (Moser, 1993; Beneria, 2003).

Various forms of rigidities characterise this gender specific division of labour, mainly originating in the process of household allocation of labour. The literature stresses the existence of a pervasive 'stickiness' in the substitutability between male and female labour for domestic and caring activities (Kabeer, 1997), with women's time coming to be the main adjusting factor at the household's disposal. As a result, when women increase their participation in the labour market, in the context of household's coping strategies, there are not observable reductions in their domestic work or child care; since unemployed men devote very little time to those activities, women are obliged to reduce their leisure time to accommodate the new situation and many poor women end up with no leisure time at all (Folbre, 1984; Beneria, 2003; Andia Falgade, 2006). In particular, while some men are less privileged than some women, since men and women do not belong to homogeneous groups, the poorest of women in developing countries are most likely to face a multiplicity of demands on their time, often combining domestic tasks, waged labour and income-replacing work, such as collecting water and the care of livestock and poultry (Sen and Sen, 1985). Therefore, the allocation of human labour cannot be compared to the allocation of other resources, due to the critical influence of interests, preferences and obligations that stem from structural factors and give rise to unbalanced bargaining power between sexes (Kabeer, 1997).

However, the mainstream neoclassical approach tends to overlook this complex process of control and allocation of human resources and puts forward an oversimplified conceptualisation of household organisation and sexual division of labour, which informed many micro and macro-economic models (Elson, 1995; Nelson, 2005). Following the assumptions of positivist economic analysis, the behaviour of all individuals is explained as the product of rational choices, which are taken only with the purpose of maximizing personal utility in the face of economic scarcity. The New Household Economics perspective applies the same concept to the household as a single entity, where individual members rationally maximise a joint welfare function (Becker, 1991). As a consequence, it is simply the principle of comparative advantage, subject to the household production function, that determines an optimal allocation of family labour. According to this perspective, it is not relevant who earns more money or owns more assets, since resources are merged and redistributed as part of the household joint welfare maximisation. Evidence strongly contradicts this simplistic postulate, which ignores structural constraints, institutional processes and cultural norms (Kabeer, 1997; Folbre, 2004), and indicates, conversely, the validity of Sen's definition of the household as a site of cooperative conflict (Sen, 1990). Gender inequities do not derive from individual differences between women and men, rather they are the product of structural inequalities that generate unequal power within the household. Even when women are the ones in charge of household organisation and production activities, often as a result of sheer necessity, they find themselves in a situation of responsibility without any actual power (Elson, 1995). In this regard, also changes in female labour supply and prevalence of certain occupational choices among women need to be examined by bearing in mind that supposed achievements for women, within the household and in the labour market, do not necessarily knock down gender barriers or transform unfair relations (Beneria, 2003). This is especially true in times of crisis, when barriers may be momentarily put aside, under the pressure of necessity, and put up again, as soon as possible. My research on the impacts of multiple crises in Kenya is centred on a gender analysis precisely because of this specific vulnerability that characterises women, who end up being 'shock absorbers' of a system that is structurally distorted against them (Elson, 1995).

Gender Analysis

The primary objective of gender analysis is indeed to investigate both the determinants and the consequences of inequalities based on gender, which shape social relations at the household, community and broader society level (Riley, 2003). The analytical methodology of this type of analysis tends to vary depending on the assumptions about how gender is constituted as well as the research and policy goals of the institution undertaking the analysis. Several alternative and often complementary approaches have been put forward, over the years, by different schools of thought. No single framework provides an exhaustive description of the realty of gender and their representation is often partial (Cornwall et al., 2007). I am discussing here three of the most prominent ones, which appear to be particularly relevant for the purpose of my research, namely the 'Gender Roles', the 'Social Relations' and the 'Women's Empowerment' frameworks (Miller and Razavi, 1995). The focus of the gender roles framework, also known as the Harvard analytical framework, is placed on the household as the unit of analysis and is concerned with gender differentiated access to and control over resources, which originate from women's and men's specific productive and reproductive roles (Overholt et al., 1985). The main subjects of this perspective are the single individuals within the household and gender inequity is described as an inefficient allocation of actual and potential resources among household members, without any particular attention paid to different levels of society. The proposed path towards gender equality is to provide women with the necessary tools, such as credit and education, with which they would be able to efficiently participate in the production and distribution of resources with the household.[3]

The emphasis on the gender division of labour within the household, which has its origin in the 'sex role theory' (Becker, 1981; Connell, 1985), has the merit of highlighting otherwise invisible activities carried out by the woman in the productive and reproductive domains, thus shedding a light on time-use issues as well. However, by restricting the analysis to labour stratification inside the

[3] Given its focus on productivity and women's economic contribution, this gender analysis approach has become popular with aid agencies and international organisations concerned with rising growth rates and implementing development projects (Miller and Razavi, 1998).

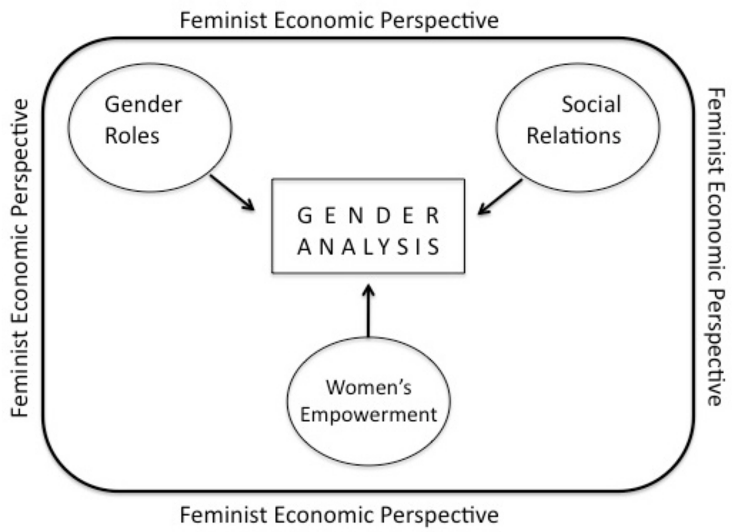
household, this perspective does not delineate other important elements related to the broader social structure in which women and men develop their relationships, thus failing to take into account power relations or decision-making processes at the household and societal levels. In reality, an efficient allocation of production activities between men and women is usually compromised by unfair social norms and ideologies, which can cause tension and conflict within the household and the broader community (Kabeer, 1992).

The social relations framework attempts to overcome this analytical flaw by shifting the emphasis on the way through which gender inequalities are perpetuated by gendered power relations, concentrating on the community and institutional levels (Elson, 1993). According to this approach, the unfair mechanisms that generate inequities are very much related to the institutional context in which they take place and are conditional to women's bargaining power as well as class, racial and ethnic characteristics. As a result, in this case the core question of the gender analysis is not about the constraints on the individual ability of single women to be productive and lift themselves out of poverty, but it involves dealing with the social structures and processes that prevent women from pursuing their own interests (Miller and Razavi, 1998). Although reallocating resources to women plays an important part in reducing gender imbalances, it is not enough to achieve actual equality and women's autonomy, which entails a fairer distribution of power. In particular, as previously discussed, when production is organised along gendered rules, the participation of women in the labour market would not necessarily enhance their capacity to meet their personal needs, which stems from their bargaining relationship with men in the most relevant domains, including the household and the labour market (Elson, 1995; Sparr, 2007).

The other perspective, which follows a similar line of reasoning and has become increasingly popular in gender and development studies, is the women's empowerment approach (Batliwala, 1994; Oxaal et al., 1997). According to this perspective, on the one hand, women should have the right to attain a greater degree of independence and a larger range of personal opportunities; on the other hand, the relationship between men and women at all levels of society needs to be transformed in order to build fairer institutional arrangements in the economic, political, social and cultural spheres (Charlier et al., 2007). In the final declaration of the fourth UN World Conference on Women, which took place in Beijing in 1995, empowerment is defined as a crucial development instrument: "women's empowerment and their full participation on the basis of equality in all spheres of society, including participation in the decision-making process and access to power, are fundamental for the achievement of equality, development and peace". A number of empowerment indicators have since been introduced by development institutions and aid agencies with the purpose of measuring, evaluating and promoting women's socio-economic conditions (Mosedale, 2005).

Kabeer suggests that social change and collective empowerment should be used as guidelines to understand the condition of women in terms of power, conflict and deep social structures, which characterise the communities they belong to. This broader notion of collective empowerment makes use of the basic principles of the social relations framework and suggests that women must acquire a sufficient degree of power to be able to take their own decisions on the way they want to live their lives, thus echoing Sen's idea of development as the freedom of people to choose how to pursue their own interests (Sen, 2000). In other words, empowerment is seen as an inevitably collective process because each individual woman cannot successfully demand change in society by herself (Martinez at al., 2005; Kabeer, 2005). As argued by Young (1993), women need to be enabled "to take control of their own lives, to set their own agendas, to organise to help each other", especially in situations of economic difficulty.

This collective perspective seems to be particularly pertinent to the formulation of my gender analysis on the impacts of economic crises, since women are negatively affected by downturns both at the household and at the community level. When their male partners or other members of the household become unemployed, women usually end up taking undesirable jobs in order to make up for the loss of income, while continuing to be solely responsible for household maintenance work. On the one hand, extra-household social gender norms force women to take up the most unprotected and least paid jobs; on the other hand, intra-household gender relations prevent men from taking care of the children and the elderly as well as carrying out chores and participating in other household activities. While it is worthwhile using some of the insights obtained from the gender roles approach, especially on resource allocation and time poverty, focussing on social relations and collective empowerment is important for the development of a gender analysis capable to fit in the broad feminist economic framework. The latter represents an illustration of the dominant economic capitalistic system, which is much more realistic than the mainstream neoclassical paradigm. Specifically, the emphasis placed by feminist economists on the primary role of women's unpaid work in sustaining the economy (Sweetman, 2008) sheds a light on one of core characteristics of the entire structure of capitalism. Therefore, gender analysis is neither a partial nor a biased perspective; it is instead the most appropriate approach to study the functioning of a fundamentally gendered process of production and distribution of economic resources. The diagram below summarises this analytical structure:



Well-being

Gender often features also in the literature on human well-being, as a valuable dimension in terms of conceptualisation and measurement; yet gender analysis is usually used as a distinct research methodology. A proven weakness of well-being indicators seems to be their incapacity to include all the main gender issues at once, including control over economic resources, education, nutrition, mortality, employment, but also time use and power relations (Klasen, 2004). In 1995, the United Nations Development Programme (UNDP) put forward two gender related indices of well-being: the Gender Development Index (GDI) and the Gender Empowerment Measure (GEM). These indicators have been criticised for being too aggregated and for overlooking local circumstances, including a lack of attention to urban/rural differentials as well as historical and cultural factors, which creates an arbitrary universal ranking of gender inequality (Folbre, 2006; Pillarisetti and McGillivray, 1998).

According to Klasen (2004), another question worth considering is whether promoting female empowerment is comparable or not to strengthening female well-being.[4] Evidence shows that some women, in contexts of extreme poverty, are led to sacrifice their personal welfare for the benefit of their children or other family members, by allocating them relatively more resources (Thomas, 1997). In that case, women who have access to resources and are better-off in terms of capabilities, would be worse-off in terms of objectively measurable well-being indicators, which are comparable to Sen's functionings. Sen addresses this controversial outcome by arguing that social and cultural structures generate a form of 'false consciousness', which cannot be taken as an accurate reflection of people's real degree of satisfaction (Sen, 1990). However, if the well-being function of a woman equals those of her children and family, the inseparability of their well-being outcomes must be recognised. Women's comprehensive well-being cannot be fully comprehended only at the individual level, mainly due to the significance of household as well as community and societal levels in the analysis of gender issues (Robeyns, 2003).

As a consequence, an interesting element to add to the theoretical framework of my research is the concept of social well-being, which has been developed by McGregor, amongst others. According to this approach, human beings relate to each other in the pursuit of their individual well-being, thus becoming part of a process that enables them to better meet their own goals, while constructing the structure of all levels of collectivity (McGregor, 2007). In a conceptualisation of social well-being similar to the traditional feminist economics perspective (Feber

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[4] For instance, Sen's human agency approach, which is a valuable instrument to explore the empowerment of individual women by focussing on their set of choices, could become misleading when altruistic considerations are incorporated in the interpretation of well-being.

and Nelson, 1993), also Keyes stresses this social foundation role of well-being, claiming that "social well-being is the appraisal of ones' circumstance and function in society" (Keyes, 1998). The social well-being framework requires the integration of the single individual, the woman in the case of my analysis, into the social collective reality to which she belongs, in order to investigate the way through which her well-being is achieved. Gendered interactions with family, friends and other community members also determine women's ability or inability to cope with the difficulties and obstacles that could prevent them from achieving their well-being goals.

In this regard, McGregor (2010) employs the concept of social well-being to examine the transformations in the nature of women's and children's vulnerabilities, as a consequence of the repercussions of the recent global financial crisis in Zambia. The basis of this approach, applied to a gender analysis, consists of a combined assessment of the objective circumstances characterising the condition of a woman and her subjective perception of them. This interaction that shapes the well-being outcomes of the woman occurs in society and cannot be understood without taking into account the economic, social and cultural factors characterising the community context in which she lives. In particular, social well-being outcomes are produced by the combination of interconnected components, which encompass what people possess, what needs they can meet with their resources as well as the value they attribute to their achievements in terms of changes in their quality of life (McGregor and Sumner, 2010).

Women belonging to different households are expected to adapt and deal with rapidly changing circumstances induced by economic shocks and crises, within the societal structure in which they live and work. The interplay between the personal resource base at the individual level and the nature of gender relations at the household and community levels, determines the way in which each single woman attempts to achieve her preferred outcomes and assesses the resulting level of her social well-being. This concept of social well-being, along with the most relevant aspects of gender analysis described above, is clearly central to my analysis. By combining gender-sensitive quantitative and qualitative information, I attempt to take into account a large range of objective and subjective elements characterising women's labour supply and occupational choice, including education, family background, empowerment indicators and personal perceptions of changing local circumstances and interpersonal relations. The case of Kenya between 2008 and 2009 represents an optimal setting for my research, due to a series of very relevant local factors, which will be described in the following chapter.

The Case of Kenya

Kenya is a suitable case study for my research, due to the occurrence of a series of simultaneous crises that badly affected the African country between 2008 and 2009. Besides, the adoption of a gender specific analysis of the impacts of these crises appears to be particularly indicated in the case of Kenya, given the vulnerable status of Kenyan women and girls in society. In particular, the multiple crisis that shook the country in 2008 touched on many different sectors and dimensions of livelihood, thus affecting women's welfare through various channels. On top of a persistent drought, which incessantly hit the country since 2001, Kenya found itself dealing with a brutal political crisis, an oil and food price crisis and the eruption of the global financial crisis as well (Hossain, 2010). These compounded shocks hit with different intensity across the eight Kenyan provinces, yet producing a marked negative effect on the whole economic system, as clearly indicated by the sharp decline of the economic growth rate, from 7.1 percent in 2007 to 1.7 percent in 2008 (Mwega, 2010).

Although my analysis does not aim at distinguishing between the specific impacts of different types of shocks, it nonetheless attempts to account for some geographical variations in the severity of the impacts. In this sense, the qualitative information at my disposal covers two interesting, though very small, areas, namely the Mukuru urban settlement in Nairobi and the rural village of Lango Baya. Both places are located in areas which appear to have been significantly affected by at least one of the multiple shocks described above, even though it is difficult to find detailed information recorded at the administrative unit level. In my quantitative analysis, I am placing a special focus on the different administrative units, by using community variables and controlling for the clusters in the dataset. However, given the difficulty to single out distinctive regional effects and the fact that compounded shocks were widespread across the country, my quantitative analysis is nationally representative and incorporates the whole of Kenya, without any specific regional distinction.

