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Working Papers - Economics

Household Migration and Children's Educational Attainment.

The Case of Uganda

L. Ferrone and G.C. Giannelli

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Lucia Ferrone[1]
Gianna Claudia Giannelli[2]

[1]UNICEF, Office of Research, Piazza SS Annunziata 12, Firenze, Italy. E-mail: lferrone@unicef.org
[2]Department of Economics, University of Florence, CHILD and IZA, Via delle Pandette 9, Firenze, Italy. E-mail: giannelli@unifi.it

Email:

*Corresponding author

Abstract

In many Sub-Saharan African countries, a large number of people migrate internally or abroad because of demographic, economic and political factors. This pronounced mobility is likely to have consequences for children's education, still a matter of concern in the region. We study this issue for Uganda, investigating whether migration of household members affects children's primary education and in what direction. Using the Uganda National Panel Survey for 2005, 2009, 2010 and 2011, we estimate conditional fixed effects logit models of school attendance and primary school completion. We find that children's migration has a significant positive impact while adults' migration has a significant negative one on children's school attendance rates, while remittances have no influence. These findings suggest that children's migration is indeed beneficial, since it may contribute to match demand and supply of schooling. Adults' absence, instead, has controversial effects when children are left behind. In fact, lack of supervision and substitution of adults' tasks with child work might reduce the rate of school attendance. However, neither children's nor adults' migration seem to increase the rate of primary school completion, an evidence that points to the problem of the low quality of primary education in developing countries.

Introduction

Primary education is a major issue for developing economies where lack of infrastructures, scarcity of government funds and, often, institutional frailty take a severe toll on reaching universal education. Yet, education is widely recognized to be a key factor in human capital formation, and, therefore, a basic element of economic growth. A well known phenomenon in developing countries is that, while school attendance is generally widespread among young children, problems arise for the completion of elementary school because of delay in enrollment, grades repetition and, mostly, school dropout before completion of the entire cycle. The combination of different problems, arising from both the demand and the supply side of education (Handa, 2002), contributes to this critical situation. Among the possible causes are the opportunity costs associated with the foregone income from child labour (Edmonds, 2008), the chronic shortages of well trained teachers (UNESCO, 2013) and school fees (UNICEF, 2009).

In this paper, we investigate the relationship between household migration, defined as all internal and international residential changes of household members including children, and children's educational outcomes in terms of school attendance and school completion. Our focus is on the effects on elementary school attendance and completion, since, in developing countries, dropout rates at first grades are still very high. We distinguish between adults' and children's migration, with the aim of disentangling their respective influence on children's primary school attainment.

The economic literature on migration has largely focused on the effects of remittances on children's well being. With a few exceptions, remittances are found to increase schooling and reduce child labour. Remittances from abroad have a large positive impact on school retention in El Salvador (Edwards and Ureta, 2003), but, controlling for the endogeneity of the migration decision, this effect disappears (Acosta, 2011). Increased receipt of overseas

remittances due to favorable exchange rate movements in the Philippines increases child schooling and educational expenditure while reducing child labour (Young, 2008). Both migration and remittances reduce child labor in the Kagera region in Tanzania (Dimova et al, 2011), while in the rural areas of Ecuador remittances in conjunction with aggregate shocks, such as droughts, damage to agricultural produce due to frost and plagues, increase school enrolment and decrease child labour, especially for girls (Calero et al, 2009).

Most of the times, however, remittances are sent by household members that have left the household. If they are parents, part of the monitoring effort on children's education is lost. If only one parent migrates, the remaining parent could be loaded with extra duties, thus reducing further children's supervision. Moreover, parental absence may require that children (especially older children) substitute their missing parent in domestic or agricultural tasks, thus neglecting their schooling. A number of studies highlights these negative side-effects of international migration of parents. Father's absence results in dropouts or repeating grades in Albania, and the impact is worse for girls than for boys, implying that parents' migration can reduce gender equality and women's empowerment (Giannelli and Mangiavacchi, 2010). Similar effects on schooling of girls and boys are found in the rural areas of Mexico (McKenzie and Rapoport, 2011). On the gender inequality issue, however, the evidence is mixed. Mexican fathers' migration to the US is correlated with additional education for girls (Antman, 2012). Furthermore, some disruptive effects may emerge from leadership changes in the family. In a traditional setting, fathers and mothers supervise their children's education, but, if they are missing, it is likely that the decision power shifts to older men and women in the household, less educated and less prone to understand the value and importance of human capital, especially of girls (Ginther and Pollak, 2004).

We study the case of Uganda. Uganda, as well as several other Sub-Saharan African countries, is characterized by intense flows of internal mobility and international migra-

tion towards the neighbouring countries. These migrations flows have been prompted by demographic, economic and political factors where wars have had a dramatic role, forcing migration of refugees and internally displaced persons. We use data drawn from the Uganda National Panel Survey for 2005, 2009, 2010 and 2011, which show that, on average, during the 2000s, more than 20 per cent of the households have at least one member with a migration experience. Notwithstanding the well known urbanization phenomenon, Uganda remains largely rural and most migrations take place from one rural area to another. This pronounced household mobility is likely to have consequences for children's education, still a problematic issue in the country. To our knowledge, no work has looked at the effect of migration on education in Uganda and we aim at contributing in this direction.

We also aim at contributing on other grounds. Differently from the reviewed literature, in this paper, we study the effects on schooling of past and current migration experiences of adult and child household members. From a theoretical point of view, since migration and children's education cannot be understood as individual decisions, but must instead be regarded as a collective decisions made by the extended family, we conduct our analysis at the household level, focusing on household rates of schooling and migration. Under a more practical respect, this choice also allows us to maximize the observed number of panel-households we can count on to estimate our fixed effects models. Moreover, on a methodological ground, the availability of panel data allows us to overcome the identification problem usually found when dealing with this type of issues, as people who decide to move may differ from the ones who do not, thus self-selecting in ways that cannot be captured by the available data. The availability of longitudinal data, therefore, allows us to tackle the problem of unobserved heterogeneity present in all the reviewed studies which are based on cross-section data. Another advantage of the data we use, is the availability of information on the migration of household members in the five years before the date of the interview.

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The use of this 'lagged' information is another way to tackle the problems connected with the endogeneity of the decision to move with respect to the schooling choices.

Our findings show that family migration has a composite effect: if adults move and children are left behind, this has a negative impact on school attendance, while if children move (either alone or with their parents), this has a positive effect. These results are not unexpected, since a major reason for moving is to reach areas with better services and opportunities, and, often in Africa, also to escape from areas disrupted by civil conflicts. When adults move from the household leaving children behind, on the other hand, this generates a detrimental effect on schooling, probably due to the lack of supervision of children, and to the fact that, often, they have to substitute adults in household chores.

The paper is organized at follows: the next section motivates the choice of Uganda as a case study. The following three sections present the empirical models, the data and the results. The last section concludes.

The case of Uganda

Uganda is an Eastern African country, an area whose economy still lags behind. GNI per capita is lower than the average of the Sub-Saharan countries, even if poverty has been reducing in the last years.[1] Uganda has a low Human Development Index (HDI),[2] ranking 164th out of 187 countries, and 30th out of 50 African countries. On the one hand, the structural reforms started in the 90s took their toll on the population: the widespread liberalization and privatization of the agricultural market led to a worsening of the life conditions for a large part of the population, which still survives on agriculture and herding.