In the very fragmented Kenyan labour market (Atieno, 2006), the cost of this widespread situation of crisis was felt with special intensity by the poorest and most vulnerable groups of people in society, in terms of job and income losses, declining purchasing power and socioeconomic adjustments at the household level (Kibaara, 2008). In a context of deep-rooted unfair gender relations in various spheres of society, including the household and the labour market, Kenyan women ended up bearing most of the burden, stemming from socioeconomic adjustments and affecting them through several channels. Before discussing the condition of women in the Kenyan society, focussing on the labour market at the centre of my analysis, it is important to describe how this multiple crisis dramatically affected the country's economy.

The low growth in 2008 was mostly due to environmental hazards, high food and fuel prices and the political violence that followed the general elections held in December 2007 (Okello, 2009). This adverse economic situation led to reduced employment, as proven by the fact that an estimated 30 percent of Kenyan companies had laid off workers by the beginning of 2009 (FKE, 2009). At the same time, in a country where agriculture is the dominant sector, accounting for almost 30 percent of GDP (Mwega, 2009), post-election turmoil caused the disruption of numerous harvests, especially in the Coast and Western provinces, and aggravated the reduction in agricultural production, which was already strained by a long-lasting drought. In 2008, the areas planted with maize and wheat decreased by more than 20 percent and a shortage of rains compromised the production of other cereals; overall, agriculture declined by 5 percent (Mwega, 2009; Okello, 2009). Since approximately 60 percent of all Kenyan farming household are net buyers of staple food, they were the victims and not the beneficiaries of the surge in food prices, which in turn led to very high inflation, in double-digit for most of 2008. Finally, Kenya's agriculture production was affected also by a decline in export trade towards Western countries, as a consequence of the eruption of the financial crisis. This slowdown in global demand hit Kenyan commercially-oriented agriculture, such as tea, horticulture and coffee productions, where a large proportion of female workers are employed (Nyabiage, 2009). For instance, in consequence of a 35 percent drop in flower exports between April 2008 and April 2009, thousands of jobs were reported to have been cut in the labour-intensive horticultural industry of the Coastal region, in which 75 percent of workers are women (Mwega, 2010).

Therefore, although the country's financial and banking sector itself, given the minimal exposure of Kenyan commercial banks, was not particularly harmed by the global financial crisis, related negative side-effects had a noticeable impact on the real economy through indirect transmission mechanisms (*Ibidem*). Particularly in the early phase of the global crisis, which is the period analysed in this paper, strong uncertainty regarding future potential impacts acted as a major deterrent to expenses and investments in Western countries. Beside the negative effect on exports demand mentioned above, also Kenya's tourism sector suffered from this contraction, especially the hotels and restaurants in Nairobi and the Coastal tourist resort attractions. The financial crisis worsened an already difficult year for Kenyan tourism, which was dramatically hit during the entire 2008 by the post-election violence; indeed, in the first ten months of the year, tourism arrivals declined by 35 percent, mainly due to cancellations from North America and Europe (CBK, 2008).

Another indirect consequence of the financial crisis was a reduction in remittance inflows from the Kenyan diaspora, which struggled to cope with rising unemployment levels in industrialised countries (McCormick, 2008). While remittances sharply increased in the wake of the election turmoil, with migrants trying to cushion their families against adverse effects of the violence, the inflow of money stabilised and then declined in the last part of 2008, reflecting the deterioration of migrants' financial condition in their immigration countries. In January 2009, remittances declined by 27 percent when compared with January 2008, affecting many households that depend on remittances as a crucial source of income; in fact, evidence collected by the World Bank (2006) shows that, in 2005, remittances determined a 8.5 percent reduction in the number of people living below the poverty line in Kenya.[5] Since the majority of Kenyan migrants are men, the women left behind as household heads in difficult economic conditions were thus required to deal with and make up for this additional loss of income caused by the decline in remittances. In order to better understand the context in which this multiple shock disproportionately affected Kenyan women, I now briefly describe their role and status in Kenyan society.

Kenyan women constitute the majority of the poor (CBK, 2008), on average they are poorer than men and more "vulnerable to adverse shocks than men", as stated in the World Bank's 2004 country report (WB, 2004). Clear signs of the gender differentials characterising Kenyan society are school enrolment rates, lower for girls than for boys, and HIV/AIDS prevalence rates, which are much higher for women than for men, with infection rates for teenage girls five times higher (UNDP, 2002). Moreover, half of all Kenyan women and girls reported to have experienced physical and sexual abuse, with high proportions of married women being victims of domestic violence (*Ibidem*).[6] In rural areas, where the great majority of women live and work, 54 percent of them lay below the poverty line, a proportion that increases up to 63 percent in the poorest urban areas (WB 2004). However, women make a large contribution to the national economy, especially in agriculture and in the informal sector of the urban labour market (Atieno, 2006). The latter is defined by the Kenya System of National Accounts as a group of production units that form a part of the business sector as unincorporated enterprises owned by households (Republic of Kenya, 2002) and a large proportion of women counted as employed are also underemployed in this sector (McCormick, 1992).

In the agricultural sector, women supply 70 percent of labour, particularly for export industries that benefitted from the increase in the volume of international trade over the last two decades; for instance, Kenyan women constitute an

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[5] The poverty line in Kenya was defined by the WB, in 2005, as 1,239 (US$16.81) Kenyan shillings (K Sh) and as K Sh 2,648 (US$35.93) per month for rural and urban areas, respectively.

[6] Gender based abuse, often accepted under customary law, is one of the main factors undermining women's ability to participate in the public and economic spheres in Kenya.

estimated 75 percent of the labour force in the horticulture sector (WB, 2007). Nevertheless, women hold only 1 percent of registered land titles in their names and, despite working longer hours when compared to men, with an average of 12.9 hours a day instead of 8.2 hours, they earn substantially less because more of the hours worked by women are not remunerated (*Ibidem*). As a result, Kenyan women end up being monetarily poor as well as 'time-poor', given their overlapping roles in the labour market and the household economy (Saito, Mekonnen and Spurling, 1994). They undertake several fundamental household tasks that are income-replacing, especially in rural areas, where only a small minority of houses have access to piped water supplies and women are obliged to spend half of their day just fetching water (Were and Kiringai, 2003).

There exists a large range of factors that constrain women's access to formal wage employment, including cultural norms and social roles, occupational segregation by gender and lack of access to technology and credit. As a result, men outnumber women in the categories of formal and skilled employees, whereas women are the majority of urban poor unskilled workers and are disproportionately represented in community and personal services (WB, 2007). Gender inequality in areas like education, vocational training, capital requirements and expected earnings contribute to determine occupational choices; hence, women are often barred from certain activities, usually more stable and remunerative (Saget, 1999; McCormick and Mitullah, 1995). In this regard, Mwabu and Evenson (1997) found that occupational patterns in rural Kenya are greatly influenced by education, among other aspects, and showed that most of gender employment differentials can be explained by differences in their characteristics. At the same time, a recent report published by the World Bank on gender issues in Kenya lists a number of bureaucratic barriers also affecting Kenyan women, such as legal, administrative and regulatory barriers. The combination of gendered cultural norms, traditional practices and insecure rights shape both women's labour supply and their resulting personal welfare. My study of the female labour force participation in different sectors of Kenya's market aims to investigate the significance of these various factors in determining women's choice of activity, in times of crisis. In the next section, I introduce and illustrate the dependent and independent variables, obtained from the Kenya DHS dataset, which will be used in my quantitative analysis.

Although the characteristics of the different shocks that impacted Kenya as well as the insights offered by the feminist economic perspective would require the use of a large range of variables, my quantitative analysis is strongly constrained by data availability. In particular, many individual features and community factors that I discussed in the literature review cannot be captured by my empirical model. For instance, although I emphasised the centrality of time use patterns to assess the changes in women's livelihoods and welfare (Folbre, 1984; Beneria, 2003; Andia Falgade, 2006), DHS datasets do not provide me with any information on this crucial aspect. Similarly, I have no data concerning women's income or consumption trends, which would be interesting to compare to men's, in the context of households' adjustments to the shocks. In fact, the qualitative data that I am using in this paper show that a reduction in food consumption due to income loss was one of the key coping strategies adopted by many Kenyan families. Therefore, given the already discussed unequal distribution of resources between men and women within the same household (Kabeer, 1997), my quantitative analysis should ideally include specific variables accounting for this aspect. At the same time, while I am making use of community level variables in my model, it is impossible to detect variations in social cohesion or solidarity among people through the quantitative analysis only; also in this case, the use of additional qualitative information will help me to have a better understanding of crisis-driven changes. Nonetheless, as I explain in detail in the section, I believe that my econometric model of labour supply and occupational choice is a useful instrument to estimate the impacts of the multiple crisis on a fundamental area of women's lives. By looking at the determinants behind the choice of more or less stable and desirable jobs, I aim at analysing women's disproportionately reduced capacity to engage in those activities that would enable them to achieve their preferred well-being outcomes.

Methodology and Variables

This research makes use of quantitative data, based on the 2003 and 2009 Kenya Demographic Health Survey (DHS), and qualitative data, collected in 2009 and 2010 by Kenyan researchers, in the context of a project coordinated by the Institute of Development Studies (IDS). While qualitative information, quantitative descriptive statistics and my most significant findings will be discussed in the next chapters, I am presenting here the empirical model that will be used in my econometric estimations, together with the dependent and independent variables that will inform the model itself. The empirical question of my research can be illustrated as estimating the probability of an individual female *i* engaging in extra-household labour and choosing the occupation type *j*. In fact, I am looking at the female labour supply as part of the coping strategies adopted by Kenyan households in the face of a situation of sustained economic hardship. By placing the focus on labour, I intend to examine the impact of the 2008 multiple shock on a crucial sphere of Kenyan women's daily life, which affects their time, personal independence and position in society and represents a central feature in the study of household coping strategies.

I am specifying a two-fold categorisation, similar to the ILO classification (ILO, 2004; Battistin et al., 2005), which is constituted by a work participation model as well as a job choice model. The work participation model is a binomial logistic regression model, in which a binary outcome variable takes value 1 if a woman, aged 15 to 49, engages in some form of labour aside from her own housework, and 0 otherwise. This definition reflects the relevant questions in the DHS woman's questionnaire, which adopt a broad interpretation of employment and consider a woman unemployed if she undertakes domestic tasks only. In particular, the woman is asked, 'aside from your own housework are you currently working?'; if the answer is 'no', she is asked, 'as you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you currently doing any of these things or any other work?'. A woman is considered employed if she says 'yes' to either of these two questions, including formal and informal work, work in and outside the household, work for payment in cash, in kind or no earnings.

A further specification is necessary to capture the specific type of activity undertaken by the woman, in an attempt to assess her conditions and related vulnerabilities, resulting from her labour status. Therefore, I am estimating an occupational choice model using a multinomial logistic regression with three different types of jobs: unpaid, permanent employment and self-employment. The reference category is being outside the labour force, as defined in the questionnaire. The multinomial logit model aims to investigate the determinants underlying the decision taken by the individual, based on a constrained welfare function of utility maximization. In my case study, women living in settings characterised by more or less poverty and economic crisis are expected to make their decisions in accordance with coping/survival strategies. Given the differences across these settings, which represent Kenya's sub-regional communities, I am also using a community variables, with the aim of taking into account the influence of community level factors on women's decisions and outcomes at the individual level. This model permits the examination of the effects that influence and constrain women's choice, among possible alternative activities associated with different levels of utility *U*. In my analysis, the corresponding utility function of a woman *w*, deciding among alternative activities *a*, is described as:

$$U_{wa} = U_{wa}(Y, H, C) + \mu_{wa}$$

The utility that each single woman *w* derives from engaging in activity *a* is U_{wa}, which is contingent on the vector of her individual characteristics Y as well as household H and community C characteristics. From this utility function I derive the empirical problem of determining the probability of women choosing a particular type of occupation. There exists a large range of distinctive elements that characterise each person as well as her household and broader community; hence, it is important to select an appropriate set of explanatory variables that have an effect on the woman's choice problem with multiple alternatives.

Individual variables

The individual characteristics that I am taking into consideration cover a wide spectrum and can be divided in two groups: first, a set of personal attributes, consisting of age, marital status, educational level and number of sons and daughters. Second, my key empowerment indicator, constructed by using the group of questions regarding women's attitude towards domestic violence, which is included in the DHS questionnaire for this purpose. The age structure, limited in the DHS dataset between 15 and 49 years, is important to determine the patterns of labour supply, given the different productivity of young and old people. At the same time, the literature on the subject often uses age as a proxy for experience, generally showing a progressive increase in labour participation, peaking around the 30 to 35 years age group (Horton, 1996).

Related to age is also education, with teenage girls missing out on higher educational attainments, when permanently employed. Education itself, defined as the number of years of schooling completed, is another crucial explanatory variable for my labour supply model, since educated women are expected to be more aware of their rights and capable of assessing the actual benefits of existing job opportunities. Especially in the developing world, relatively more educated women usually decide against joining the work force, if their partner is employed and labour markets are limited. However, either a sudden or a prolonged situation of economic hardship can force the woman to choose jobs that would have been undesirable otherwise. Therefore, estimating the correlation between education and job choice will also help me to disclose the intensity of crisis impacts.

Marital status, a dummy variable that takes value 1 if the woman is married, is particularly useful in the analysis of labour supply. On the one hand, the relationship between wife and husband plays a central role in determining the type of activities undertaken by each household member; on the other hand, the particular condition of a single woman in a developing country like Kenya, is likely to produce a specific notable effect on her labour supply and job choice.

Since 1999, DHS questionnaires contain specific questions on women's status and empowerment, which are included in both the 2003 and 2009 Kenya DHS surveys. My analysis also uses women's attitude towards wife-beating as the empowerment explanatory variable. I believe that this particular indicator provides me with a good indication of women's personal emancipation, given the sensitivity of the issue under examination. At the same time, I have decided against using the other available empowerment indicator concerning women's access and control over their own earned money. Although of great interest, this indicator would not work for my analysis because it is bound to be related to the level of power attained by women who are engaged in some form of paid labour, distinct from household work.[7] In brief, the effect of higher degrees of empowerment on occupational choices will be captured, in my analysis, as the ability of relatively more empowered women to avoid the most undesirable and uncertain jobs. However, their inability to do so will be the most significant result, indicating a strong adverse impact of an economic shock.

Context variables

The first two household variables are concerned with the household head and the household size. If the woman is the head of her household the relevant dummy variable takes value 1 and I expect this condition to have a noticeable impact on her labour choice. The household size is also an interesting variable, suggesting the size of the labour force at disposal of the household. The last household variables included in the model define the socioeconomic status of the household itself, reflecting the DHS wealth index which is constructed from existing data on household assets, services, and amenities. The prevalence of these assets can affect women's occupational choice, especially in rural areas. Households are indeed categorised according to their rural or urban location, through the use of a dummy variable that takes value 1 for urban households.

As mentioned in the previous section, within my nationally representative quantitative analysis I am also placing a specific focus on Kenyan sub-clusters,

[7] By using this alternative empowerment indicator I would encounter econometric problems, including endogeneity issues, which would lead to biased results and thus hinder my analysis.

which are indicative of local administrative units. By adding this community focus, I am attempting to assess potential impact variations across women living in different Kenyan communities, reportedly affected in different ways by the combination of shocks. In order to further distinguish between different towns, villages and other smaller administrative units, I am thus employing a set of community variables, which represent the third category in my model, after the two categories of individual and household variables. In addition, I am also controlling for clustered standard errors. My community variables are designated as averages over all female individuals belonging to a certain community and are intended to account for the local prevalence of factors capable to produce an influence on women's ability to deal with their occupational choice problem. The information provided by the Kenya DHS enable me to include as community variables the proportion of empowered women (using the same empowerment indicator adopted for the individual level) amongst local dwellers, the prevailing form of religion (whether Christianity or Islam), the average health situation and the average presence of houses with current electricity. This group of variables attempts to account for the influence of traditional and cultural norms as well as the level of collective empowerment and local economic development. The health situation in the community is expressed as local prevalence of sexually transmitted diseases.

Data and Descriptive Statistics

The datasets that I am using for my quantitative analysis are the product of the two most recent available Demographic Health Surveys for the Republic of Kenya (KDHS), the 2003 KDHS and the 2008/09 KDHS (2009 KDHS from now onwards). These two KDHS were both designed as nationally representative sample surveys and were respectively conducted from April to September 2003 and from November 2008 to February 2009. The main objective of the KDHS is to collect information on demographic rates, fertility preferences, contraceptive use prevalence, maternal and child health as well as knowledge and behaviour related to HIV/AIDS and other sexually transmitted diseases. However, the questionnaires used for the surveys contain a specific section on women's employment status and a number of detailed questions on their degree of empowerment and type of relation with their partners.

The sample for the 2003 KDHS covered a total of 8,195 Kenyan women, aged 15 to 49 years, coming from 400 different administrative units (clusters), of which 129 urban and 271 rural. The division of the sample by clusters seems to be more significant than the one by households, given the fact that not all the women were usual residents of the households in which they were interviewed, some of them were just visitors present in that particular household on the night before. This consideration is reflected in my econometric model, on the one hand, by the use of community level variables based on the cluster classification, on the other hand, by the calculation of cluster-robust standard errors. From the same 400 clusters, the 2009 KDHS collected information on 8,444 Kenyan women, also aged 15 to 49 years.

The use of two rounds of the KHDS is intended to provide the ground for an inter-temporal comparison of labour supply trends and women's distinctive occupational choices, in the wake of a particularly difficult period for the Kenyan socioeconomic system. Indeed, although in 2003 Kenya was still a developing country with internal structural problems and 56 percent of its population living in poverty (CBS, 2003), both its tourism and manufacturing sectors were expanding and the general outlook of its economy was much better than in 2009, when the country faced a dramatic multiple shock, as described in the previous sections of this paper. Although the 2003 and 2009 datasets do not represent a panel and it is therefore impossible to retrace the changes in the characteristics of the same women, the findings obtained in the two rounds are comparable and useful to describe the evolving attributes of the Kenyan female population, since 'data collected by the DHS program are of high quality and comparable across countries and over time due to meticulous design in sampling, methodology, protocol and analysis' (Hong at al., 2009).

I begin my illustration by focussing on some of the key attributes that are representative of women's personal characteristics and are likely to have had an impact on their labour supply and job choice, namely women's age group, marital status and number of children (whether more or less than 5) as well as the type of area in which the interviewed women lived at the time of the two surveys, divided between urban and rural settings.

Table 1. Interviewed women's attributes

Attributes	2003	2009
Age group		
15-19	22.21 %	20.93 %
20-24	20.87 %	20.65 %
25-29	17.08 %	16.85 %
30-34	13.62 %	13.97 %
35-39	10.48 %	11.01 %
40-44	9.52 %	8.65 %
45-49	6.22 %	7.93 %
Marital status		
Never married	30.09 %	30.08 %
Currently married	59.50 %	59.70 %
Formerly married	10.41 %	10.22 %
Number of children		
Strictly less than five	80.98 %	81.49 %
Five or more	19.02 %	18.51 %
Type of area		
Urban	33.57 %	30.97 %
Rural	66.43 %	69.03 %

Source: Author's calculations from KDHS 2003 and 2009

Table 1 clearly indicates that the specified women's attributes did not vary a lot from 2003 to 2009. Younger women, under 30 years old, represent almost 60 percent of both samples, currently married women account for 60 percent of all respondents and mothers with five or more children were less than 20 percent of the sample in both years. As far as the type of area is concerned, it is possible to notice a slightly bigger proportion of women living in rural areas, in 2009. All these figures are relevant for my analysis, since consent to exclude a changing effect produced by any of these key attributes and different types of location on women's occupational choice patterns, between the two years. In fact, given the influence of those factors on female labour supply, a remarkable variance of their statistical prevalence between the two samples, could have distorted the trends of female labour supply and occupational choice, regardless of the impacts of the crisis. On a different note, the small but noticeable movement of women (around three percent) from urban towards rural areas could already be indicative of the situation of crisis, which might have encouraged some internal migrants to go back to their households of origin in the countryside, where they can usually rely on a social net of solidarity that does not exist in the big cities (Zhao, 2009). Another crucial background element that needs to be taken into account is the educational level of the respondents.

Table 2. Percentage of women in respect to their level of education

Education level	2003	2009
No education	15.75 %	14.71 %
Primary	53.06 %	52.16 %
Secondary	24.10 %	24.68 %
Higher	7.09 %	8.46 %

Source: Author's calculations from KDHS 2003 and 2009

Table 3. Percentage of working women according to their level of education

Educational level	2003		2009	
	Working	Not Work.	Working	Not Work.
No education	42.76 %	57.24 %	36.96 %	63.04 %
Primary	58.95 %	41.05 %	54.97 %	45.03 %
Secondary	57.22 %	42.78 %	53.93 %	46.07 %
Higher	72.81 %	27.19 %	69.47 %	30.53 %

Source: Author's calculations from KDHS 2003 and 2009

Table 2 and 3 provide me with fundamental information on the educational structure of the female population, aged 15 to 49, in Kenya and the relation of education with women's labour supply. From Table 2 I see that the majority of women have at least a primary school degree, the proportion of women with no education is sizeable but not exceptional and, as expected, the percentage of women with higher education is very small. Secondly, I observe that there is no noticeable difference between the education of women in 2003 and 2009 at all levels, which is not a surprise given the relative short period of time separating the two surveys. However, looking at Table 3 I do notice a difference between 2003 and 2009 in the proportion of working women, with respect to their level of education. In each single educational sub-group, the percentage of women who said they were 'currently working' is smaller in 2009 than in 2003, with the biggest reduction among women with no education at all (- 5.8%) and the smallest reduction among women with the highest level of education (- 3.34%). This tabulation seems to offer the first clear hint of the impact of the crisis, by identifying a reduction in employment rate for Kenyan women. Besides, the stronger visible impact on non-educated and less educated women highlights the fact that those women, who were likely to be particularly vulnerable and have the most uncertain jobs, were disproportionately hit by the downturn. At the same time, well-educated women with formal and more regulated jobs were probably less affected.

Table 4. Women's employment status

Employment status	2003	2009
Working	56.82 %	53.21 %
Not working	43.00 %	46.79 %

Source: Author's calculations from KDHS 2003 and 2009

Table 4 confirms that the percentage of women engaged in some form of labour 'aside their household work' declined in 2009 when compared to 2003. While this information forms the basis for my binomial model of labour supply, the multinomial model of occupational choice uses data on the type of earning and characteristics of the labour activity undertaken by the surveyed women. The tables below summarise the statistics on which I have built the dependent variables (unpaid work, permanent work, self-employment) for my multinomial model and provide an interesting insight into the evolution of the female labour market in Kenya, between 2003 and 2009.

Table 5. Type of earning for women's work

Type of earnings for work	2003	2009
Not paid	17.36 %	20.36 %
Cash only	58.57 %	68.06 %
Cash and kind	17.72 %	9.48 %
In kind only	6.24 %	2.02 %

Source: Author's calculations from KDHS 2003 and 2009

Table 5 points towards two possible effects of the 2008 economic shocks on women's type of earning. Among the women who did some extra-household work in 2009, the proportion of those engaged in very low-status and unstable activities, represented by 'not paid work', increased by three percent when compared to 2003. At the same time, the proportion of working women fully paid in cash increased by almost 10 percent. These statistics detect a visible transformation of the labour market, suggesting that those women, who were still employed in spite of the crisis, were probably engaged either in formal reliable jobs (less affected by the crisis) or in very low paid, uncertain jobs (consequence of the crisis). The table below gives further information on this.

Table 6. Type of women's work activity in terms of job stability

Type of work activity	2003	2009
Permanent	66.55 %	63.42 %
Occasional	33.28 %	36.43 %
Employee	38.19 %	40.24 %
Self-Employed	60.70 %	59.66 %

Source: Author's calculations from KDHS 2003 and 2009

Table 6 seems to confirm my previous considerations, since the proportion of women with relatively more permanent jobs (lasting all year) was 3 percent greater in 2003 than in 2009. However, the interpretation of the figures concerning self-employment is not as straightforward, with the percentages for the two rounds being practically the same. Since self-employment can include both paid, unpaid, permanent or casual labour, only by combining all types of work described above I can get a clearer picture of women's occupational patterns. This is precisely want I am attempting to achieve with my multinomial model of occupational choice, which I present in the next chapter.

As extensively explained, a central element of my analysis is women's degree of empowerment, which I use as an explanatory variable to determine the ability of more (less) empowered women to choose better (worse) types of labour activity, in a situation of economic crisis. In this regard, a first fundamental step is to determine the most appropriate indicator of empowerment among the possible alternatives offered by the 2003 and 2009 KDHS. The tables below illustrate a series of empowerment variables, their prevalence in the sampled population and noticeable variations between the two rounds.

Table 7. Prevalence and trends of women's empowerment indicators

Empowerment indicators	2003	2009
Use of contraception		
Never used	50.29 %	46.22 %
Used modern method	43.03 %	50.43 %
Decision-making power		
Women who have a say on their own health care	48.69 %	71.30 %
Women who have a say on household major purchases	33.17 %	65.11 %
Domestic violence		
Women who think wife beating is justified during arguments	45.77 %	29.50 %
Women who think wife beating is justified if sexual intercourse refused	29.69 %	22.64 %

Source: Author's calculations from KDHS 2003 and 2009

From Table 7 it is possible to observe that the degree of empowerment of the respondents appears to have increased sharply in the five years between the two surveys. First of all, a greater proportion of women were reported to be using modern methods of contraception, including condoms and the pill. Secondly, the decision-making power of women seems to have increased remarkably from 2003 to 2009, with the percentage of women who participated in household's major purchases almost doubling. Finally, the same positive trend is observable with respect to domestic violence, since in 2009 a smaller proportion of women thought that husbands/partners were justified to beat their wives/partners if she argues with him or refuses to have sex with him. The latter indicators, related to women's attitude towards violence, indicates the existence of a relatively high degree of empowerment also in 2003; as a result, the improvement is less striking than in the other cases, with a reduction in the percentage of women justifying wife beating of only 7 percent, from 29.69 to 22.64 percent. This is a good reason for me to make use of this empowerment indicator as the explanatory variable for my model. Indeed, the strong change in the prevalence of the other degrees of empowerment could influence the job choice of women, regardless of the impact of the crisis. On the contrary, what it interesting for me to investigate are the changes in the ability of women, with similar levels of empowerment, to choose certain types of jobs in the wake of the 2008 multiple shock that affected Kenya. As a preliminary stage of my quantitative analysis, I am presenting in the following table a tabulation that correlates an empowerment indicator with female labour supply and job choice.

Table 8. Influence of empowerment on labour activity

Type of activity	2003		2009	
	Empowered	Not Emp.	Empowered	Not Emp.
Working	57.35 %	55.84 %	54.49 %	51.20 %
Not Working	42.63 %	43.68 %	45.51 %	48.80 %
Not Paid	14.78 %	22.20 %	18.45 %	26.01 %
Permanent Job	69.45 %	61.13 %	65.08 %	58.50 %
Occasional Job	30.02 %	38.76 %	34.8 %	41.24 %
Self-Employed	55.10 %	68.22 %	57.61 %	69.87 %

Source: Author's calculations from KDHS 2003 and 2009

The tabulations shown in Table 8 are a clear indication of both the influence of empowerment on women's occupational choice and the impact of the crisis on the capacity of women to take advantage of their degree of empowerment. In both 2003 and 2009, relatively more empowered women (those who think that a man is not justified to beat his wife if she argues with him, or she goes out without telling him, or she neglects the children, or she refuses to have sex with him) had better jobs, in terms of stability and remuneration. The proportion of women engaged in unpaid jobs was greater among those less empowered, while more empowered women were engaged in permanent jobs than less empowered ones. However, being empowered in 2009 seemed to have a less strong positive impact on women's job choice. While only 14.78 percent of empowered women were working unpaid (or very poorly paid and not in cash) in 2003, this percentage increases to 18.45 percent in 2009. Conversely, while almost 70 percent of the more empowered respondents were engaged in stable, permanent jobs in 2003, the proportion declines to 65 percent in 2009. In addition, Table 8 helps me to better interpret the female labour status related to self-employment, which appears to be a relatively undesirable type of activity, since is much more common among less empowered women. Although the difference between the two years is not very marked in the case of self-employment, the trend points to the same direction: empowerment is less effective to avoid self-employment too. In the next section, I am introducing my econometric analysis, through which I aim to further the understanding of the correlations described in this section. The tables with the results of the regressions are shown at the end of the section.

Quantitative Analysis

Labour Supply Model

Table 9 and 10 show the results of my first logistic regressions, based on a binomial model of labour supply, which illustrates the effects of individual, household and community variables on the probability of Kenyan women to be engaged in some form of labour, aside their housework. Table 9 shows the effects of these variables in 2003, while Table 10 illustrates the same variables for 2009, indicating their effects after the multiple economic shock that hit Kenya. The comparison of the most significant of these results provides some interesting insights, signalling though the inability of this simple binomial model to give a satisfactory account of female labour supply's changing determinants. The individual empowerment indicator has a negative sign in both years, but it is not statistically significant; conversely, the educational level has a significant positive effect. This seems to indicate that relatively more educated women had greater probability to work outside of the household in 2003 and in 2009, but it leaves unexplained the effect of women's personal emancipation, before and after the crisis. In this regard, the general level of empowerment of the women living in the local area, which is the first of my community variables, had a negative and significant effect on the probability of women to be working in 2003; however, in 2009 this community effect lost its statistical significance, maintaining though its negative sign. It is only by looking at the type of work undertaken by women that I will be able to attain a better understanding of the changing intensity of the empowerment effect. I will attempt to do this with the interpretation of my multinomial model of occupational choice, after a brief illustration of some other findings emerging from the labour supply model.

Amongst the individual variables, both age variables were significant in 2003 and 2009. On the one hand, women are more likely to be working as they get older but, on the other hand, there exists an age peak after which this probability starts decreasing again. Besides, married women had lower probability to work than women without a husband, before and after the crisis. This result seems to be confirmed by the coefficients attached to the household head variables, in both years, which indicate a greater probability to work for women who were heads of their households. An interesting difference between 2003 and 2009 is the effect of having a large number of daughters on the probability of the woman to work outside of the household. While in 2003 women with a larger number of daughters had lower probability to be engaged in extra-household labour, in 2009 the variable associated with the number of daughters loses its statistical significance. This change may be explained by the 2009 crisis-induced loss of income, which forced also Kenyan women with a large number of children to look for jobs. The specific significance of female children's number might be explained by the fact that boys are more likely to be out of the house, attending school or working, while girls tend to stay at home, often helping their mothers.

The household size appears to have maintained a negative significant effect on the probability for women to work, also after the crisis. With many members of the household at disposal, women are indeed more likely to concentrate on domestic tasks and caring activities only. The urban/rural differentials do not appear to have a significant effect either in 2003 or in 2009. The multiple crisis hit both Kenya's urban and rural areas, thus producing similar effects in the two settings. However, the level of economic development of the local area, captured in my model by a proxy of local electricity supply, appears to have a crisis-induced negative effect on the probability of working.[8] Finally, the religion and health community variables were strongly significant in both 2003 and 2009, revealing that in areas where Islam is the prevalent religion, women are less likely to work, regardless of the crisis, while in areas where there is a relatively high number of women affected by sexual transmitted diseases, the probability for women to work tends to increase. The results of the occupational choice model that I am presenting below will also be helpful to better understand this important aspect.