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[1]GNI per capita, PPP (current international USdollar), was 1,310 in 2011, and poverty 24.5 per cent in 2009 (per cent of population below national poverty line). Source World Bank.

[2]Source: Key to HDI countries and ranks 2013, Human Development Report. United Nations Development program, p.159, published in 2014.

On the other hand, the fragile social and institutional context have prevented the programs implemented by the World Bank and the IMF to be effective, especially the programmed government decentralization.

The choice of Uganda as a case study for the links between migration and education, is justified by two main motivations. As for education, universal primary education is still a problematic goal in Uganda, even if gross enrollment ratios have raised in the past years. The majority of Ugandans have either no formal education or only some primary education. In 2011, 20 percent of females and 13 percent of males aged 6 and older had never had any formal education. Low levels of education still persist among young people: 54 per cent of females aged 15-19 have only some primary grades as highest level of education, 10 per cent completed primary, and 30 per cent some uncompleted secondary (UBOS and ICF, 2012).

In 1997, Uganda undertook a major reform program under the name Universal Primary Education (UPE) which abolished fees for primary enrollment, with the goal of ensuring that up to four children per family were able to attend school. At the same time, a part of the program was devoted to dissemination, awareness building and decentralization at the local level. The program was associated with a dramatic increase in enrollment, especially for girls (Deininger, 2003). Moreover, school fee elimination had significant positive effects on the timely enrolment of girls and children living in rural areas of Uganda. In fact, since school entry at ages above eight is very strongly associated with early school dropout, the UPE program was found to cause a 3 per cent increase the probability that a child begins attending school before age nine (Grogan, 2008). These results demonstrate that such programs are effective in poor countries where even a small tuition fee is an obstacle to school attendance. On the downside, probably because of the fast pace of the program, the quality of school did not improve at the same rate. The students-teacher ratios increased sharply, and in 1999 about one quarter of the students failed the final examination in primary school. UPE

programs should therefore be complemented with measures that improve progress to higher grades and acquisition of additional skills in each grade. Evidence drawn since 2009 from surveys monitoring school outcomes in terms of test scores show that many East African children remain illiterate or innumerate, despite having completed multiple years of school. Among East African countries, Uganda performs best in terms of enrolment, but worst in terms of learning outcomes (Jones et al, 2014). A rough indication of the efficacy of the primary education system can be drawn from the primary completion rate. As shown in Figure 1, during the first decade of the 2000, the primary completion rate is quite low, and there is no tendency towards a reduction of the dramatic gap with respect to the gross-enrollment rate.

INSERT FIGURE 1 HERE

As far as migration is concerned, the Ugandan population shows high rates of internal migration, often forced by external shocks. Uganda has a very fractured society, one of the most divided among Sub-Saharan countries, with ethnic, linguistic and religious divisions deeply rooted in its colonial history. [3] Economic disparities take place between the North and the West-South region of the country, the latter usually the wealthier. Civil strife, disrupting the country form its independence in 1962, is still going on in the northern region since the 80s[4]: at the end of the nineties, it was estimated that between 800,000 and 1,000,000 people were killed by state terror, ethnic motivated violence and civil strife. It is also estimated that around one million refugees were displaced from their homes over the years. This has led to increasing internal migration, thus representing an interesting case for our topic of analysis.[5] International migration, instead, is a rather rare phenomenon and even more so

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[3]In Uganda, there are 53 officially recognized ethnic groups.

[4]Three armed groups are active in this area: the Lord's Resistance Army, the West Nile Bank Front (WNBF) and the Allied Democratic Forces (ADF).

[5]Unfortunately, forced displacement is not addressed in the present work, as data on civil strife and violence at the household level present many missing values. It is of course much more difficult to tackle household and individuals that suffered displacement, but further research on this topic is certainly due.

international migration toward non-African countries. On a population of about 36 million people, the biggest community of migrants from Uganda was in Kenya and counted roughly over 500,000 people in 2010.[6]

Another type of internal migration is children migrating independently of parents, in the majority of cases a phenomenon overlapping with child fostering (children living in households with neither their mother nor their father present). In Africa, child fostering is a common institution: evidence drawn from surveys for West Africa show that the percentage of households with one or more children under 15 living without (biological) parents is at least 15 per cent (Pilon, 2003). In Uganda, the percentage of households with foster children under 18 years of age is 28.6 per cent, of which 23.8 per cent residing in urban areas and 29.7 per cent residing in rural areas respectively (UBOS and ICF, 2012). In many cases fostered children have moved from households that face difficulties enrolling them in school to households where school enrollment is less problematic. Evidence drawn from a survey conducted in 1993 in South Africa shows, for example, that child fostering reduced the risk of not attending school by up to 22 per cent (Zimmerman, 2003).

In sum, internal migration is a widespread phenomenon that occurs for work or marriage, in the case of adults, while for children the main reasons are education and following or rejoining their families.

The estimation strategy

We aim at measuring the association between family migration and children's schooling, in terms of school attendance and school completion. The use of panel data ensures a control for unobserved factors and self-selection, which are well known issues when dealing with both educational outcomes and migration. Education is influenced by natural ability, an

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[6]International Organization for Migration and World Bank, 2010.

unobserved and unobservable factor, while families with a higher predisposition for moving may be, in fact, different from other families in a way that affects both moving and education, thus creating a self-selection problem. The basic model at the individual level is the following:

$$y_{ijt} = \beta_0 + \beta X_{ijt} + \gamma M_{ijt} + \delta Z_{jt} + u_{ij} + \eta_j + \epsilon_{ijt} \qquad (1)$$

Outcome y of individual i of household j at time t, is determined by individual characteristics X, the migration variable at the individual level M, household characteristics Z, an individual fixed effect u_{ij} and a household fixed effect η_j. The household fixed effect captures the household attitude towards children's education, which might be either unobserved (i.e. not available in the survey) or unobservable. The problem with this model, beside the difficulty to track both individual and household fixed effects over time, is that the second to the fourth waves of the panel are very close in time (2009, 2010 and 2011) and the variability of outcomes at the individual level might be very low, a problem that might be amplified when the the the dependent variable is a dummy and not a continuous one.

To overcome these problems, we estimate the following household-level model:

$$\bar{y}_{jt} = \beta_0 + \beta \bar{X}_{jt} + \gamma \bar{M}_{jt} + \delta Z_{jt} + \eta_j + \bar{\epsilon}_{jt} \qquad (2)$$

Individual characteristics are substituted with household averages of the same characteristics, so that the outcome y is actually the average school attendance (or school completion) of children 6 -15 in household j. It can also be interpreted as the household-specific rate of school attendance, or as the probability for a child aged 6 to 15 in household j to be attending school at time t. In substance, this is a model of the household general attitude towards its child members. From the conceptual point of view, since schooling decisions regarding children are taken by adults, this specification is more relevant for our research question than the individual (child) specification. Moreover, as will be explained later in the

paper, the migration variables are defined at the household level.[7] From the methodological point of view, this model allows us to take into account household effects (using a fixed effects specification), and reduces the problem of little variability across close waves. The model might be estimated with a linear probability model with fixed effects. However, as the dependent variable is continuous, but truncated at both ends, the model is also estimated using a two-side censoring model for panel data (Alan et al, 2011), which is useful when the dependent variable is a fraction, as it is in this case. The two-side censoring model is based, as censoring models in general, on the idea of a latent variable y* which conditions the observed variable y, so that we have:

$$y^* = \beta' \mathbf{X} + \epsilon \tag{3}$$

where we observe

$$y = \begin{cases} L & \text{if } y^* < L \\ y^* & \text{if } L \leq y^* \leq U \\ U & \text{if } y^* > U \end{cases}$$

and L and U are the lower and upper limits.