Occupational Choice Model

The multinomial results shown in Table 11 and Table 12 enable me to differentiate the effects of my variables of interest, according to the type of activity undertaken by women. The first important element to highlight is the significance of the empowerment indicator in 2003, which was not possible to single out in my binomial estimation. Table 11 indicates that amongst the women interviewed in 2003, those who were relatively more emancipated, as defined in the previous chapters, had a statistically significant lower probability to be engaged in self-employment activities and in the most undesirable jobs,

[8] One possibility is that jobs were lost in exactly in those areas that were relatively more developed economically, simply because it is were factories and commercial farms are located.

which are included in the category 'unpaid work'. As far as the most stable and best remunerated jobs are concerned, which I have defined as 'permanent job', the empowerment variable has the expected positive sign, meaning that more empowered women were more likely to have better jobs, but its coefficient is not significant. In fact, in this case it is women's educational level the single individual characteristic to have a significant positive impact. In other words, in order to be able to get formal, stable jobs, a greater degree of education appears to be the most effective instrument at women's disposal, while a greater degree of personal emancipation is not sufficient.[9]

By looking at the same empowerment variable in Table 12, it seems possible to highlight the negative impact of the severe multiple crisis on the ability of Kenyan women to avoid the most undesirable jobs. Indeed, in 2009, the empowerment indicator is no more significant for any of the labour dependent variables at the centre of my analysis. Therefore, regardless of their level of personal empowerment, an increased number of women was probably forced to engage in non-paid and poorly paid work or to set up their own little business, with the aim of gaining some vital extra income for their households. I believe this could be a tangible indication that the level of personal welfare of Kenyan women was negatively affected by the crisis; indeed, many women, who would have avoided low-status jobs in the labour market in 2003, did not have the possibility to make the same first-best choice in 2009. The analysis of qualitative information, in the next chapter, will help me to understand the welfare impact that this transformation had on women, in terms of their time use patterns and gender relations, in crisis-torn Kenyan communities.

From the analysis of the other variables, at the individual and household levels, I can get some other insights into the effects of the crisis on the determinants of women's occupational choice. The only variable whose effect appears to be completely unchanged between the two rounds of the Kenya DHS is 'marital status', while all other coefficients attached to my control variables underwent a

[9] The fact that the education variable absorbed the statistical significance of the empowerment effect also indicates that my econometric model is able to avoid misleading results, by dealing with endogeneity issues through the use of adequate control variables, like the educational level, as discussed in the section on methodology.

crisis-induced transformation. In both years, women with more children, regardless of their gender, were less likely to have a permanent, formal job. However, while in 2003 having a larger number of daughters also reduced the probability of women to set up their own business or work in agriculture as a self-employed farmer, in 2009 this effect lost its statistical significance. In times of crisis, mothers were forced to come up with some income-generating idea, even though this meant leaving their daughters at home, or even at work, alone. In 2003, being a household head increased the probability of women to have a permanent job or to be self-employed; in 2009, female household heads were more likely to be engaged in unpaid work too, a sign of the pressure created by the crisis to go out of the household and find any available job on the market. Moreover, the urban/rural variable, which was not significant for any type of activity in 2003, shows that women engaged in unpaid work in 2009 were more likely to live in rural areas, suggesting that the majority of the less desirable and poorly paid jobs were in non-commercial agriculture. The set of four quintile variables has the primary role of controlling for unobserved wealth effects on occupational choice, but provide me with an interesting insight too. In 2009, women in the second and third wealth quintiles had greater probability to be engaged in low-status unpaid activities than in 2003, thus indicating a general impoverishment of the female population, in consequence of the crisis.

At the community level, being member of a Muslim community reduced the probability of women to be engaged in any form of labour, both in 2003 and 2009. Religious values appear to be stronger than any economic considerations. When it comes to the health conditions of the local population, in 2009 women were much more likely to work than in 2003, especially in low-status positions, if the number of people in need of care was bigger in their community. This result may be interpreted as local women's reaction to a crisis-induced failure of previous mechanisms of assistance and solidarity for people affected by HIV/AIDS and other sexual transmitted diseases. As expected, also my proxy for the local level of community's economic development shows a transformation that can be attributed to the occurrence of the crisis. In 2003, in relatively more developed areas women had greater probability to have a permanent job and lower probability to do unpaid work, while the effect on self-employment was not significant. In 2009, the level of economic development had a less significant effect on the probability of avoiding unpaid work and did not have any significant effect on the ability of women to choose a permanent job.

Finally, in 2003 the community empowerment indicator shows exactly the same signs as the individual one, albeit its statistical significance is lower, since the empowerment effect is greatly absorbed by the individual variable. Interestingly, in 2009 the level of general female empowerment in the local communities, had a very significant strong negative effect on women's probability to engage in undesirable unpaid work. Although a personal high degree of empowerment does not seem to be sufficient to avoid unpaid jobs, an emancipated local community may have acted as a defence against the worst forms of exploitation. As I will discuss more in depth in the analysis of qualitative information, this may be attributable to the existence of women's solidarity groups, through which Kenyan women helped each other financially during the worst periods of the crisis. This groups are more likely to have been set up in settings where a larger number of women were relatively more emancipated, aware of their rights and thus willing to take action. Although these groups could not prevent women from engaging in extra income-generating activities, as demonstrated by the non-significant community empowerment coefficient associated with self-employment, they nevertheless assisted women, who were in the most precarious conditions, by sharing money and other resources and giving them the means to elude the worst types of work. In the following section, I will attempt to further my understanding of this and other aspects, which are too complex to interpret by using quantitative data only.

Table 9. Binomial Model of Labour Supply (marginal probability effects), 2003 KDHS

Explanatory Variables (Individual, Household and Community variables)		*Dependent Variable* **WORKING** Proportion of women (aged 15-49) engaged in some form of work, aside housework
INDIVIDUAL	**EMPOWERMENT**	- 0.020 (0.015)
	AGE	0.096 *** (0.006)
	AGE-SQUARED	- 0.001 *** (0.0001)
	EDUCATIONAL LEVEL	0.030 ** (0.012)
	MARITAL STATUS	- 0.040 ** (0.019)
	SONS	- 0.001 (0.006)
	DAUGHTERS	- 0.021 *** (0.008)
HOUSEHOLD	**HOUSEHOLD HEAD**	0.068 *** (0.020)
	HOUSEHOLD SIZE	- 0.007 ** (0.004)
	URBAN / RURAL	- 0.002 (0.029)
	QUINTILE 2	0.001 (0.027)
	QUINTILE 3	0.018 (0.029)
	QUINTILE 4	- 0.036 (0.031)
	QUINTILE TOP	- 0.005 (0.040)
COMMUNITY	**EMPOWERMENT** LEVEL AMONG LOCAL WOMEN	- 0.13 * (0.080)
	RELIGION MUSLIM/CHRISTIAN PREVALENCE	- 0.362 *** (0.045)
	ELECTRICITY SUPPLY IN LOCAL AREA	0.034 (0.049)
	HEALTH CONDITIONS OF LOCAL WOMEN	0.606 *** (0.209)

Number of Observations 8195
Pseudo R2 0.139
Prob > chi2 0.000
Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

Table 10. Binomial Model of Labour Supply (marginal probability effects), 2009 KDHS

Explanatory Variables (Individual, Household and Community variables)		*Dependent Variable* **WORKING** Proportion of women (aged 15-49) engaged in some form of work, aside housework
INDIVIDUAL	**EMPOWERMENT**	- 0.021 (0.015)
	AGE	0.109 *** (0.006)
	AGE-SQUARED	- 0.001 *** (0.0001)
	EDUCATIONAL LEVEL	0.036 *** (0.013)
	MARITAL STATUS	- 0.054 *** (0.019)
	SONS	- 0.005 (0.007)
	DAUGHTERS	- 0.010 (0.007)
HOUSEHOLD	**HOUSEHOLD HEAD**	0.037 ** (0.019)
	HOUSEHOLD SIZE	- 0.014 ** (0.004)
	URBAN / RURAL	- 0.012 (0.034)
	QUINTILE 2	0.077 *** (0.027)
	QUINTILE 3	0.099 *** (0.027)
	QUINTILE 4	0.107 *** (0.027)
	QUINTILE TOP	0.157 *** (0.034)
COMMUNITY	**EMPOWERMENT** LEVEL AMONG LOCAL WOMEN	- 0.070 (0.057)
	RELIGION MUSLIM/CHRISTIAN PREVALENCE	- 0.355 *** (0.040)
	ELECTRICITY SUPPLY IN LOCAL AREA	- 0.079 * (0.045)
	HEALTH CONDITIONS OF LOCAL WOMEN	0.562 *** (0.163)

Number of Observations 8444
Pseudo R2 0.180
Prob > chi2 0.000
Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

Table 11. Multinomial Model of Occupational Choice, 2003 KDHS

		Dependent Variables		
Explanatory Variables (Individual, Household and Community)		**UNPAID WORK** Non-paid or poorly paid jobs	**PERMANENT JOB** Relatively stable year-long jobs	**SELF EMPLOYED** Urban and rural self-employment
INDIVIDUAL	**EMPOWERMENT**	-0.193 ** (0.109)	0.120 (0.080)	-0.160 ** (0.068)
	AGE	0.225 *** (0.039)	0.332 *** (0.035)	0.405 *** (0.027)
	AGE-SQUARED	-0.003 *** (0.001)	-0.004 ***(0.001)	-0.005 *** (0.001)
	EDUCATIONAL LEVEL	-0.175 ** (0.085)	0.389 *** (0.066)	0.232 (0.054)
	MARITAL STATUS	0.229 ** (0.113)	-0.537 ***(0.098)	0.457 *** (0.084)
	SONS	0.019 (0.040)	-0.149 ***(0.048)	0.001 (0.032)
	DAUGHTERS	- 0.012 (0.046)	-0.130 ***(0.047)	-0.068 ** (0.036)
HOUSEHOLD	**HOUSEHOLD HEAD**	0.105 (0.132)	0.273 ** (0.125)	0.308 *** (0.091)
	HOUSEHOLD SIZE	-0.013 (0.023)	-0.009 (0.021)	-0.051 *** (0.020)
	URBAN / RURAL	0.164 (0.229)	-0.259 (0.167)	0.118 (0.138)
	QUINTILE 2	0.056 (0.156)	-0.452 ** (0.215)	0.240 * (0.054)
	QUINTILE 3	0.174 (0.169)	0.032 (0.206)	0.322 ** (0.139)
	QUINTILE 4	-0.085 (0.186)	-0.124 (0.204)	-0.044 (0.147)
	QUINTILE TOP	- 0.606 ** (0.269)	0.854 ***(0.252)	-0.059 (0.194)
COMMUNITY	**EMPOWERMENT** LEVEL LOCAL WOMEN	-0.88 * (0.547)	0.113 (0.374)	-0.696 * (0.397)
	RELIGION MUSL/CHRIST PREVALENCE	-1.700 *** (0.257)	-1.166 ***(0.272)	-1.337 ***(0.224)
	ELECTRICITY SUPPLY IN LOCAL AREA	-0.737 ** (0.390)	0.444 ** (0.242)	-0.358 (0.243)
	HEALTH CONDITIONS LOCAL WOMEN	3.824 * (1.324)	1.468 (1.160)	1.289 (0.971)

Number of Observations 8195
Pseudo R2 0.146
Prob > chi2 0.000
Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

Table 12. Multinomial Model of Occupational Choice, 2009 KDHS

Explanatory Variables (Individual, Household and Community)		*Dependent Variables*: **UNPAID WORK** Non-paid or poorly paid jobs	**PERMANENT JOB** Relatively stable year-long jobs	**SELF EMPLOYED** Urban and rural self-employment
INDIVIDUAL	**EMPOWERMENT**	-0.099 (0.090)	-0.046 (0.096)	0.013 (0.069)
	AGE	0.149 *** (0.033)	0.525 *** (0.033)	0.466***(0.028)
	AGE-SQUARED	-0.002***(0.001)	-0.007 *** (0.001)	-0.006***(0.001)
	EDUCATIONAL LEVEL	0.107 (0.079)	0.439 *** (0.069)	-0.166***(0.060)
	MARITAL STATUS	0.445 *** (0.105)	-0.589 *** (0.103)	0.275 ***(0.089)
	SONS	0.035 (0.041)	-0.159 *** (0.046)	-0.027 (0.032)
	DAUGHTERS	0.016 (0.036)	-0.197 *** (0.052)	-0.044 (0.033)
HOUSEHOLD	**HOUSEHOLD HEAD**	0.232 ** (0.102)	0.195 * (0.116)	0.201 *** (0.086)
	HOUSEHOLD SIZE	-0.065 *** (0.033)	-0.036 * (0.021)	-0.029 (0.019)
	URBAN / RURAL	-0.595** (0.255)	-0.213 (0.163)	0.091 (0.168)
	QUINTILE 2	0.227 * (0.136)	0.092 (0.202)	0.492 *** (0.136)
	QUINTILE 3	0.347 ** (0.147)	0.209 (0.209)	0.652 *** (0.143)
	QUINTILE 4	0.148 (0.165)	0.591*** (0.203)	0.726 *** (0.156)
	QUINTILE TOP	-0.044 (0.269)	1.285 ***(0.246)	1.073 *** (0.191)
COMMUNITY	**EMPOWERMENT** LEVEL LOCAL WOMEN	-1.289 *** (0.389)	0.116 (0.290)	-0.218 (0.283)
	RELIGION MUSL/CHRIST PREVALENCE	-2.225 *** (0.389)	-1.036***(0.260)	-1.062 *** (0.192)
	ELECTRICITY SUPPLY IN LOCAL AREA	-0.817 ** (0.422)	0.184 (0.210)	-0.699 *** (0.218)
	HEALTH CONDITIONS LOCAL WOMEN	2.427 *** (0.980)	1.569 * (0.879)	3.109 *** (0.745)

Number of Observations 8444
Pseudo R2 0.165
Prob > chi2 0.000
Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Cluster-Robust Standard Errors in brackets

Qualitative Analysis

The results of my quantitative analysis leave many important questions unanswered, mainly because of a lack of information on women's time use and labour conditions, but also because of analytical shortages typical of any quantitative study, including the impossibility to elaborate on the meaning of the short responses provided by the interviewees. Although I was able to observe significant changes occurred in the labour supply and job choice of Kenyan women, my empirical estimations were not capable to account for women's personal perceptions and feelings concerning the dramatic transformations and resulting adjustments brought into their daily lives by a compounded economic shock. Therefore, it seems beneficial to enrich my research by making use of qualitative data as well, in an attempt to overcome some of the limitations related to quantitative data and add crucial information to my analysis. I am presenting in this section of the paper some of the findings obtained during the first round of a qualitative research study, undertaken in Kenya in March 2009, which was coordinated by the Institute of Development Studies (IDS) and sponsored by the Overseas Development Institute (ODI). The Kenyan study was part of a broad project designed as a rapid, real-time assessment of the economic and social dimensions of the food, fuel and financial crises in five poor developing countries, which included also Bangladesh, Indonesia, Jamaica and Zambia. The qualitative approach of the study was aimed at listening to 'the real people behind the big statistics on the impact' of the downturn, in order to better understand both the processes and the channels through which crisis-driven transformations affected people's livelihood and welfare (Hossain, 2009). For my paper, I was granted access to the original notes and interview transcriptions made by researchers in the field. This helped me greatly to single out the most interesting facts concerning women's conditions and gender relations, with a specific focus on employment issues, which are at the centre of my analysis.

In Kenya, the two sites chosen for the qualitative study were Mukuru, an urban settlement in the Makadara Constituency of Nairobi, and Lango Baya, a rural area in the Malindi District of Kenya's Coastal province. Mukuru is the largest slum in Nairobi, with an estimated population of 560 thousand people, the majority of which is classified by the Kenyan government as living in poverty. Lango Baya has a smaller population of about 16 thousand people, among which poverty, malnutrition and high illiteracy are extremely widespread. Changes in economic conditions and social relations, caused by the impact of multiple crises, were recorded in the two populations, with many similarities and just few dissimilarities in the intensity of the shocks and the type of household coping strategies. In Mukuru, the prices for food, rent, transport and other services soared in 2008, whereas small business and industrial activities declined sharply leading to high job insecurity. Residents of the slum township were also affected by rising fuel cost, which impacted many spheres of their daily lives, including cooking and lighting. In Lango Baya, economic conditions worsened due to a combination of an environmental crisis (long drought) and a food crisis, which led to a rise in the price of basic commodities in the shops, the market places and/or the local farms. In addition, the broader area in which Lango Baya is located was negatively affected by declining revenues in the tourist sector, which is an important source of income in the Coastal region. Women appear to have been hit particularly hard in both the urban and the rural setting, especially in terms of reductions in food consumption and increases in their intra- and extra-household workload. At the same time, the atmosphere of crisis in women's local communities was reported to have impacted gender relations, thus generating tension between men and women over household and societal gender roles.

As extensively described in the final report of the qualitative study, the average daily activities of a typical woman in Mukuru changed radically between 2007 and 2009, in consequence of the household coping strategies. At the beginning of 2009, women were found to wake up much earlier than in 2007, prepare breakfast only for the youngest children in the household and then leave the house, before everyone else, to spend most of their day seeking any available type of job, such as washing clothes, baby sitting, sawing and cleaning, or running their own little business until late at night, ranging from hair dressing, petty trading and selling food, pottery and scrap metal. Most of the interviews and focus group discussions undertaken in Mukuru, clearly show that women were obliged to seek new means of income to support their families and make up for other household members' loss of income, including their husbands. However, women were also expected to continue to carry out domestic tasks and look after the children, while an increasing number of unemployed men spent their time drinking in the village. These findings seem to confirm the results of my quantitative analysis, highlighting that women were pushed by the crisis to engage in activities, like petty business and menial jobs, which they would have normally avoided. In addition, many women who were doing household work full time before the crisis, ended up opening their own food stall on the streets of Mukuru, which also seems to substantiate my empirical findings showing a change in the determinants of self-employment patterns among women. In fact, under such circumstances, the decision of working outside the household was not the result of a free or even empowered choice made by the woman. On the contrary, it simply was a necessary expedient, as claimed by 48 year old Sarah Mwangi, one of the women interviewed in Mukuru, who started looking for extra sources of income because of reduced and unreliable household income and pointed out that 'life was generally much harder'. Another interviewee, Susan Nduku, argued that women were the worst affected by the crisis, since 'much was expected from them' and their time use patterns were negatively impacted:

> *We have to balance between taking care of children, doing household chores and working. We are most of the times overworked so as to provide for the ever increasing needs of the family.* (Susan Nduku)

In Lango Baya, the proportion of women working as casual labourers in other people's farms increased from 2007 to 2009 and some women also began poaching wild animals for food. Some of the male respondents argued that, because of the crisis, women started to 'engage in hard jobs that are not woman oriented like quarrying business for a wage'. Some women were also hired by NGOs, charities and other institutions that set up projects to help the local population. However, although the Catholic Church in the area provided food for work, the majority of the respondents lamented that the work was too strenuous and the food too little. Sidi Karisa, one of the participants of a Focus Group Discussion (FGD) in Malanga, a sub-location of Lango Baya, explained:

> *The Church normally directs us to carry out very difficult tasks, such as digging trenches and clearing bushes on the roadsides. The Catholic Church gives around 2 kg of food for the work done and this may be given after a month.* (Sidi Karisa)

During a different FGD, held in Mukuru with 33 women from the neighbourhood, the participants talked about the severe hardship 'brought about by the food and fuel crisis' and described several coping mechanisms implemented by them and their households.[10] Also in this case, the majority of women said that they decided to engage in a number of extra income generating activities, with 'looking for casual jobs' and 'venturing into small scale business' reported as the two most common coping strategies. This wide range of activities included 'providing cleaning services and baby care services at a fee' as well as 'selling vegetables, tomatoes and ready-made food'. Beatrice Shighadi, one of the 10 participants in a similar focus group in Mukuru, pointed out another interesting issue related to this crisis-driven change, arguing that the increase in the number of women engaging in casual jobs worsened the overall situation in the market:

> *Everyone is complaining of lack of money. Therefore even getting work such as washing clothes is very difficult. For those of us in business, we have been forced to reduce our profit margins for two reasons: firstly, to be able to compete with others with similar businesses in the slum and secondly, to encourage clients to buy. We also sell in smaller packages/quantities than before so that more people can afford.* (Beatrice Shighadi)

In this context of high competition amongst the poor and deteriorating living conditions, with most households struggling to provide more than one meal per day, social relations became more tense within communities. This aspect, which could not be captured by my quantitative analysis, clearly emerges from the

[10] There was a reduction in the number of meals per day, usually three in 2007 and only one (supper) in 2009, and in the variety of food per meal, mainly ugali and vegetables.

interviews undertaken in both Mukuru and Lango Baya. Similarly, the level of perceived insecurity within the community was reported to be on the rise in Lango Baya, where cattle rustling or theft of food from the farms became common place. At the same time, there was a reported rise in anti-social behaviour and crime in Mukuru, and the relationships amongst neighbours were said to be deteriorating as 'each tended to mind his/her own business'. These destructive behaviours may have a disproportionately strong impact on women's comprehensive welfare, since social ties and interpersonal relationships are often impacted along gender lines. Although my quantitative analysis of female labour supply falls short of capturing this element, the qualitative information at my disposal seems to confirm the validity of these considerations. Many women complained about men and 'quarrels, tension and fights' were reported to be on the rise. Asked about the issue, Jane Kahure said:

> *Some of us have learnt how to discipline those lazy men that do not want to work. If they are not home when food is being served at home, we do not leave any food for them so they sleep hungry. Similarly, if they are not awake by the time we are serving breakfast, we eat it all with our children since usually, there's never much of it.* (Jane Kahure)

At the same time, an increasing number of men were reported to have left their houses to look for jobs, in 2008, and many of them never returned. As an explanation for this phenomenon, two different reasons were put forward by the respondents. On the one hand, men were said to feel neglected by their wives, who spent less time with the family and more time working; on the other hand, given their traditional role as bread winner, they also felt under tension every day 'when is approaching evening and they have nothing to take back to the family'. When men migrate or simply abandon their families, women become the household head and the burden they are expected to bear expands even more. The results of my quantitative analysis have shown that women who are heads of their household are more likely to be engaged in uncertain and undesirable jobs. Eunice Oyugi, one of the Kenyan wives interviewed in the qualitative study, said that they were forced to learn how to deal with their stressed husbands:

The men we have nowadays are the kind that does not want to be asked about money and paying the bills. If you make the mistake of doing that, they take off. We have come to learn that if you want to live well with a man, don't ask him for money. (Eunice Oyugi)

Two other interesting aspects, which came into view during the qualitative study, would have been impossible to single out relying on the quantitative analysis only. The first one is another dramatic negative consequence of the crisis, namely a rise in the number of teenage girls and young women who went into prostitution or engaged in some form of sex-for-food. Conversely, the second interesting aspect has a positive connotation and refers to the decision taken by many women to form solidarity groups as a coping mechanism, with the aim of helping each other. In these so called 'merry-go-round' groups, women buy food collectively, using the money contributed by each member, and periodically share out the food among all of them. Women in Mukuru listed this type of solidarity groups as the most supportive and helpful ones and also in Lango Baya several women were reported to have set up saving groups. Florence Nyiro, a woman from Lango Baya, explained the role and importance of these groups:

My income is mainly from petty trading. I am a member of a group merry-go-round, where I always receive some income. As a group, we lend to each member small amounts for small business like preparing doughnuts which we sell for additional incomes for our needs.

In brief, the most interesting insights emerging from qualitative information both strengthen and complement the quantitative findings of my analysis. In the context of households' coping strategies, the decision taken by many women to engage in a series of menial jobs is the most apparent adaptation to the income loss caused by the shocks. Petty trading, small street businesses or even prostitution appear to be the only solutions available to the most vulnerable women, who are thus obliged to combine domestic and caring tasks with all sorts of activities. Far from benefitting from this new condition, the women interviewed in the qualitative study have clearly stated that their well-being declined and their time stress increased.

A Multi-Method Approach

The combination of quantitative and qualitative analysis has been applied to social science research for many years and the benefits of combining the two research methods has increasingly been recognised (Bamberg, 2000). Although there are still advocates of a strong paradigmatic view, according to which quantitative and qualitative research methodologies are mutually exclusive epistemological positions, there is a growing literature on the potentialities stemming from using both approaches in the same study (Niglas, 2000; Murray, 2003; Creswell, 2009). In this paper, I have decided to take advantage of different existing sources of information on the impact of the multiple crises that affected Kenya from 2007 to 2009, deliberately choosing a quantitative dataset and a qualitative study, in order to compare their findings and enhance the results of my research. Especially when the focus is placed on gender issues underlying social and economic relationships in society, I believe that integrating the two approaches is not only useful, but also needed. As a consequence, I have used some key indications on the impact of the crisis emerging from the interviews undertaken during the IDS qualitative study to inform my econometric analysis and better interpret its large range of results. Although the literature on gender-specific impacts of previous crises, in developing countries, provided me with an idea of what to expect from the DHS quantitative data collected in Kenya, it was only by reading Kenyan women's perceptions and personal feelings about the effects of the economic downturn on their daily lives that I understood what that DHS dataset was showing me.

Several authors who contributed to the debate on different methodological paradigms (Denzin, 1978; Jick, 1979; Creswell, 2009) pointed out that quantitative and qualitative approaches have both weaknesses and strengths. Therefore, one of the main purposes of combining the two methods is precisely to overcome the weaknesses of any single approach to answer a complex research question (Bryman, 1992). As emphatically suggested by Trow (1957), social science researchers should 'get on with the business of attacking our problems with the widest array of conceptual and methodological tools that we possess and they demand'. On the one hand, quantitative research aims at ensuring objectivity and generalisability, through the use of standardised questionnaires, randomly selected sample populations and statistical analyses. On the other hand, qualitative methods used in development research are designed to understand the meanings people assign to social phenomena, through a cultural immersion in the local context and a direct interaction with the people under study (Weinreich, 1996). In my research, I attempted to identify a visible impact of the widespread economic shock on the large female population in Kenya, and to do so, reliable quantitative measures were most appropriate. However, given the difficulty to quantify gender differentiated effects of economic shocks, which arise through a number of mechanisms and channels, it was essential to use also qualitative information both to provide the context in which these crisis-induced changes occurred and to fully comprehend women's reactions to them (Bastia, 2000; Järviluoma, Vilkko and Moisala, 2003; Hampel-Milagrosa, 2008).

While a mixed-model study would have combined the quantitative and qualitative approaches in all the different phases of the research process (Tashakkori and Teddlie, 1998), my multi-method design kept the two perspectives independent from each other until the interpretation of the results. Adopting Denzin's (1978) definition, it is possible to argue that I have used a data and a methodological triangulation, drawing from two different data sources and theoretical viewpoints with the aim of testing a single hypothesis. In fact, my econometric analysis tested the hypothesis that women were negatively affected by the economic crisis, showing that they were increasingly engaged in undesirable jobs, regardless of their degree of emancipation. At the same time, my qualitative analysis revealed that most women interviewed felt under pressure to find extra income sources in a gender-biased labour market, while continuing to perform all domestic tasks, thus being overworked. The combined interpretation of these two sets of findings enabled me to argue that the nationwide changes in female labour supply and occupational choice were likely to be the result of unfair gender constraints, which led to a disproportionate deterioration of women's general welfare, in the crisis period.

In addition, these qualitative insights can clearly contribute to the development of future quantitative instruments, since they make evident the lack of information on crucial issues in the DHS questionnaires, including women's time-use patterns. Apart from furthering my understanding of the subject under examination, this multi-method approach has also helped me to delineate and validate a better way to undertake the examination itself. In particular, when addressing crisis-related gender issues, it seems to be necessary to take into account measurable factors, such as the female labour market dynamics, as well as non-measurable factors, such as traditional norms and the relationship between men and women, in all spheres of society. As a result, there exists a strong case for applying my combined research approach more broadly, in future development and gender studies projects. Although using two completely separate datasets allowed me to obtain valuable results, the elaboration of an *ad hoc* multi-method framework, specifically collecting quantitative and qualitative information for a single research project, would give rise to an even more detailed and exhaustive gender analysis. These methodological implications of my research are of particular interest and should encourage an extensive debate on the potential of combining quantitative and qualitative perspectives in the interdisciplinary field of gender studies, leaving behind any academic and methodological prejudice.

Conclusions

In this paper I have investigated the impact on women of the multiple shock that hit Kenya from 2007 to 2009. Through the use of both quantitative and qualitative data, I have focused on the effects of the crisis on women's labour activities and conditions. The results of my combined analysis highlight that women were forced to engage in undesirable jobs, aside from their housework, in order to make up for the loss of income caused by the economic downturn. As a result, women's time burden and general welfare was negatively affected. My quantitative analysis shows that the proportion of Kenyan women engaged in unpaid or poorly paid jobs increased during the crisis, regardless of their level of empowerment, which I calculated by using a set of empowerment indicators included in the Kenya DHS datasets. In particular, while before the crisis relatively more empowered women appeared to manage to avoid the most undesirable jobs, in the wake of the multiple shock a higher degree of empowerment was no more sufficient for women to avoid those activities. Due to sheer necessity, many Kenyan women accepted to carry out any available job.

The findings emerging from my qualitative analysis seem to confirm these results. The great majority of the women interviewed in the IDS qualitative study, which I used in this paper, pointed out that they were obliged to seek extra means of income to support their families, often engaging in activities that they would have normally avoided. Due to the situation of severe crisis, the decision taken by these women of working outside the household was a constrained choice that 'made their lives harder', as claimed by one of the interviewees, without having any noticeable positive consequence in terms of personal emancipation. There were also reports of women having recourse to prostitution or other forms of sex-for-food, which highlight the dramatic nature of the crisis. While these crisis-driven changes affected women's presence in the labour market, both in the rural and urban informal sector, their role within the household did not change, since rooted gender norms compelled them to remain the only ones in charge of housework, child care and other intrahousehold tasks. In this regard, the women interviewed in the IDS study complained that they were 'overworked' most of the times, because 'much was expected from them'. Hence, my qualitative analysis seems to corroborate a key aspect that I could only hypothesize from the results of my quantitative analysis, the fact that one of the most negative consequences of the changes in female labour supply and occupational choice was a deterioration of women's time use patterns.

Combining quantitative and qualitative data has helped me to attain a better understanding of a number of issues related to the impact of the crisis. While my econometric analysis allowed me to single out some crucial trends and changes in Kenya's female labour force participation, triggered by the occurrence of multiple shocks, my qualitative investigation enabled me to take into account women's personal perceptions and feelings concerning these crisis-driven transformations and resulting coping strategies. On the one hand, the insights emerging from the qualitative study were useful to identify which impacts were considered the most dramatic for the interviewed women, in the context of their local communities. On the other hand, this information was of great importance to elaborate a more accurate interpretation of the figures produced through my quantitative analysis and assess the potential prevalence of identical or comparable issues also at the national level. At the same time, the qualitative analysis highlighted the lack of information in the DHS datasets on issues which were regarded as crucial by the interviewees, including time use, housework, women's solidarity and support groups as well as men's behaviour.