Data and Variables

We have drawn our sample from the four waves of the Uganda National Panel Survey (UNPS) collected in 2005-06, 2009-10, 2010-11 and 2011-12. The survey is a part of the World Bank Living Standard Measurement Study program. The four waves collect data from a national representative sample. Table 1 presents the number of households and inviduals surveyed in

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[7]For similar reasons, Bargain and Boutin (2014) make the same choice for studying child labour and remittances in Burkina Faso.

each round.

Table 1: Survey description

Years	Number of households	Number of individuals
2005-06	3,123	16,759
2009-10	2,975	18,734
2010-11	2,716	19,180
2011-12	2,850	21,279

Source: UNPS, Household Section (GSEC1, GSEC2).

The survey collects plenty of information on the socio-demographic, education, activity and consumption characteristics of households and their members. The section devoted to migration and migration history of the household provides information about previous places of residence and length of stay in the current place of residence of household members. The problem related to this section of the questionnaire (Section 3) is that it changes slightly from the first round to the next three, which are much more even in structure and coding. The only way to obtain a homogeneous variables across the four waves, was to specify our key migration variable as a dummy that takes value of 1 if the household member has changed place of residence in the last five years.

The key dependent variables are two dummies: 1) school attendance at the time of the interview, for all children aged 6 to 15 years; 2) completion of elementary school for all children aged 11 to 15. Table 2 shows their distribution. In order to better understand children's outcomes, we decided to add a third dependent variable: the rate of idle children within the household. Idle children is defined as children not attending school nor working.
[8] Our sample confirms the evidence reported in Fig.1: high enrollment ratio, but low completion rate. As for the migration of children in the five years before the interview, this is 9 per cent in 2005, 17 per cent in 2010, 15 per cent in 2011 and almost 13 per cent in 2011.

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[8]Working is defined as 20 or more hours per week of combined household and market work.

INSERT TABLE 2 HERE

We estimate a fixed effect household model. As already mentioned, using a fixed effect household model has the advantage of capturing household-specific effects, which are crucial given that children's schooling is a family decision rather than an individual one. Having decided to conduct our analysis at the household level, our dependent variables are the *household rates* of children's school attendance and school completion. 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 us to sample all panel households with children in the selected school-age range. If we had chosen to conduct a child specific analysis, given the time distance between the surveys, our sample would have been severely constrained by the limited number of panel-children who remain in the school-age range in the three rounds of the survey. Furthermore, the household level specification also solves the problem of the individual specification models: because the last three waves are very close in time, and because the 'yes' (i.e. the 1 values) observations in the mobility variable are few for the children's age group, the explicative power of the individual fixed effect model, which relies on differences among different years, is very low. More importantly, the variation in the outcomes is very low as well, resulting in an extreme reduction in observations. Using household level observations allows us to overcome both these problems.[9]

First of all, we have to define the new dependent variables, which are defined as follows, for each household i :

$$Schooling = \sum_{i=1}^{I} y_{ijt} \tag{4}$$

Where I is the total number of children aged 6-15 in household j, and $y_{ijt} = 1$ if child i goes to school, 0 otherwise. The same method is used for all dependent variables, changing

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[9]We did, however, run an individual model as a robustness check expoiting the availability of the fourth wave and using it to create more variation by skipping the third. The results hold.

the denominator I as the age range change. Also, this is how all the other control variables at the household level are constructed, always changing I according to the type of variable: basically, they are household averages of individual level variables. Consequently, the schooling variables can take three range of values:

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Schooling = \begin{cases} 1 & \text{if } y_{ijt} = 1 \ \forall i \\ 0 \leq Schooling \leq 1 & \text{if } y_{ijt} = 1 \text{for at least one i} \\ 0 & \text{if } y_{ijt} = 0 \ \forall i \end{cases}
$$

As for mobility M, a crucial point of this model is to define it at the household level. This is a conceptual question, rather than a computational one. This variable records the migration in the previous five years of members currently present (and interviewed) in the household.[10]

The most straightforward solution would be to use a household average of 'movers', but that in turn raises the question of how to calculate such average, whether on children, or on all of the household members. The best solution in this case is not to use an average, but instead two dummy variables: the first one takes value 1 if at least one adult member (aged 16 and above) has left the household in the previous five years, and 0 otherwise. The second one takes value 1 if at least one child has moved in the previous five years, and 0 otherwise. Also, as the two variables are used simultaneously in the models, it is possible to control for the fact that both children and adults have moved together, as opposed to the cases in which only adults or only children have moved. They could be highly correlated,

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[10]This information is drawn from UNPS 2009-10, 2010-11 and 2011-12 Section 3 ('Migration for all household members'), question 15: 'How many years has NAME lived in this place/village?'. It has been transformed in a dummy that takes value 1 if the household member has been residing at the address of the interview for less than 6 years. The five years of uninterrupted residence threshold has been chosen in order to harmonize the information with UNPS 2005-06. In UNPS 2005-6, in fact, the question was: 'Since 2001, has NAME lived in another place, such as another village, another town or country for 6 or months at one time?'.

but they are not: correlation between the two variables is 0.29, which can be regarded, in fact, as reasonably low. This tells us that adults and children do not always move together, as in the case of fostering discussed above. Another interesting feature of this migration variable is that it tackles migration in a retrospective way: the question about previous migration is asked at the time of the interview to each individual that is present at that time, i.e. individuals that have come back to the households where they were residing before migration, or individuals that have moved all together in the place of residence were they are interviewed. The variable does not address family members currently living elsewhere: this is the most close to an assessment of the household recent migration propensity, which is is likely to have affected schooling decisions of school age children in the household. To proxy the phenomenon of currently absent household members, we also introduce two additional dummies: one dummy that takes value one 1 if at least one adult is currently absent and 0 otherwise, and one analogous dummy for absent children. This current migration indicator, however, is likely to suffer from the remaining endogeneity problems due to time varying unobservables that can not be controlled for by our fixed effects estimation method. Other control variables are described in Table 3, along with their descriptive statistics (means and standard deviations).

INSERT TABLE 3 HERE

The average education of adult women is the probability of adult women in the household of having at least completed elementary school, and it is constructed in the same way as the previous averages. As for wealth and income, the data only provides expenditures quintiles, which are calculated using the questionnaire section on household expenditures, and are divided by the square roots of the number of household members, to obtain per capita expenditures. [11] We also control for two reasons of child migration, whether for education

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[11]This is alternative to equivalence scale methods that requires distinguishing between types of expenditures.

or work. The percentage of children who changed residence to attend school is not irrelevant: as previously discussed, in Uganda it is not uncommon for children to leave their families and move to live with relatives or acquaintances in order to attend school. The percentage of children who migrate to work, instead, is much lower. One thing that is important to address is the number of female children in our sample: as we can see from Table 3, the percentage is well below the natural gender ratio. After having controlled for gender ratio in the cross sections and selective infant mortality, we conclude that this is due to sample attrition: girls are more likely to leave the household and not come back. Even though we we do not have information on the reasons why these girls left, it is highly probable that the older ones left in order to marry. [12] This, however, doesn't pose an insuperable problem to our model, since older girls are very unlikely to attend school somewhere else. We can assume that the choice of marrying them is equivalent to the choice of not sending them to school. We see some evidence of this type of positive gender selection in our results, where the higher rate of female children in the household results in a higher attendance rate.

Table 4 presents the summary statistics, for each cross-section, for Migrant vs. Non-Migrant household. According to our definition of our migration variables, a household is defined as *migrant* if it has at least one usual member that has previously moved or is currently absent.

INSERT TABLE 4 HERE

As we can see, there are significative differences among migrant and non migrant households for the majority of the control variables: migrant households tend to be richer, for example, and the head of a migrant household is more likely to be more educated. The fact that the two groups show significative differences in almost all the controls and dependent variables supports the use of a fixed effects model.

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[12]In Uganda, the median age at first marriage is around 17 (UBOS and ICF, 2012).

Results

Table 5 shows the results of the estimated linear probability model of the household school attendance rate.

INSERT TABLE 5 HERE

The past migration variable for children has a positive and significant effect in all model specifications, while the current state of migrants of adult household members has a negative effect. Moving benefits children, while adults' decision to move and leave children behind has a negative effect on current children's school attendance. If household members have a past migration history, this does not affect the current school attendance of children. The absence of at least one child at the time of the interview has a positive effect (at 5 per cent significance level) on school attendance, coherently with the result that a smaller number of household members, both child and adult, increases the probability of attending school (see the coefficients of the number of children 6-15 in the household, and of the number of adults).

In our setting, therefore, children's migration history has lasting effects on children's school attendance, thus supporting the hypothesis that migration also helps matching the supply and demand of educational services. On the other hand, adults' current absence has immediate negative effects, most probably due to the lack supervision and substitution for the tasks previously performed by currently missing adults. While the result on children's migration, to the best of our knowledge, constitutes a piece of new evidence, the result on adults' migration is in line with what is found in the literature on children left behind. We add to this latter evidence, however, by disentangling the current from the lagged effects of adults' migration.

As a robustness check, we have run the model separately for the school attendance rate of children 6-10 and 11-15. A relevant difference with respect to the results of Table 5 is that

past migration of children looses significance for school attendance of children 6-10. This might be due to a temporal problem, since the past migration dummy equals one if at least one child has migrated in the last 5 years, and, if migration is far in time, the child might not yet have been of school age. [13]

At variance with the evidence for other countries, remittances do not significantly increase the probability of attending school of children in the household. This result is not surprising, since, in Uganda, migration is mainly internal, while the findings of most of the literature concern remittances of international migrants. As already mentioned, in Africa, internal migration has many different causes, and, probably, the motivation of sending money to the household of origin is not the prevailing one.[14]

Given the importance of the urbanization process, it might be the case that household migration towards urban areas was also motivated by the need to move to areas where schools were more numerous and of better quality. We therefore separate rural to urban household migration from other migration directions in order to verify whether mobility from rural to urban areas increases the probability of schooling. At variance with some descriptive and cross sectional evidence for other countries that show that this is the case (see, for example, Ackah and Medvedev (2010) for Ghana), we do not find any significant effect on school attendance of moving from rural to urban areas and vice versa. In the period studied, however, there was no evident urbanization process, since the percentage of household members who migrated from rural to urban areas was very similar to that of household members who migrated from urban to rural (around 20 percent). Anyway, rural to rural migration was the most frequent case.[15]

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[13]Results available on request.

[14]Unfortunately, we cannot investigate further this point, since the data contain too few observations of international migrants.

[15]These results are not presented but are available on request.

In order to test whether migration is a way to reach areas with better services, we also distinguish among the two main motivations for migration of children, namely, either for education or for work. The third column of Table 5 shows that having moved for education purposes has, indeed, a positive and significant impact on current school attendance. We have also distinguished between motivations for adults, but this does not add anything to the result, thus indicating that adults' absence is relevant, no matter for which reasons adults have migrated.

Another important factor to take into account would be distance between origin and destination areas of migrants, since migrants who live nearby might more easily monitor their left behind children. However, since we estimate an household average model, a variable measuring the average distance of household members who have migrated does not seem to be meaningful for our scopes.[16]

As already mentioned, the number of children aged 6 to 15 in the household has a negative effect, showing that there is a competition for household resources among school age children. The other significant relevant covariates (namely, child age, average adult female primary education completion rate, number of adult members in the household, expenditure quintiles) have the expected signs, except for gender: being female, on average, seems to have a slightly positive effect on school attendance.

Table 6 shows the results for the two-side censoring model. Everything remains the same in terms of signs, and the significance level of the coefficients of interest is even higher, thus confirming the findings.

INSERT TABLE 6 HERE

Table 7 and 8 report the results for primary completion estimated with the linear prob-

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[16]Furthermore, defining and measuring distance with the UNPS is rather complicated. Using the information on the previous and current district of residence, one could construct an index based on this information. However, it is questionable whether this is meaningful, since administrative districts vary consistently in size, and simply having changed district of residence could not be a good proxy of distance.

ability and the two-side censoring models respectively.

INSERT TABLE 7 and 8 HERE

The results show that there is no evidence of any migration effect on completing the first grade, since all migration variables are no longer significant, except for the positive effect of the current absence of children (like in Table 6) which is coherent with the negative effect of the number of children aged 6-15 in the household. If children migrate, this does not help them to complete primary school. On the other hand, adults' migration does not have a negative effect, either. These two facts would suggest that completing school is much more a problem related to the quality of the supply of education.

Given these findings, a more general question on children's allocation of time arises. When children do not attend school, what do they do? One of the main problems in poor developing countries is not only child labour, but also children neither working, nor attending school. In order to check for the effects of migration on these alternative allocations of time, we have also estimated the same model both for child labour and for children aged 6 to 15 that are idle (neither working nor attending school). We find no significant effect of migration on child labour [17] Instead, migration significantly affects the state of being idle, mirroring the result for school attendance: adults' migration increases the household rate of child idleness, whereas children's migration decreases it. This confirms previous evidence on African countries, where the phenomenon of "street children", more than child work, is rather widespread.

As anticipated, for the migration variables (see Table 9), we find mirrored results with respect to schooling: adults' past migration results in an increased probability of neither

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[17]Results available on request. Even adopting a wider definition of child labour with respect to UNICEF, according to which a child is considered to be involved in child labour activities under the following classification: (a) children 5 to 11 years of age that during the week preceding the survey did at least one hour of economic activity or at least 28 hours of domestic work, and (b) children 12 to 14 years of age that during the week preceding the survey did at least 14 hours of economic activity or at least 42 hours of economic activity and domestic work combined. Allowing for a bit more of leeway, here children (aged 6-15) are defined as engaged in labour if they did more 20 hours combined of housework or market work (paid or unpaid).

attending school nor working, while the opposite is true for children having migrated. This result confirms the previous effects of migration: when adults leave the household, children's human capital may be at risk, while if children themselves move, they are better off. This, as previously noted, is probably due to the fact that children are led to move by their parents or guardians to areas where they have better access to services and are less exposed to dangers and strife. Interestingly, here also adults' past mobility has a positive effect on being idle (in the first two columns), while for school attendance what matters is only current absence. This could point towards two different problems: lack of supervision on one side, and the fact that adults' past migration affects children's idleness in a more lasting way (they stop attending school when adults are absent, and then do not go back when adults return).