In brief, my conclusions give rise to both policy and research recommendations. Firstly, any recovery interventions after economic shocks and crises must be gender-specific in order to take into consideration gender inequalities in society. This is true for Kenya, as discussed in this paper, but also for any other country where a structural gender bias places women in a position of vulnerability. Secondly, the combination of quantitative and qualitative analysis appears to improve the quality and reliability of research results. The synergy between these two research methodologies helps to overcome analytical shortages typical of each of the two approaches. Finally, additional research is needed to investigate women's crisis-induced changing capacities and vulnerabilities, especially in relation to their time burdens and personal well-being.

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Chapter 4

The Impact of Migration and Remittances on Labour Allocation, in Indonesia

This papers aims at investigating the impact of migration and remittances on the labour allocation of Indonesian men and women, in migrants' households of origin. The empirical analysis, which employs a Tobit model for panel data, is based on the two latest rounds of the Indonesia Family Life Survey (IFLS 2000 and IFLS 2007). I separately investigate the impacts of internal as well as international migration and remittance flows on the hours allocated by men and women to off-farm, farm and unpaid family work. The results of this gender-specific analysis indicate that the prevailing overall impact is a reduction in the number of hours allocated to the main activity. However, my results also suggest that internal and international migration and remittances tend to have different effects depending on the area of work and the gender of the recipient.

Key words: *Migration, Remittances, Gender, Labour, Indonesia*

Introduction

Migration and remittances affect several social and economic areas at both the macro and micro level, with the significance and magnitude of internal and international flows continuing to increase in the developing world. This paper focuses on the specific impacts that migration and remittance flows can have on the labour allocation of men and women in migrants' households of origin. I am using Indonesia as a case study for my research since migration is a crucial phenomenon for this country, both within its own borders and towards other developing as well as developed countries. Besides, the social status and economic role of Indonesian women in this predominantly Muslim society is of particular interest for my investigation of migration's impacts on gender-specific labour dynamics. In fact, this study adopts a gender sensitive perspective by examining separately men's and women's labour allocation and by including in the analysis farm and unpaid family work, two key sectors in which women's contribution is most significant and often hidden. Whilst a large body of literature has been dedicated to the effects of migration and remittances on adults' and children's labour supply (Adams, 2011; Acosta, 2011), fewer studies have investigated the impacts on other occupational choices, including rural and informal activities. My paper attempts to shed more light on this specific topic.

A number of authors have observed diverging impacts on labour supply according to the gender of the remittance recipient, showing that women tend to reduce their labour force participation more easily than men, in consequence of the income effect produced by remittances (Acosta, 2006). However, when the research focus is not limited to the hours worked outside of the house, evidence seems to show that this effect is rebalanced through a higher degree of intra-household specialisation, with women spending their additional time in home production (Hanson, 2009). Furthermore, the extensive literature on gender issues clearly point out that women, especially in the developing world, are usually overloaded with work, since they are solely responsible for domestic and caring tasks whilst performing several other labour activities (Beneria, 2003). Therefore, a reduction in the number of hours allocated by women to their main activity can be interpreted as a positive result stemming from migration and remittances, instead of being described as a disincentive effect characterised by moral hazard problems, as some authors have done in the past (Fullenkamp et al., 2005). On the one hand, my results indicate that the prevailing effect of having a migrant member in the household and receiving remittances is a decrease in the hours of work performed by non-migrating family members; on the other hand, my gender analysis of different work areas enables me to obtain a more comprehensive understanding of the welfare outcome of such effects.

In particular, I am assessing the potential association between migration and remittances and the time spent by men and women on off-farm, farm and unpaid family work, as their main activity. My panel analysis makes use of the two most recent rounds of the Indonesia Family Life Survey (IFLS), which is a longitudinal multipurpose survey containing information on both migration flows and labour dynamics. Although it would have been interesting to look at the variations in the hours spent by household members performing all their daily activities, thus examining the changes occurring in their time-use patterns, the IFLS provides information only on the hours allocated to the activity that consumes most time. Hence, I am undertaking a Tobit model for panel data of the impact of migration and remittances on household members' labour allocation across the three types of main activities mentioned above. I am employing the panel Tobit methodology in accordance with most literature on the subject (Kalwij and Gregory, 2005; Islam, 2007). On the one hand, it is best suited to estimating my dependent variables censored at zero hours worked; on the other hand, it assists me in dealing with some of the endogeneity issues commonly related to the analysis of migration, controlling for unobservable time-invariant individual random effects.

Finally, by focusing on both internal and international migrants and remittance inflows, I intend to emphasise the heterogeneous nature of migration, which comprises national, regional and global patterns. Although most studies tend to investigate only the impacts of overseas migration, given its political relevance and its effects on developing countries' balance of payments, internal migration plays a critical role in shaping economic and social development. Besides, as shown by my analysis, internal and international flows can have very different impacts on labour allocation, depending on gender and work sector dynamics.

Conceptual Framework

The impact of having a migrant member in the household and of receiving remittances have been extensively analysed over the last few years, given the increasing volume of internal and international migration, mostly originating in developing countries. This paper focuses on the impacts of migration and remittances on the gender-specific labour allocation in sending households, with the aim of expanding the relatively small literature produced so far on this specific topic. A large body of literature has been dedicated to a similar issue, namely the effects of migration on labour supply and employment amongst people left behind by migrants. By focusing on three different work areas, my research attempts to broaden the spectrum of the investigation, including in the analysis off-farm work as well as unpaid family work and farm work. In fact, the gender perspective of my analysis requires unpaid domestic and farm activities to be accounted for, since they represent work areas in which women play a most prominent role, contributing to the economies of developing countries and to the livelihoods of their households (Blackden and Wodon, 2006).

Over the last two decades, several studies have shown that household members receiving remittances tend to increase their leisure time, reducing their labour supply due to this source of non-labour income (Funkhouser, 1992; Rodriguez and Tiongson, 2001). In particular, the neo-classical model of labour and leisure choice claims that remittances' income effect increases recipients' reservation wages and reduces their inclination to look for employment as well as the number of hours worked (Killingsworth, 1983). For instance, Airola (2008) observed that remittance inflows negatively affect weekly labour hours of recipient household heads in Mexico. More recently, Kim (2007) has found that remittance income leads recipients to move out of the labour force in Jamaica. However, other authors have stressed the importance of a concurrent disruptive effect of emigration (Amuedo-Dorantes and Pozo, 2006), which produces the opposite effect to that of remittances. In fact, the income effect of remittances can be neutralised or even reversed by the reduction in household income due to the departure of the migrant. As a result, remittance receiving individuals may have to increase their working hours to compensate for the labour shortage generated by their household's migrant members (Hanson, 2007). In addition, by easing liquidity constraints remittance inflows can encourage more investments, especially in the farm sector, thus causing an increase in recipients' labour hours spent on farm activity (Damon, 2010). Although an increase in remittances can indeed lead to a culture of dependency and idleness, evidence shows that its impact greatly depends on how remittances are managed and used (Kapur, 2005; Heilmann, 2006). By looking at the impact of both losing one or more household members to migration and receiving remittances, my analysis aims to distinguish between the two effects and determine which one is prevailing. Besides, the gender perspective of my research is based on the hypothesis, confirmed by a growing body of evidence, that labour decisions within recipient households cannot be appreciated at aggregate levels and need to be analysed at the individual level, given the differences in responses between the two sexes.

As clearly pointed out by Hanson (2007), in migrant families there is often a shift of responsibilities among the members left behind and the labour specialisation within the household can intensify along gender lines. In this sense, looking at the changes in the number of hours spent by remittance recipients in different types of work, indicated in my analysis as their main activity, can reveal a more comprehensive story than focusing on their employment status only (Görlich, Mahmoud and Trebesch, 2007). Besides, female and male labour behaviour is influenced in a different way by migration and ignoring this gender dimension distorts the analysis and leads to biased results (Baden, 1997). Amuedo-Dorantes and Pozo (2006) found that remittance female recipients reduce their labour effort more than men in Mexico and Hanson's findings in the same country suggest that the induced work-shifting leads women to decrease the time spent working outside of the household (Hanson, 2007). Since working women in developing countries often continue to be in charge of a large range of domestic tasks and family agricultural work in rural areas, a reduction of off-farm labour could help ease their overall work burden (El Jack, 2003).[1] Hence,

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[1] At the same time, traditional gender roles may be positively transformed by migration if women are given more authority and greater decision-making power within the household, as a result of their partners' absence (Jolly and Reeves, 2005).

the impact of migration and remittances on labour decisions can differ in intensity and direction, depending on the gender and the activity of the recipient.

Although the first to analyse the effects of remittances on receiving households' labour supply decisions were Starke and Bloom (1985) in their New Economics of Labour Migration, Funkhauser (1992) was one of the first authors to adopt a more gender-specific approach to the issue. Funkhauser undertook an empirical analysis of the participation in wage employment and self-employment of men and women in Nicaragua, showing that remittances reduce wage labour force participation for women but increase self-employment for men. Funkhauser ascribed this increase in self-employment activity to entrepreneurial investments facilitated by remittances, which is the same indication obtained fifteen years later by Woodruff and Zenteno (2007) in Mexico. In a more recent study on El Salvador, Acosta (2006) found a noticeable gender difference in the impact of remittances, showing that female labour supply decreases, whilst male labour supply increases as a result of remittance income. Likewise, Rodriguez and Tiongson (2001) found that in Manila women are significantly more likely than men to reduce their labour force participation amongst households with migrant members. Recent empirical evidence seems to confirm this pattern also in Nepal (Lokshin et al., 2010), Egypt (Binzel and Assaad, 2011) and China (Mu and de Walle, 2011), where women were found to reduce the labour supply as a result of the migration of male members from their households. As mentioned, gender inequality in household power may also be affected by migration, since male migration could leave women at home with higher decision-making power on the allocation of household economic resources (Chen, 2006). However, most gender literature stresses that the absence of male household members leaves women with a greater burden of responsibility, without necessarily triggering a shift in bargaining power within the household (Kabeer, 1997). Besides, when it comes to female labour outcomes, the effects of remittances are shaped by a large range of household characteristics, including its cultural norms, which contribute to determine women's labour decisions (Pissarides et al., 2005).

In order to thoroughly understand these distinct female labour choices, unpaid work and farm work need to be included into the analysis. In fact, especially in the developing world, women provision of unpaid family work, either within the domestic walls or on the family farm, is crucial for the economy of the household (Hill, 1989; Blackden and Wodon, 2006). Therefore, the labour force composition in developing countries have to take into account the gender-specific importance of unpaid work (Schultz, 1990). This is why my gender analysis distinguishes between off-farm, farm and unpaid work, following the example of other recent studies on the impact of migration and remittances that have disaggregated male and female labour choices along formal and informal employment patterns (Amuedo-Dorantes and Pozo, 2006; Mendola and Carletto, 2009).

This examination of the impacts of migration and remittances on the labour allocation patterns of men and women left behind by migrants in Indonesia is also intended to shed light on a fundamental non-income dimension of well-being, in migrants' households of origin. In fact, a growing literature has recognised time use as a crucial factor affecting people's personal well-being (Hamermesh and Pfann, 2005; Blackden and Wodon, 2006; Offer and Schneider, 2011).[2] Especially when undertaking a gender analysis, this type of information is essential, since evidence shows that women are very often solely responsible for domestic duties, including housekeeping and caring tasks, and they also support their households by working on the family farm in rural areas (SOFA and Doss, 2011). This unpaid work, which is not counted in the System of National Accounts (SNA), beside being a key contribution that women make to the economy and to their families' livelihood, is also responsible for increasing women's time burden and overall time poverty (Blackden and Wodon, 2006). Examining the impact of migration and remittances on the gender-specific choice concerning the time spent in one of the three main activities help to uncover this contribution, which would otherwise be invisible, and to better understand women's workload.

In fact, whilst Becker's time allocation theory depicted household members as having the same utility function (Becker, 1965), subsequent formulations of this

[2] In this sense, by capturing not only the participation in the labour market but also the time allocated to family farm as well and domestic activities, my study of the allocation of labour hours across different types of activity also provides a more comprehensive measure of work.

theory have stressed the need to distinguish between work at home and leisure as a prerequisite to understand the allocation of time in household production (Gronau, 1977; Kimhi, 1994). More recent time allocation models are centred on the assumption that the household utility function must take into account each individual's specific time constraints, with the latter being conditional on a vector of characteristics including gender (Florkowski, 2000). The differentiation between women's and men's labour patterns is central to the understanding of total family working time, with women playing a dominant role in the reproduction economy, whilst also attending to market and farm activities (Blackden and Wodon, 2006). The analysis of this gendered division of labour within the household would allow to uncover women's work in the productive and reproductive domains and to reveal the unequal gender relations at the community and institutional levels (Agarwal, 2000). Nevertheless, most labour force survey data neglect time allocated to domestic and farm work, thus failing to capture the value of women's work and its importance for the well-being of family members (Chang, Dong, MacPhail 2010). As a consequence, many studies concerning labour supply and income generation do not take into consideration the goods and services provided by women, which include preparing food as well as caring for the children and the elderly (Elson, 1995; Beneria, 2003). Hence, if these unpaid activities are taken into due consideration, it is clear that women's work effort is much larger than what formal employment figures would suggest.

Finally, gender bias in the labour market and in wage income, together with non-economic factors, also explain differences in labour allocation to off-farm work (Folbre, 1994; Ilahi, 2000). Cultural and social norms are responsible for the rigidities that underpin the gender specific division of labour and for the low work status of most employed women in developing countries (Cagatay, 1998). This pervasive 'stickiness' in the substitutability between male and female labour reinforces the gender biased allocation of time (Kabeer, 1997). When women increase their market activities with no corresponding decrease in their non-market work, they are obliged to reduce their leisure time (Folbre, 1984; Beneria, 2003; Lawson, 2008). In brief, women are often engaged in undesirable market jobs and also overworked, due to the double-burden of unpaid activities.

The Case of Indonesia

Indonesia's migration flows have steadily increased since the 1970s, with labour migrants leaving their hometowns because of widespread poverty, a lack of employment opportunities, the development gap between rural and urban areas and wage differentials between Indonesia and destination countries. Since 1970 the Indonesian government has introduced a number of programmes, including the Interprovincial Labour Placement and the International Labour Placement programmes, with the aim of encouraging and managing the placement of both internal and international labour migrants. These transmigration programmes have facilitated internal migration, which in turn has changed the economic landscape and the ethnic composition of many regions in Indonesia's numerous islands (Elmhirst, 2000). At the same time, international migration has also increased, with 650,000 international migrants reportedly placed overseas through formal labour migration programmes in 2007 and hundreds thousands more Indonesians migrating abroad through informal channels (Nayyar, 1997; Lyons and Ford, 2007). Internal and international flows are also mutually reinforcing in certain Indonesian outer islands, like the Riau Islands for instance. These islands became transit zones where individuals move as internal migrants and then cross the border, thus turning into international migrants, due to the geographical proximity to neighbouring countries like Singapore and Malaysia (Lyons and Ford, 2007). However, despite the fluid nature of migration in these transit zones, national and international flows do have distinct characteristics and the two categories of migrants have different needs and impacts.

Given the considerable size of the country and its archipelago of over 18,000 islands, internal migration has always been a significant phenomenon in Indonesia. The main internal migration pattern involves poor people from rural villages moving into the informal urban sector, thus increasing the urban slum population, especially in the capital Jakarta (Hugo, 2002). The island of Java comprises around 60 percent of the total population of Indonesia and is the province from which most internal movements originate (Tirtosudarmo, 2009).[3]

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[3] As a result, the Javanese are the dominant ethnic group not only in Java, but also in other provinces of Indonesia, including Lampung, East Kalimantan, North Sumatra and South Sumatra.

At the same time, since Jakarta is the core economic centre of both Java and Indonesia as a whole, its urban sector attracts a substantial number of internal migrants, coming from poorer areas across the country and within Java itself (Lottum and Marks, 2012). Over the last two decades, these inter- and intra-provincial migratory flows have been increasingly led by labour market considerations rather than state-sponsored transmigration policies. As a result, the amount of internal remittances has also increased and represents a source of income for migrant's households. (Tirtosudarmo, 2009).

International migration is also very significant, with international remittances recorded at almost 7 billion US dollars, in 2009, and women representing the majority of overseas migrants (IOM, 2010). This feminization of migration is due to women increasingly being employed overseas as domestic workers as well as carers for children and the elderly. Indonesian overseas migrants tend to choose their destination according to these labour market needs but other determinants also play a role, with Saudi Arabia and Malaysia being by far the two main destination countries. On the one hand, Malaysia is appealing because of its geographical proximity to Indonesia, which lowers migration costs, but also because of similarities in language and culture between the two countries. On the other hand, Saudi Arabia has a rich middle-class and thus offers higher wages than most Southeast Asian countries Besides, Indonesian Muslims are attracted by the opportunity of undertaking the Hajj pilgrimage to the Saudi city of Mecca.

The fact that Indonesia is an Islamic society, with the largest Muslim population in the world, is one of the underlying factors of the high gender inequality in the country, which is driven by social and cultural factors (Arif et al., 2010). Gender discrimination is also reflected in the labour market, where women and girls face the range of gender issues discussed in my conceptual framework. In particular, most Indonesian women have fewer employment opportunities than their male counterparts and tend to be engaged in vulnerable, low-status jobs either in the informal sector or in the manufacturing sector (Suryahadi, 2010). They are exploited as cheap labour with no rights in urban areas and they are expected to contribute to family farm work in rural areas, whilst undertaking all domestic tasks at home. Hence, Indonesia is indeed a suitable case-study for my research.

Data and Descriptive Statistics

The data used in this paper come from the Indonesia Family Life Survey (IFLS),[4] which is an ongoing multipurpose longitudinal survey, consisting so far of four waves, with data having been collected in 1993 (IFLS1), 1997 (IFLS2), 2000 (IFLS3) and 2007 (IFLS4). Information was collected at the individual, household and community level on a large range of topics, including health, education, migration, work experience, farm activity, income, consumption and assets. My empirical analysis focuses on of the 2007 and 2000 waves, because of consistency constraints related to the definition of the variables of interest. In particular, the type of internal and international migrants captured in the first two IFLS rounds vary quite widely from those captured in the latest two rounds; similarly, a consistent definition of remittances could only be developed for the 2007 and 2000 data. Recent studies on the impacts of migration and remittances in Indonesia have also focused on the last two rounds of the IFLS, achieving significant results and proving the quality of data (Adams and Cuecuecha, 2010; Nguyen and Purnamasari, 2011). The sample used for my panel analysis covers a total of 13,108 individuals, who are members of 5,301 different households from 19 Indonesian provinces.

As far as migration and remittances are concerned, data is derived from the household level surveys, in which information is gathered on families with 'not co-resident' household members. There is a series of questions regarding the interviewee's parents, children and spouses who do not live in the household, including in which Indonesian province or foreign country they currently live and what kind of assistance, if any, they provide to their family of origin. In particular, the questionnaire asks whether, during the previous 12 months, the respondent or his/her spouse 'ever receive help from [the migrant] in the form of money, goods or services?' and a subsequent question asks the respondent to specify how much money he received, including the monetary value of food and other goods. This information provides a good estimate of the total amount of remittances received, which can then be distinguished between internal and

[4] The Indonesia Family Life Survey is jointly produced by RAND, the Survey Meter and the Center for Population and Policy Studies of the University of Gadjah Mada.

international remittance flows according to the migrant's destination. The fact that the question is specifically concerned with the assistance received by the respondents themselves, or their spouses, allows me to detect more clearly the direct effect of remittances on their working patterns.

Information on type of work and number of hours worked by female and male household members is derived from an extensive section of the questionnaire dedicated to the respondent's work experience. Although it would have been interesting to have a disaggregated list of all the activities performed during the day by each individual, the survey only focuses on the main activity carried out by the respondent during the week. Therefore, my analysis does not look into women's and men's time use patterns, but it is specifically concerned with their choice of main activity and the time they allocate to it. In particular, respondents are asked to indicate the 'job which consumes the most time', whilst related questions ask 'which category best describes the work that you do' and 'what is the approximate total number of hours you work per week'. These detailed information enables me to distinguish the main activities undertaken by the respondents into three broad categories, namely off-farm work, farm work and unpaid work. The latter is defined in the survey as 'unpaid family worker', thus referring mainly to the large range of domestic and caring tasks normally carried out by women. Off-farm work includes manufacturing, construction, finance and retail sectors, amongst others, whilst the farm work category encompasses agriculture, forestry, fishing and hunting and includes family farm work.

Finally, my analysis makes use of an extensive set of control variables, which account for the effects of individual and household characteristics. Individual level controls include age, religion, marital status and level of education of the respondents. Household level controls include number of household members and children under 15 and rural/urban location. I also use information on acres of land owned and operated (land owned minus land rented out plus land rented in) by the household, whether one of its members has received public subsidies or obtained credit and the number of motored vehicles owned as well as the total amount of non-labour income as proxies of household assets and wealth.

Table 1 shows the summary statistics of all dependent and explanatory variables of the panel analysis sample, for men (55.75% of sample) and women (44.25%):

Table 1. Summary statistics of all panel variables by gender

	Men				*Women*			
Variables	**Mean**	**Standard Dev.**	**Min**	**Max**	**Mean**	**Standard Dev.**	**Min**	**Max**
Hours of off-farm work	28.69	-27.99	0	168	25.17	-28.35	0	168
Hours of farm work	13.53	-21.56	0	168	9	-16.84	0	168
Hours of unpaid work	2.83	-11.3	0	133	8.69	-18.36	0	168
Total number of migrants	0.65	-1.2	0	22	0.75	-1.36	0	22
- Internal	0.61	-1.16	0	20	0.7	-1.32	0	20
- International	0.04	-0.26	0	5	0.05	-0.29	0	5
Logarithm of total remittances	8.44	-2.36	6.9	22.1	8.7	-2.61	6.9	22.3
- Internal	8.29	-2.18	6.9	22.1	8.48	-2.4	6.9	22.3
- International	8.42	-1.34	7.31	20.7	8.51	-1.5	7.31	20.7
Age	40.1	-14.02	15	94	40.8	-13.89	15	95
Age-squared	1804	-1259	225	8836	1857	-1242	169	9025
Respondent is household head	0.77	-0.38	0	1	0.16	-0.44	0	1
Marital status	0.82	-0.42	0	1	0.73	-0.36	0	1
Religion is Islam	0.9	-0.31	0	1	0.89	-0.32	0	1
Medium education	0.28	-0.45	0	1	0.27	-0.44	0	1
High education	0.64	-0.48	0	1	0.55	-0.5	0	1
Number of household members	6.02	-2.82	1	39	6.06	-2.78	1	25
Number of children	1.28	-1.18	0	9	1.19	-1.17	0	9
Urban location	0.48	-0.5	0	1	0.47	-0.5	0	1
Logarithm of acres of land operated	-6.94	-5.11	-12.2	6.8	-6.92	-5.08	-12.2	6.8
Logarithm of acres of land owned	-7.37	-5.05	-12.2	6.7	-7.19	-5.07	-12.2	6.7
Household received public subsidies	0.23	-0.42	0	1	0.25	-0.43	0	1
Household has access to credit	0.22	-0.42	0	1	0.22	-0.42	0	1
Number of motored vehicles owned	0.42	-0.49	0	1	0.41	-0.49	0	1
Logarithm of household income	14.75	-4.02	5.7	22.9	15.85	-2.92	5.7	22.9
Number of observations	*7308*				*5800*			

Source: Author's calculations from IFLS3 and IFLS4

Table 2. Proportion of remittance recipients in 2000 and 2007

Type of remittances	2000		2007	
	Men	Women	Men	Women
Total remittances	17.82 %	21.52 %	22.41 %	26.40 %
	of which	of which	of which	of which
Internal remittances	81.49 %	75.88 %	89.74 %	87.98 %
International remittances	18.51%	24.12 %	10.26 %	12.02 %

Source: Author's calculations from IFLS3 and IFLS4

Table 2 above shows that within the analysis sample the proportion of women that receive remittances is higher than the proportion of men in both years. Interestingly, men are found to receive relatively more internal remittances than international remittances when compared to women and this trend increases from 2000 to 2007. This refers to the proportion of male and female respondents who declared to have received assistance from one or more household migrants. Whereas, Table 3 below shows the value of the average monetary and in-kind assistance received by men and women, which is reported in Indonesian rupiah.

Table 3. Average amount of remittances received in 2000 and 2007

Type of remittances	2000		2007	
	Men	Women	Men	Women
Total remittances	929,998Rp	917,497Rp	2,342,806Rp	3,231,207Rp
Internal remittances	501,708Rp	508,391Rp	2,012,723Rp	2,807,219Rp
International remittances	2,690,631Rp	2,054,297Rp	4,737,143Rp	5,666,332Rp

Source: Author's calculations from IFLS3 and IFLS4

From the figures shown in Table 3, an increase is clearly observable, between the two rounds, in the average amount of total remittances received by both sexes, with women receiving slightly less then men in 2000 but considerably more in 2007. Both internal and international remittances follow the same increasing trend and gender-specific pattern; though, as expected, the average amount of international remittances received by both sexes is much higher. International migrants tend to send more money than internal ones and their remittances are valued in a foreign currency that is often stronger than their domestic currency.

Table 4. Gender labour allocation for main activity in 2000 and 2007

Type of work	2000		2007	
	Men	Women	Men	Women
Farm work				
Farm work is main activity	36.66 %	32.36 %	33.26 %	24.69 %
Average weekly hours	38 hours	31 hours	39 hours	32 hours
Off-farm work				
Off-farm is main activity	58.98 %	46.26 %	56.01 %	41.67 %
Average weekly hours	47 hours	44 hours	47 hours	43 hours
Unpaid family work				
Unpaid work is main activity	4.36 %	21.38 %	10.73 %	33.64 %
Average weekly hours	33 hours	39 hours	38 hours	41 hours

Source: Author's calculations from IFLS3 and IFLS4

The Table 4 above refers to the labour allocation of men and women across the three main activities used in the analysis, in the two rounds of the IFLS survey. As expected, men are found to spend, on average, more time than women performing off-farm work activities as their main weekly activity, whilst women spend more hours then men in unpaid work as their main activity. The gender specific characteristic of unpaid family work clearly emerges when looking at the percentage of women whose main activity is indeed unpaid work, 21.38 percent in 2000 and 33.64 percent in 2007, compared to the percentage of men in the same category, only 4.36 percent in 2000 and 10.73 percent 2007. It is important to bear in mind that these figures only refer to the job that consumes most time, thus the proportion of women who carry out some form of unpaid family work in addition to their main off-farm or farm activities is bound to be much higher. This consideration is particularly relevant when it comes to farm work. In rural areas, women who farm the land or contribute to other household farming activities are often also the only family members performing a series of unpaid domestic tasks essential for the economy of the household. Hence, although the average number of hours spent by women on farm work as their main activity is lower than men's in Table 4, their comprehensive workload is likely to be higher.

Empirical Strategy

The purpose of my econometric analysis is to estimate the impact of migration and remittances separately on men's and women's labour hours allocated to their main activity. I am estimating the impacts of having one or more migrant members, either internal or international, in the household as well as the impacts of receiving remittances, either from within the country or from overseas. I am taking into account every adult working female and male member of the household, without controlling for potential correlations in their allocation of labour, given the complexity of such procedure. Equally, I am not considering the labour decisions of husbands and wives as jointly determined, since a sizable proportion of migrants in my sample (almost 20 percent) are spouses of the respondents, thus not participating in the household labour allocation decisions. As already mentioned, instead of looking at work force participation or employment rates, I am focusing on labour allocation in terms of number of hours spent by individuals in the activity that consumes most of their time. I am distinguishing the type of main activity performed into three broad categories, which are off-farm work, farm work and unpaid family work, each representing the dependent variable in three separate regressions. Following the conventional literature concerning working hours, I am employing a Tobit model (Tobit, 1958; Moffitt, 1982; Killingsworth, 1983), which allows me to account for the fact that my dependent variables are censored at zero, for those individuals who spend no hours performing one of the three main activities. In particular, I am making use of an augmented version of this model, since I am including two time periods in my analysis, therefore employing a Tobit model for panel data (Islam, 2007).
The specification of this panel Tobit model of labour allocation is the following:

$$y_{it}^{*} = M'_{it}\beta + X'_{it}\partial + \mu_i + v_{it}$$

$$y_{it} \begin{cases} 0 & if \quad y_{it}^{*} \leq 0 \\ y_{it}^{*} & if \quad 0 < y_{it}^{*} < \alpha \\ \alpha & if \quad y_{it}^{*} \geq \alpha \end{cases}$$

Where y_{it}^* represent the unobserved (latent) dependent variables and y_{it} represent the observed working hours of individual i at time t. In brackets, the lower limit of the dependent variable is indicated as 0, whilst α is the upper limit; the latter is 168 hours per week, which correspond to 24 hours a day.[5] *M'* indicates the explanatory variables related to migration that are included in separate regressions, namely the number of total, internal and international migrants in the household as well as the logarithm of total remittance inflow, the logarithm of internal remittances and the logarithm of international remittances. *X'* is a vector of all the other control variables included in the model, which are expected to affect the number of hours allocated by men and women to different types of work. Finally, the error term is decomposed into μ_i and v_{it} to indicate that I am controlling for unobserved individual effects. In particular, whilst time variant shocks to labour allocation are represented by v_{it}, the error term μ_i is the time-invariant individual specific effect. As argued by a large body of theoretical literature on the subject, this type of censored regression model for panel data is consistently estimated by assuming that the unobserved individual effects are random. It is indeed technically challenging to use a fixed-effects Tobit estimator, which would produce consistent estimations only if the number of time periods t approaches infinity, due to incidental parameters problems (Neyman and Scott, 1948; Lancaster, 2000; Hsiao, 2003). Hence, the use of panel data analysis with random effects assumption appears to be, in this case, the most appropriate method to address the problem of unobservable individual characteristics, which is particularly relevant in the study of migration.

When analysing the impacts of migration and remittances, it is in fact necessary to attempt to mitigate the issue of endogeneity, since a number of unobservable characteristics are likely to be correlated with both the outcome variables and the explanatory migration variables. Previous migration studies, which could not, like in this case, perform fixed-effects or first-difference estimations, have dealt with the problem of omitted variables and selection bias through the use of

[5] I have decided to use this figure as the maximum number of hours since working over 24 hours a day would not be rationally possible, thus the small number of respondents who declared to work more than 168 hours are treated as outliers.

the instrumental variable approach. In order to be able to employ this approach in my analysis, I have also attempted to carry out the Heckman procedure of the limited information maximum likelihood. The purpose of this two-step estimation method is to overcome the sample selection problem by estimating, in a first step, the so-called inverse Mills ratio and then using it, in a second step, to estimate the equation by ordinary least squares (Heckman, 1979). However, the results that I have obtained by using this procedure to undertake an instrumental variable estimation with panel data were not satisfactory. On the one hand, finding an appropriate instrument for migration and remittances was extremely challenging. Several instruments have been tested in the literature, including migration networks, institutional variables or even the number of Western Union offices in the region of residence of the household, but none of them seem to satisfactorily address the problem of endogeneity (Barajas et al., 2009; Amuedo-Dorantes and Pozo, 2006). In addition, most of these instrumental variables are tailored to the characteristics of overseas migrants and international remittances and would not be suitable for the analysis of internal flows, which is central in my research. Besides, a more fundamental issue concerns the Heckman's estimator itself. In fact, Heckman's procedure has been largely criticised for being very unstable and inefficient, especially because of correlation problems between the explanatory variables included in the first-step selection equation and those included in the second-step outcome equation. Therefore, the robustness and reliability of the results produced through this procedure to correct for selectivity bias cannot be guaranteed. In brief, the Tobit panel model with random effects that I have decided to use for my estimation seems to be the most appropriate and reliable method in these circumstances, given the weaknesses and challenges characterizing the potential alternatives.