INSERT TABLE 9

As for the other control variables, the number of children living in the same household increases the probability of being idle, validating to some extent the general assumptions of competition over households resources. Women's education, on the contrary, has a negative effect on the probability of being idle. Household expenditure quintiles are all significantly negative. These results hold true when estimation is run using the two-side censoring model (see Table 10).

INSERT TABLE 10

In sum, results for idle children are consistent with those for school attendance. Even with all the caveats on the estimation problems, we can conclude, consistently with other pieces of evidence (see, for example, Biggeri et al (2003)), that the main issue opposing children's schooling is children reporting to do nothing, and not child labour.

Conclusions

We investigate whether household migration affects children's primary education in Uganda in terms of school attendance and school completion. Panel data and retrospective information on household members' migration allow us to overcome the usual problems of unobserved heterogeneity and endogeneity of the migration decisions.

Our findings for school attendance show that migration has a composite effect: if children move, this has a positive effect, if adults move and children are left behind, this has a negative effect on school attendance. This evidence on the effect of child migration supports the hypothesis that parents, when moving with their children or sending them to other households, make rational decisions that aim, among other possible motivations, also at improving children's access to education. The distinction of adults' current from past migration while leaving children behind highlights two facts. First, current absence of adults has negative effects on school attendance, probably due to the lack of supervision of children, and to the fact that they have to substitute adults in household chores. This is in line with the evidence for other countries. Second, past migration of adults does not affect school attendance currently, but negatively adds to the educational background of children, increasing the probability that children are currently idle.

Primary school completion, instead, is not affected by migration, neither of children nor of adults. This evidence seems to suggest that, notwithstanding the household efforts to guarantee access to schooling services, the final result, in terms of schooling outcomes of children, is very poor. Not surprisingly, the issue about how to improve the quality of the supply of education occupies the first places of the policy agenda of many African countries.

Acknowledgements

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Table 2: Distributions of migration and schooling variables in the cross sections

	Absolute Frequency	Percentage %
Moved in the last 5 years (children 6-15):		
2005-06	463	9.20
2009-10	903	16.85
2010-11	829	14.76
2011-12	738	12.62
Moved in the last 5 years (adult):		
2005-06	1,663	20.33
2009-10	1,216	15.53
2010-11	1,116	10.90
2011-12	1,100	8.95
Attending school (children 6-15)		
2005-06	4,325	85.92
2009-10	4,668	81.68
2010-11	4,303	76.62
2011-12	4,707	80.50
Completed Primary School (children 11-15)		
2005-06	258	11.92
2009-10	267	11.01
2010-11	241	10.72
2011-12	255	10.43

Source: Authors' elaborations on UNPS data

Figure 1: Gross Enrolment Ratio and Primary Completion Rate, Uganda
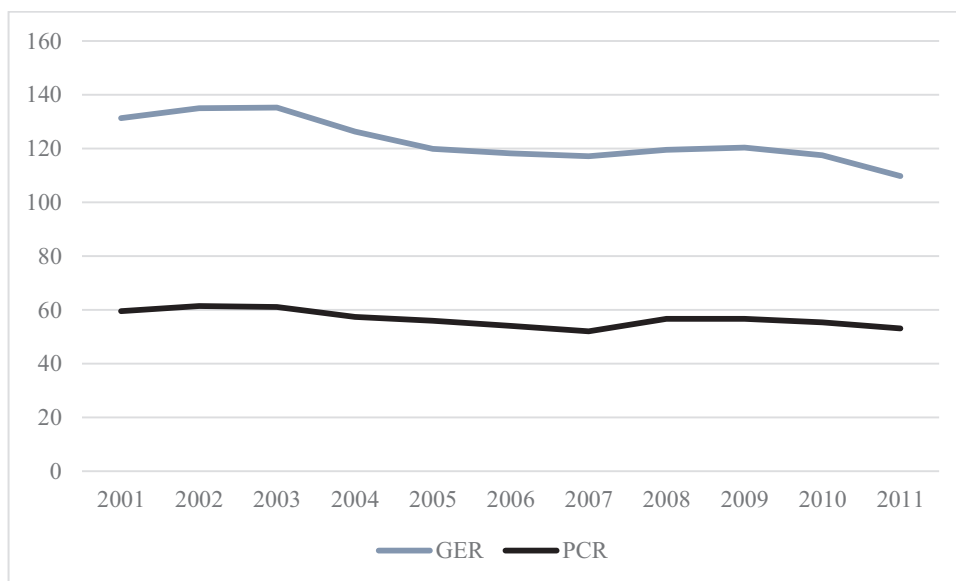
Note. GER: Gross enrolment ratio in primary education, both sexes (%);
PCR: gross intake ratio to the last grade of primary education, both sexes (%).
Source: UNESCO Institute for Statistics, at: http://data.uis.unesco.org/

Table 3: Descriptive Statistics of our Sample Variables

	Mean			
	(St.Dev.)			
	2005-06	**2009-10**	**2010-11**	**2011-12**
Dependent variables:				
Average school attendance	.534	.482	.306	.331
	(.286)	(.265)	(.218)	(.221)
Average elementary completion	.124	.211	.222	.127
	(.237)	(.277)	(.288)	(.309)
Rate of idle children	.008	.014	.008	.005
	(.070)	(.090)	(.067)	(.050)
Mobility variables:				
Child has moved	.095	.186	.189	.134
	(.293)	(.389)	(.392)	(.341)
Adult has moved	.285	.235	.227	.197
	(.452)	(.424)	(.419)	(.398)
Child is absent	.099	.172	.261	.335
	(.299)	(.377)	(.439)	(.472)
Adult is absent	.191	.351	.585	.731
	(.392)	(.477)	(.492)	(.444)
Child left for education	.024	.038	.044	.035
	(.154)	(.191)	(.206)	(.183)
Child left to work	.007	.006	.005	.002
	(.082)	(.075)	(.069)	(.046)

	Mean			
	(St.Dev.)			
	2005-06	**2009-10**	**2010-11**	**2011-12**
Control variables:				
Average child age	9.63	9.86	9.91	9.79
	(2.34)	*(2.25)*	*(2.22)*	*(2.23)*
Average child sex (1 is female)	.347	.33	.355	.375
	(.276)	*(. 257)*	*(.220)*	*(.231)*
N. of under 6	1.030	.986	1.013	1.04
	(.998)	*(.993)*	*-1.010*	*(1.15)*
N. of adult	2.782	3.388	3.931	4.00
	-1.649	*-1.975*	*-2.387*	*(2.86)*
N. of children 6-15	2.040	2.322	2.461	1.83
	-1.741	*-1.771*	*-1.826*	*(1.75)*
Age of head	42.43	46.36	47.0	46.17
	(14.83)	*(14.71)*	*(14.65)*	*(15.21)*
First expenditure quintile	.199	.188	.215	.190
	(.399)	*(.390)*	*(.411)*	*(.392)*
Second expenditure quintile	.206	.204	.206	.172
	(.404)	*(.403)*	*(.404)*	*(.377)*
Third expenditure quintile	.212	.204	.199	.165
	(.409)	*(.403)*	*(.399)*	*(.371)*
Fourth expenditure quintile	.198	.188	.195	.165
	(.399)	*(.391)*	*(.396)*	*(.371)*
Fifth expenditure quintile	.184	.193	.183	.371
	(.388)	*(.394)*	*(.387)*	*(.373)*
Remittances (log)	6.155	6.322	6.352	9.716
	-2.507	*-2.851*	*-2.914*	*-1.999*
Rate of women with primary	.297	.287	.268	.245
	(.420)	*(.398)*	*(.377)*	*(.356)*
Head education: secondary	.249	.239	.261	.258
	(.432)	*(.427)*	*(.439)*	*(.438)*
Head education: primary	.159	.151	.167	.146
	(.366)	*(.358)*	*(.374)*	*(.353)*
Head education: less than primary	.406	.421	.418	.398
	(.491)	*(.494)*	*(.493)*	*(.490)*
Head education: no education	.185	.189	.153	.176
	(.389)	*(.392)*	*(.36)*	*(.381)*
N	*2176*	*2176*	*2176*	*2176*

Table 4: Variables Mean for Migrant and Non-MigrantHH

	Non-Migrant HH	Migrant HH
Average Schooling		
2005	0.5423	0.5256
2009	0.4990	0.4711*
2010	0.3394	0.2961***
2011	0.3743	0.3211***
Average Primary completion		
2005	0.0972	0.1080
2009	0.0947	0.0784*
2010	0.1101	0.0710***
2011	.0433	0.1446***
Rate of Idle Children		
2005	0.1723	0.1410*
2009	0.2343	0.1753***
2010	0.2823	0.2560
2011	0.0040	0.0055
Average child age		
2005	9.33	9.96***
2009	9.54	10.06***
2010	9.40	10.07***
2011	9.27	9.91***
Average female		
2005	0.3431	0.3517
2009	0.3202	0.3359
2010	0.3573	0.3542
2011	0.3661	0.3774
Number of children 0-5		
2005	1.03	1.03
2009	1.01	0.96
2010	1.02	1.01
2011	1.29	0.99***
Number of adults		
2005	2.42	3.18***
2009	2.67	3.86***
2010	2.41	4.45***
2011	2.42	4.33***
Number of children 6-15		
2005	1.95	2.15**
2009	2.11	2.46***
2010	2.15	2.57***
2011	1.82	1.84
Average age of head of HH		
2005	42.76	42.07
2009	45.24	47.10**
2010	44.87	47.72***
2011	42.51	47.41***

Significance level: .1+ .05* .01** .001***

Rate of Women with primary ed.			
	2005	0.2440	0.3540***
	2009	0.2355	0.3204***
	2010	0.2229	0.2828**
	2011	0.2102	0.2530*
Remittances log			
	2005	5.84	6.88***
	2009	5.71	7.29***
	2010	5.56	7.17***
	2011	9.47	9.80***
First expenditure quintile			
	2005	0.2339	0.1608***
	2009	0.2488	0.1468***
	2010	0.2586	0.1996**
	2011	0.2224	0.1806*
Second expenditure quintile			
	2005	0.2365	0.1715***
	2009	0.2477	0.1751***
	2010	0.2658	0.1855***
	2011	0.2543	0.1543***
Third expenditure quintile			
	2005	0.2200	0.2027
	2009	0.2281	0.1873*
	2010	0.2061	0.1959
	2011	0.1860	0.1603
Fourth expenditure quintile			
	2005	0.1913	0.2057
	2009	0.1613	0.2064**
	2010	0.1537	0.2089**
	2011	0.1632	0.1651
Fifth expenditure quintile			
	2005	0.1183	0.2583***
	2009	0.1060	0.2500***
	2010	0.1139	0.2064***
	2011	0.1290	0.1750*
Head education: no education			
	2005	0.2197	0.1442***
	2009	0.2222	0.1652***
	2010	0.1938	0.1380**
	2011	0.1865	0.1745
Head education: less than primary			
	2005	0.4459	0.3591***
	2009	0.4507	0.4002*
	2010	0.4483	0.4073+
	2011	0.7647	0.7987+
Head education: primary			
	2005	0.1433	0.1777*
	2009	0.1485	0.1524
	2010	0.1724	0.1662
	2011	0.3283	0.4257***
Head education: secondary			
	2005	0.1903	0.3190***
	2009	0.1796	0.2823***
	2010	0.1856	0.2885***
	2011	0.1746	0.2799***

Significance level: .1+ .05* .01** .001***

Table 5: School attendance rate of children aged 6 to 15 in the household - linear probability model

	A	B	C
Child has moved	0.0303**	0.0301**	
	(0.00939)	(0.00938)	
Adult has moved	-0.0136	-0.0145	-0.00715
	(0.00898)	(0.00896)	(0.00850)
Child is absent		0.0156*	0.0157*
		(0.00712)	(0.00715)
Adult is absent		-0.0213**	-0.0212**
		(0.00754)	(0.00754)
Child has moved for educ.			0.0324*
			(0.0152)
Child has moved to work			0.00368
			(0.0296)
Child age	0.124***	0.124***	0.126***
	(0.0184)	(0.0184)	(0.0184)
Child age sq.	-0.00554***	-0.00554***	-0.00563***
	(0.000898)	(0.000899)	(0.000899)
Gender	0.0451	0.0468+	0.0475+
	(0.0282)	(0.0282)	(0.0283)
Head ed. low	-0.00525	-0.00597	-0.00591
	(0.00803)	(0.00802)	(0.00802)
Head ed. primary	-0.0119	-0.0123	-0.0120
	(0.00871)	(0.00870)	(0.00873)
Head ed. secondary	-0.0138	-0.0136	-0.0127
	(0.0153)	(0.0152)	(0.0152)
Av. women with primary ed.	0.0567***	0.0549***	0.0530***
	(0.0147)	(0.0148)	(0.0148)
No. of children 0-5	0.00167	0.00119	0.00132
	(0.00445)	(0.00443)	(0.00445)
No. of children 6-15	-0.0793***	-0.0799***	-0.0791***
	(0.00405)	(0.00407)	(0.00405)
No. of adults	-0.0197***	-0.0181***	-0.0182***
	(0.00262)	(0.00264)	(0.00264)
2nd Expenditure quint.	0.0123	0.0112	0.0103
	(0.0103)	(0.0103)	(0.0103)
3rd Expenditure quint.	0.00946	0.00912	0.00837
	(0.0109)	(0.0109)	(0.0109)
4th Expenditure quint.	0.0336**	0.0332**	0.0320**
	(0.0119)	(0.0119)	(0.0119)
5th Expenditure quint.	0.0136	0.0133	0.0120
	(0.0138)	(0.0138)	(0.0138)
Log of remittances	0.000572	0.000276	0.000250
	(0.00265)	(0.00264)	(0.00265)
2009-10	-0.0314***	-0.0296***	-0.0268**
	(0.00863)	(0.00875)	(0.00871)
2010-11	-0.182***	-0.178***	-0.176***
	(0.00916)	(0.00970)	(0.00967)
2011-12	-0.174***	-0.165***	-0.163***
	(0.0280)	(0.0281)	(0.0281)
Constant	0.106	0.110	0.101
	(0.0907)	(0.0907)	(0.0908)
Observations	7217	7217	7217
R2	0.303	0.305	0.304
Adjusted R2	0.301	0.303	0.301

Significance level: .1+ .05* .01** .001***. Robust S.E. in parenthesis.