In the next sections, I will briefly describe my results on the effects of losing a migrant member of the household to migration and will then concentrate on the results concerning the impacts of remittances, which are of particular interest.[6]

[6] Although the total number of regressions and related tables that I have generated is 24, I am showing in this paper only a selection of the most interesting results, with the aim of facilitating the discussion and avoiding redundancies.

The Impact of Migration

The main broad consideration that can be drawn from the results concerning the impact of having migrant members within the household is that the disruptive effect of migration does not seem to be particularly significant. The only area in which losing one or more members of the household to migration increases the number of hours worked is off-farm work and this effect is limited only to men. In particular, when looking at the different impacts of internal and international migrants, it is possible to notice that men are more likely to increase the time they spend in off-farm work as their main activity in consequence of having household members moving within the country, whilst the effect produced by having international migrants is the opposite, with men more likely to reduce their working hours. This may be related to the different amounts of remittances coming from those two types of migrants, as I will discuss in the next section. Women's off-farm time is not affected by the number of either type of migrant.

Interestingly, the different impacts of internal and international migrants is reversed when it comes to number of hours spent by men in farm work. Having internal migrants in the household reduces the time spent farming, whilst having international migrants increases it. Again this diverging influence is better understood together with the analysis of the results concerning remittances. Nonetheless, the findings on the total number of migrants leaving the household clearly suggest that their overall impact is to reduce the number of hours worked on the farm by men, thus indicating that the potential disruptive effect of migration discussed in the conceptual framework of this paper is not prevalent.

Generally speaking, women's labour allocation appears to be less affected than men's by the number of migrants only, with the importance of remittances thus emerging as especially central for them. However, losing one or more household members to migration overseas does impact women's hours spent in unpaid family work by reducing the time they spend in that work area as their main activity. Conversely, men's time spent in unpaid family work, which is very little anyway, is not affected by these migration variables. Also in this case, the impact of migration on working hours is negative and there is no disruptive effect.

The Impact of Remittances

I am presenting in this section the impacts of remittances, including the whole set of control variables in Table 5 and Table 6 and focusing on the remittance explanatory variables, at the centre of my analysis, in the rest of the tables.

Table 5. Impact of total remittances on farm work for men

MEN	*Explanatory Variables* (Migration, Individual and Household variables)	*Dependent Variable* **FARM WORK** Number of hours spent doing farm work as main activity
	LOGARITHM OF TOTAL REMITTANCES RECEIVED	-0.127 * (0.068)
	YEAR	-1.733 *** (0.316)
	AGE	0.055 (0.076)
	AGE-SQUARED	- 0.001 (0.001)
	RESPONDENT IS HOUSEHOLD HEAD	2.797 *** (0.590)
	MARITAL STATUS	1.059 * (0.561)
	RELIGION IS ISLAM	-2.156 *** (0.564)
	MEDIUM EDUCATION	-2.096 *** (0.635)
	HIGH EDUCATION	-5.894 *** (0.616)
	HOUSEHOLD HAS ACCESS TO CREDIT	-2.057 *** (0.371)
	NUMBER OF HOUSEHOLD MEMBERS	-0.017 (0.075)
	NUMBER OF CHILDREN IN HOUSEHOLD	-0.019 (0.157)
	URBAN LOCATION	-7.063 *** (0.386)
	LOG OF ACRES OF LAND OPERATED BY HOUSEHOLD	1.389 *** (0.046)
	LOG OF ACRES OF LAND OWNED BY HOUSEHOLD	-0.092 ** (0.044)
	HOUSEHOLD RECEIVED PUBLIC SUBSIDIES	0.856 ** (0.360)
	NUMBER OF VEHICLES OWNED BY HOUSEHOLD	1.199 *** (0.326)
	LOG OF HOUSEHOLD INCOME EXCLUDING RESPONDENT'S	0.175 *** (0.044)

Number of observations: 14616
Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Standard Errors in brackets

Table 6. Impact of total remittances on farm work for women

WOMEN	*Explanatory Variables* (Migration, Individual and Household variables)	*Dependent Variable* **FARM WORK** Number of hours spent doing farm work as main activity
	LOGARITHM OF TOTAL REMITTANCES RECEIVED	-0.135 ** (0.056)
	YEAR	-3.433 *** (0.274)
	AGE	0.401 *** (0.061)
	AGE-SQUARED	-0.004 *** (0.001)
	RESPONDENT IS HOUSEHOLD HEAD	1.068 ** (0.507)
	MARITAL STATUS	0.404 (0.423)
	RELIGION IS ISLAM	-2.532 *** (0.480)
	MEDIUM EDUCATION	-1.943 *** (0.460)
	HIGH EDUCATION	-3.893 *** (0.461)
	HOUSEHOLD HAS ACCESS TO CREDIT	-1.993 *** (0.329)
	NUMBER OF HOUSEHOLD MEMBERS	-0.001 (0.062)
	NUMBER OF CHILDREN IN HOUSEHOLD	-0.039 (0.136)
	URBAN LOCATION	-6.223 *** (0.344)
	LOG OF ACRES OF LAND OPERATED BY HOUSEHOLD	0.977 *** (0.041)
	LOG OF ACRES OF LAND OWNED BY HOUSEHOLD	0.068 * (0.038)
	HOUSEHOLD RECEIVED PUBLIC SUBSIDIES	0.586 ** (0.313)
	NUMBER OF VEHICLES OWNED BY HOUSEHOLD	-1.203 *** (0.288)
	LOG OF HOUSEHOLD INCOME EXCLUDING RESPONDENT'S	-0.181 *** (0.053)

Number of observations: 11600
Significance levels: *** (p<0.01), **(p<0.05), *(p<0.10)
Standard Errors in brackets

The main result that appears to clearly emerge from Table 5 and Table 6 above is that receiving remittances reduces the number of hours spent on farm work as a main activity for both men and women. This finding is in line with the previously discussed literature on the subject and seems to confirm the income effect associated with remittances. Interestingly, the impact of the total inflow of remittances on women is shown to be slightly stronger and more statistically significant that the impact on men, which hints at an expected gender specific effect of remittances. The rest of my control variables indicate the importance of other factors in determining the amount of hours allocated to farm work.

First of all, being the head of the household increases the amount of farm work for both men and women, whilst being married has a positive effect on men but no effect on women. Being Muslim is found to reduce the time spent in farming as the main activity for both genders, possibly indicating that belonging to the main religious group in the country entails a relatively better socioeconomic condition. Not surprisingly, higher levels of education have an increasingly considerable impact on farm work, with more educated men as well as women working fewer hours. The set of variables concerning the economic status of the individuals and their households indicate that being a member of a relatively vulnerable household, which has received state assistance, increases the time spent in farm work, whilst having obtained credit from a financial institution, which implies a relatively sounder financial background, reduces it.

However, men and women are found to be differently affected by the amount of land and the number of vehicles owned as well as the total income earned by their households, excluding their own labour income. When the land operated increases, both sexes work longer, but when the land owned by the household increases, only women continue to put more hours in, whilst men work less, possibly relying on external labourers. Conversely, a larger household income and more vehicles are shown to raise the time spent by men on agricultural activities, whilst reducing the hours spent by women. This may be related to a gender specific dynamic that discriminates between men and women when it comes to control over the land, type of tasks undertaken in agriculture and use of household resources, with men more likely to make agricultural investments.

Table 7 and Table 8 on internal and international remittance flows, which I am presenting below, seem to point towards the same direction, indicating that remittances themselves play a significant part in this gender specific dynamic.

Table 7. Impact of internal and international remittances on farm work for men

MEN	Migration Variables	Dependent Variable: FARM WORK – Number of hours spent doing farm work as main activity
	LOGARITHM OF INTERNAL REMITTANCES RECEIVED	-0.227 *** (0.074)
	LOGARITHM OF INTERNATIONAL REMITTANCES RECEIVED	0.398 *** (0.154)

Table 8. Impact of internal and international remittances on farm work for women

WOMEN	Migration Variables	Dependent Variable: FARM WORK – Number of hours spent doing farm work as main activity
	LOGARITHM OF INTERNAL REMITTANCES RECEIVED	-0.131 ** (0.061)
	LOGARITHM OF INTERNATIONAL REMITTANCES RECEIVED	-0.202 * (0.111)

The most interesting result shown in Table 7 is that internal and international remittance flows produce a diverging impact on men's farm hours. In fact, whilst internal remittances reduce the time spent in farming, international remittances are found to have the opposite effect. Hence, male recipients of remittances sent by overseas migrants are likely to use this extra income to increase agricultural production through investments in their farming system. This process leads men to spend more hours in farm work as their main activity and demonstrates that remittances can be employed for productive purposes when they are substantial, which explains why only international remittances produce this effect. However, women are found to always reduce the number of hours spent on farm work when they receive remittances, regardless of their provenance. This probably indicates that they are less in charge of investment decisions and that they are keen to use the extra income deriving from internal or international remittances to reduce their farming activities, which are physically and time demanding.

Table 9. Impact of remittances on off-farm work for men

MEN	*Migration Variables*	*Dependent Variable* **OFF-FARM WORK** Number of hours spent doing off-farm work as main activity
	LOGARITHM OF TOTAL REMITTANCES RECEIVED	-0.073 (0.088)
	LOGARITHM OF INTERNAL REMITTANCES RECEIVED	0.007 (0.095)
	LOGARITHM OF INTERNATIONAL REMITTANCES RECEIVED	-0.439 ** (0.199)

Table 10. Impact of remittances on off-farm work for women

WOMEN	*Migration Variables*	*Dependent Variable* **OFF-FARM WORK** Number of hours spent doing off-farm work as main activity
	LOGARITHM OF TOTAL REMITTANCES RECEIVED	-0.261*** (0.097)
	LOGARITHM OF INTERNAL REMITTANCES RECEIVED	-0.234 ** (0.106)
	LOGARITHM OF INTERNATIONAL REMITTANCES RECEIVED	-0.211 (0.194)

Table 9 and Table 10 above show that the total inflow of remittances reduces the number of hours spent by women in the off-farm sector, whilst men's hours are affected only by international remittances. This result confirms the evidence, discussed in my conceptual framework, that women have lower status jobs than men in the urban sector and are therefore more inclined to reduce their off-farm work than their male counterparts. In particular, these figures suggest that the income effect associated with remittances works on men only when the amount received by them is substantial enough, thus explaining the significant impact of international remittances. Whereas, women are once again found to be reducing the time spent working in undesirable jobs as soon as they receive some form of reliable non-labour income, taking full advantage of remittances' income effect.

Table 11. Impact of remittances on unpaid family work for men

MEN	*Migration Variables*	*Dependent Variable* **UNPAID FAMILY WORK** Number of hours spent doing unpaid work as main activity
	LOGARITHM OF TOTAL REMITTANCES RECEIVED	-0.092 ** (0.041)
	LOGARITHM OF INTERNAL REMITTANCES RECEIVED	-0.067 (0.044)
	LOGARITHM OF INTERNATIONAL REMITTANCES RECEIVED	-0.161 * (0.092)

Table 12. Impact of remittances on unpaid family work for women

WOMEN	*Migration Variables*	*Dependent Variable* **UNPAID FAMILY WORK** Number of hours spent doing unpaid work as main activity
	LOGARITHM OF TOTAL REMITTANCES RECEIVED	-0.191*** (0.066)
	LOGARITHM OF INTERNAL REMITTANCES RECEIVED	-0.124 * (0.072)
	LOGARITHM OF INTERNATIONAL REMITTANCES RECEIVED	-0.460 *** (0.132)

Finally, Table 11 and Table 12 above clearly show that unpaid family work sharply decreases as a result of receiving remittances. As expected, this impact is stronger and more statistically significant for women than men, since more women than men spend time carrying out unpaid family work as their main activity. This unpaid work, as already discussed, includes a large range of domestic and caring tasks, whilst lacking any positive effect in terms of personal empowerment. Therefore, women can make use of the money received in the form of remittances, either internal or international, to pay for services or appliances that assist them in their domestic duties. As a consequence, women's time burden is reduced by remittances, whose welfare effect is thus positive.

Conclusions

I have attempted, in this paper, to assess the impacts of migration and remittances on the labour allocation of the remaining household members, with the aim of disentangling the process that shapes their outcomes. The extensive set of results that I have obtained highlight, first and foremost, that such impacts are not homogeneous and can only be understood by looking, on the one hand, at the constitutive features of migration and remittance flows and, on the other hand, at the characteristics of remittance recipients and migrants' households of origin. In particular, my findings indicate that both internal and international migrants as well as their respective remittances need to be investigated, since their effects can be rather different, but equally significant. At the same time, the labour patterns of men and women left behind by migrants should be examined separately. In fact, my results clearly underline the gender specific nature of the impacts produced by migration and remittances on labour allocation across farm, off-farm and unpaid family work. In this regard, my gender analysis would not have been as complete without taking into account all these three work areas, given the proven importance of farm work and unpaid work for women.

On the whole, my results suggest that having a migrant member in the household as well as receiving remittances tend to reduce the number of hours spent by men and women performing their main activity.[7] However, whilst internal remittances are found to persistently lead to a decrease in work hours, international remittances have the potential to cause the opposite effect, as shown by my results concerning farm work. In fact, men are found to increase the time they spend in farming activities if they receive international remittances, which suggests that the money sent back by overseas migrants can be used for productive investments in agriculture. Interestingly, this does not apply to women, who steadily reduce the hours spent performing all three main activities, when receiving internal or international remittances. Despite pointing to the existence of gender inequalities in terms of decision power within the

[7] Therefore, the income effect of remittances appear to offset and overcompensate the potential disruptive effect of migration, which I have discussed in the conceptual framework of this paper.

household, these findings portray a largely positive picture since women seem to use remittances to reduce their heavy time burden.

Hence, the first implication emerging from my research is that migration and above all remittance inflows can be instrumental to improve women's conditions by tackling the issues related to time poverty. Since women tend to be engaged in multitasking, inside and outside the household, the reduction caused by remittances in the number of hours spent doing the main activity is beneficial for their personal welfare. In addition, the activities performed by women as unpaid family workers, but also in agriculture and in the off-farm sector, are usually detrimental to their physical and psychological well-being and not empowering. This gender specific effect suggests that the remittance induced reduction in the labour effort does not affect the most dynamic sectors of the economy; conversely, mainly low-status jobs with poor development potential are affected and the overall impact of remittances is therefore positive. Governments should think of remittances as a policy tool that can assist them in promoting gender equality, by enabling women to continue to make their fundamental contribution to the national and household economies, without being overloaded with work.

Another policy implication clearly emerging from this research is the centrality of internal remittances. My findings demonstrate that the resources shared by internal migrants with their families of origin have a significant impact on labour allocation, inducing the positive consequences discussed so far. The research and policy focus should then be placed on internal migration at least as much as on international migration and the flow of internal remittances should be encouraged and facilitated.[8] At the same time, the potentially productive use of international remittances, as identified in my analysis, should also be further investigated and promoted by a set of appropriate policy interventions. If recipients are led to both collect their remittances and make use of them through formal mechanisms sponsored by the government, these resources could be even more efficiently channelled into productive investments, with widespread

[8] This is particularly true for a country like Indonesia, the case study of this research, where geography and ethic distribution are conducive to internal migration, but equally applies to most developing countries with socioeconomic disparities within their borders.

development results. In brief, my research indicates that internal and international migration and remittances can play a critical role in promoting economic development as well as gender equality.

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