Table 6: School attendance rate of children aged 6 to 15 in the household - two-side censoring model

	A	B	C
Child has moved	0.0359***	0.0358***	
	(0.0106)	(0.0105)	
Adult has moved	-0.0157	-0.0169+	-0.00790
	(0.0100)	(0.00996)	(0.00939)
Child is absent		0.0240**	0.0239**
		(0.00809)	(0.00813)
Adult is absent		-0.0235**	-0.0237**
		(0.00867)	(0.00868)
Child has moved for educ.			0.0376*
			(0.0170)
Child has moved to work			-0.00439
			(0.0364)
Child age	0.138***	0.138***	0.140***
	(0.0239)	(0.0240)	(0.0242)
Child age sq.	-0.00608***	-0.00609***	-0.00618***
	(0.00116)	(0.00116)	(0.00117)
Gender	0.0697+	0.0724*	0.0733*
	(0.0356)	(0.0355)	(0.0357)
Head ed. low	-0.00253	-0.00332	-0.00343
	(0.00925)	(0.00919)	(0.00921)
Head ed. primary	-0.00642	-0.00701	-0.00628
	(0.00977)	(0.00971)	(0.00976)
Head ed. secondary	-0.0113	-0.0112	-0.00937
	(0.0168)	(0.0168)	(0.0168)
Av. women with primary ed.	0.0719***	0.0701***	0.0678***
	(0.0161)	(0.0160)	(0.0161)
No. of children 0-5	-0.00255	-0.00300	-0.00288
	(0.00502)	(0.00502)	(0.00502)
No. of children 6-15	-0.0957***	-0.0969***	-0.0956***
	(0.00516)	(0.00523)	(0.00520)
No. of adults	-0.0226***	-0.0208***	-0.0208***
	(0.00324)	(0.00327)	(0.00330)
2nd Expenditure quint.	0.00708	0.00611	0.00520
	(0.0120)	(0.0120)	(0.0119)
3rd Expenditure quint.	0.000705	0.000822	-0.000162
	(0.0128)	(0.0127)	(0.0127)
4th Expenditure quint.	0.0288*	0.0290*	0.0277*
	(0.0136)	(0.0135)	(0.0135)
5th Expenditure quint.	0.00382	0.00416	0.00245
	(0.0157)	(0.0155)	(0.0156)
Log of remittances	0.000302	0.000236	0.000427
	(0.00132)	(0.00132)	(0.00132)
2009	-0.0420***	-0.0407***	-0.0374***
	(0.00947)	(0.00957)	(0.00958)
2010	-0.219***	-0.215***	-0.213***
	(0.0103)	(0.0110)	(0.0110)
2011	-0.207***	-0.201***	-0.200***
	(0.0135)	(0.0139)	(0.0139)
Observations	*7217*	*7217*	*7217*

Significance level: .1+ .05* .01** .001***. Robust S.E. in parenthesis.

Table 7: Primary school completion rate of children aged 11 to 15 in the household - linear probability model

	A	B	C
Child has moved	0.0161	0.0163	
	(0.0122)	(0.0132)	
Adult has moved	0.00624	0.00578	0.0103
	(0.0118)	(0.0128)	(0.0123)
Child is absent		0.0268*	0.0267*
		(0.0106)	(0.0106)
Adult is absent		-0.000320	-0.000226
		(0.0105)	(0.0105)
Child has moved for educ.			0.00911
			(0.0232)
Child has moved to work			0.0490
			(0.0972)
Child age	-0.0518	-0.0545	-0.0538
	(0.0323)	(0.0364)	(0.0364)
Child age sq.	0.00281+	0.00292+	0.00288+
	(0.00146)	(0.00168)	(0.00168)
Gender	0.00289	0.00702	0.00674
	(0.0297)	(0.0355)	(0.0355)
Head ed. low	-0.0180	-0.0181	-0.0184
	(0.0114)	(0.0119)	(0.0119)
Head ed. primary	0.00605	0.00572	0.00582
	(0.0130)	(0.0166)	(0.0166)
Head ed. secondary	0.0184	0.0184	0.0180
	(0.0195)	(0.0236)	(0.0236)
Av. women with primary ed.	0.108***	0.107***	0.106***
	(0.0193)	(0.0230)	(0.0230)
No. of children 0-5	-0.00437	-0.00491	-0.00509
	(0.00592)	(0.00539)	(0.00540)
No. of children 6-15	-0.0156***	-0.0169***	-0.0165***
	(0.00464)	(0.00463)	(0.00461)
No. of adults	0.00508	0.00517	0.00519
	(0.00344)	(0.00369)	(0.00368)
2nd Expenditure quint.	-0.00325	-0.00268	-0.00315
	(0.0133)	(0.0106)	(0.0106)
3rd Expenditure quint.	0.0119	0.0129	0.0122
	(0.0142)	(0.0123)	(0.0123)
4th Expenditure quint.	0.00730	0.00794	0.00709
	(0.0156)	(0.0143)	(0.0142)
5th Expenditure quint.	0.0327+	0.0331+	0.0320+
	(0.0184)	(0.0190)	(0.0189)
Log of remittances	-0.00255	-0.00253	-0.00246
	(0.00388)	(0.00520)	(0.00520)
2009	0.104***	0.101***	0.103***
	(0.0109)	(0.0104)	(0.0105)
2010	0.128***	0.122***	0.123***
	(0.0119)	(0.0125)	(0.0125)
2011	0.0688+	0.0627	0.0627
	(0.0412)	(0.0520)	(0.0519)
Constant	0.316+	0.332+	0.329+
	(0.177)	(0.197)	(0.197)
Observations	*4855*	*4855*	*4855*
R2	0.100	0.103	0.102
Adjusted R2	-0.461	0.099	0.098

Significance level: .1+ .05* .01** .001***. Robust S.E. in parenthesis.

Table 8: Primary school completion rate of children aged 11 to 15 in the household - two-side censoring model

	A	B	C
Child has moved	0.0299	0.0315	
	(0.0310)	(0.0306)	
Adult has moved	0.0333	0.0345	0.0412
	(0.0303)	(0.0297)	(0.0295)
Child is absent		0.0514*	0.0523*
		(0.0247)	(0.0248)
Adult is absent		0.0102	0.00967
		(0.0258)	(0.0262)
Child has moved for educ.			0.00210
			(0.0515)
Child has moved to work			0.135
			(0.147)
Child age	-0.0821	-0.0950	-0.0915
	(0.0911)	(0.0916)	(0.0926)
Child age sq.	0.00446	0.00501	0.00484
	(0.00413)	(0.00414)	(0.00417)
Gender	-0.00271	0.000417	0.00200
	(0.0909)	(0.0926)	(0.0946)
Head ed. low	0.00317	0.00392	0.00421
	(0.0383)	(0.0389)	(0.0386)
Head ed. primary	0.0549	0.0548	0.0565
	(0.0383)	(0.0377)	(0.0382)
Head ed. secondary	0.0587	0.0605	0.0586
	(0.0480)	(0.0476)	(0.0483)
Av. women with primary ed.	0.214***	0.210***	0.211***
	(0.0493)	(0.0506)	(0.0510)
No. of children 0-5	-0.0134	-0.0139	-0.0146
	(0.0144)	(0.0146)	(0.0147)
No. of children 6-15	-0.0420***	-0.0456***	-0.0442***
	(0.0126)	(0.0127)	(0.0128)
No. of adults	0.00960	0.00889	0.00907
	(0.00928)	(0.00938)	(0.00924)
2nd Expenditure quint.	-0.0155	-0.0102	-0.0117
	(0.0392)	(0.0395)	(0.0400)
3rd Expenditure quint.	0.0281	0.0357	0.0334
	(0.0404)	(0.0409)	(0.0413)
4th Expenditure quint.	0.0316	0.0368	0.0355
	(0.0392)	(0.0391)	(0.0399)
5th Expenditure quint.	0.101*	0.104*	0.102*
	(0.0443)	(0.0445)	(0.0447)
Log of Remittances	-0.00295	-0.00264	-0.00261
	(0.00349)	(0.00356)	(0.00356)
2009	0.254***	0.248***	0.252***
	(0.0260)	(0.0260)	(0.0265)
2010	0.322***	0.305***	0.309***
	(0.0310)	(0.0327)	(0.0329)
2011	0.0947	0.0785	0.0822
	(0.0594)	(0.0611)	(0.0614)
Observations	*4855*	*4855*	*4855*

Significance level: .1+ .05* .01** .001***. Robust S.E. in parenthesis.

Table 9: Rate of idle children aged 6 to 15 in the household - linear probability model

	A	B	C
Child has moved	-0.0420***	-0.0419***	
	(0.0104)	(0.0104)	
Adult has moved	0.0204*	0.0209*	0.0106
	(0.00961)	(0.00959)	(0.00911)
Child is absent		-0.0161*	-0.0162*
		(0.00800)	(0.00801)
Adult is absent		0.0115	0.0116
		(0.00875)	(0.00875)
Child has moved for educ.			-0.0338*
			(0.0144)
Child has moved to work			0.00882
			(0.0394)
Child age	-0.217***	-0.217***	-0.220***
	(0.0184)	(0.0184)	(0.0184)
Child age sq.	0.00956***	0.00958***	0.00970***
	(0.000892)	(0.000892)	(0.000893)
Gender	-0.00567	-0.00691	-0.00764
	(0.0233)	(0.0233)	(0.0234)
Head ed. low	0.0225**	0.0230**	0.0229**
	(0.00871)	(0.00870)	(0.00872)
Head ed. primary	0.0393***	0.0397***	0.0392***
	(0.00957)	(0.00957)	(0.00960)
Head ed. secondary	0.0181	0.0181	0.0170
	(0.0153)	(0.0153)	(0.0152)
Av. women with primary ed.	-0.0326*	-0.0313*	-0.0290*
	(0.0144)	(0.0144)	(0.0143)
No. of children 0-5	-0.00718	-0.00679	-0.00697
	(0.00502)	(0.00502)	(0.00502)
No. of children 6-15	0.0331***	0.0338***	0.0324***
	(0.00357)	(0.00360)	(0.00360)
No. of adults	0.00244	0.00156	0.00165
	(0.00259)	(0.00264)	(0.00263)
2nd Expenditure quint.	-0.0240*	-0.0236*	-0.0222*
	(0.0112)	(0.0112)	(0.0112)
3rd Expenditure quint.	-0.0314**	-0.0314**	-0.0304*
	(0.0121)	(0.0120)	(0.0121)
4th Expenditure quint.	-0.0646***	-0.0644***	-0.0628***
	(0.0134)	(0.0133)	(0.0133)
5th Expenditure quint.	-0.0527***	-0.0524***	-0.0506**
	(0.0157)	(0.0157)	(0.0157)
Log of remittances	0.00214	0.00233	0.00233
	(0.00252)	(0.00252)	(0.00253)
2009	0.0386***	0.0383***	0.0343***
	(0.00907)	(0.00920)	(0.00915)
2010	0.0763***	0.0754***	0.0722***
	(0.0104)	(0.0110)	(0.0109)
2011	-0.172***	-0.176***	-0.178***
	(0.0263)	(0.0267)	(0.0267)
Constant	1.249***	1.247***	1.261***
	(0.0915)	(0.0916)	(0.0916)
Observations	*7217*	*7217*	*7217*
R2	0.227	0.227	0.225
Adjusted R2	0.224	0.225	0.223

Significance level: .1+ .05* .01** .001***. Robust S.E. in parenthesis.

Table 10: Rate of idle children aged 6 to 15 in the household - two-side censoring model

	A	B	C
Child has moved	-0.168***	-0.166***	
	(0.0388)	(0.0381)	
Adult has moved	0.0629+	0.0622+	0.0156
	(0.0329)	(0.0328)	(0.0301)
Child is absent		-0.0746**	-0.0771**
		(0.0255)	(0.0261)
Adult is absent		0.0477+	0.0492+
		(0.0288)	(0.0296)
Child has moved for educ.			-0.168**
			(0.0582)
Child has moved to work			-0.0386
			(0.0796)
Child age	-0.608***	-0.612***	-0.627***
	(0.0736)	(0.0728)	(0.0753)
Child age sq.	0.0260***	0.0261***	0.0269***
	(0.00398)	(0.00392)	(0.00407)
Gender	-0.0706	-0.0778	-0.0978
	(0.115)	(0.108)	(0.110)
Head ed. low	0.0111	0.0139	0.0147
	(0.0600)	(0.0557)	(0.0551)
Head ed. primary	0.0343	0.0437	0.0376
	(0.0797)	(0.0743)	(0.0747)
Head ed. secondary	0.0686	0.0656	0.0613
	(0.103)	(0.0955)	(0.0969)
Av. women with primary ed.	-0.149*	-0.140*	-0.110+
	(0.0606)	(0.0622)	(0.0606)
No. of children 0-5	0.0196	0.0203	0.0150
	(0.0162)	(0.0158)	(0.0163)
No. of children 6-15	0.0895***	0.0922***	0.0881***
	(0.0142)	(0.0147)	(0.0145)
No. of adults	0.00412	-0.000273	0.00249
	(0.0121)	(0.0138)	(0.0132)
2nd Expenditure quint.	-0.0726*	-0.0771*	-0.0720*
	(0.0337)	(0.0326)	(0.0322)
3rd Expenditure quint.	-0.0853*	-0.0924*	-0.0847*
	(0.0373)	(0.0376)	(0.0374)
4th Expenditure quint.	-0.170***	-0.178***	-0.172***
	(0.0426)	(0.0413)	(0.0411)
5th Expenditure quint.	-0.144*	-0.152*	-0.134*
	(0.0601)	(0.0612)	(0.0646)
Log of Remittances	-0.00113	-0.000379	-0.00112
	(0.00458)	(0.00450)	(0.00452)
2009	0.145***	0.148***	0.132***
	(0.0300)	(0.0295)	(0.0301)
2010	0.221***	0.221***	0.210***
	(0.0369)	(0.0371)	(0.0380)
2011	-1.953***	-1.939***	-2.071
	(0.159)	(0.155)	0
Observations	*7217*	*7217*	*7217*

Significance level: .1+ .05* .01** .001***. Robust S.E. in parenthesis.