Does international migration affect school attendance in home countries? Evidence from Cameroon.

Mathias KUEPIE
Researcher at LISER
Luxembourg Institute of Socio-Economic Research
and
Associate Researcher at UMR DIAL 225 - IRD & Université Paris-Dauphine
11 porte des sciences, Campus Belval, L- 4364 Esch-sur-Alzette Luxembourg
email: mathias.kuepie@ceps.lu

Abstract

The objective of this study is to analyze the impact of international migration on educational outcomes of left behind households' children in Cameroon. To this end, we use a survey purposely designed to capture the impact of international migration on socioeconomic outcomes. Using propensity matching and weighted regression methods, estimations show that the impact of migration on children's school attendance is far from being positive: while the overall effect is not significant, we highlight a detrimental one when we consider migrants having a parental status before migration. Even remittances do not alleviate this detrimental. This result, which is more pronounced for boys than girls, is in line with the family disruption hypothesis put forward in the literature to explain the negative effect of migration on educational outcomes.

I. Introduction.

International migration, in the context of globalization, is becoming increasingly important and is giving rise to intense debate about it positive or negative consequences on the development of emigration countries[1]. Negative consequences are about brain drain which is the fact that developed countries attract the most educated young people from poor countries and hence, jeopardize their development. As Cameroon is concerned, this assertion can be supported by the fact that about 15% of young people with a university degree are out of the Country, mainly in Europe and USA (Docquier and Rapoport, 2008). In some key sectors like research in science and technology, 88% of Cameroonian researchers are in USA, and lest than 12% work in Cameroon (Docquier and Rapoport, 2008). But if international migration, through brain drain, can jeopardize the development of home country, it can also generate positive effect through the so-called "brain gain". That is migrants can gain experience and money and in turn, contribute to the development of their country of origin through technological/knowledge transfer and through remittances. In the case of Cameroon, remittances are still relatively low : 148 million US $ in 2010, which is less than 1% of the GDP (World Bank, 2011); but it's far from being negligible. Moreover, given that remittances are transferred from individuals to individuals, they can be more efficient than others financial transfer like International Development Aid (IDA).

In this study, we are interested in the impact of migration one educational outcomes of left behind households' children. This question is very important since households in Cameroon, like in other poor countries, face important budget constraints and at the same time, cannot rely on a public social redistribution system to cover education costs. Intuitively, being able to rely on remittance of relatives living abroad in a more favorable economic environment can then help relaxing the household resources constraints. But as for the macro level, the literature review on the effect of migration and remittances on children educational outcomes shows mixed results. While some studies show that children from households benefiting from remittances are more successful in school (cf. Cox & Ureta, 2003, Borraz, 2005, Calero C., Bedi A.S, Sparrow R (2009), Ascota(2006) etc.), others lead to more nuanced and even inversed results, that is children are more successful in households without migrations (Antman, 2011; McKenzie & Rapoport 2011; Kusumawardhani, 2012; etc.). These counterintuitive results are explained by the fact that migration has a "depressive" effect on household organization, which is no necessary counterbalanced by the remittances. In some case, households with migrants, anticipating less return to migrant education, may put less value on education than non-migrants households (McKenzie and Rapoport, 2011).

Our objective in this study is to assess to which extent households with migrants take or not advantage in order to enhance the children educational capital in the special case of Cameroon. As we previously mentioned, although Cameroon does not belong to the African groups of countries with a long tradition of massive international migration, the phenomenon is going increasingly (World Bank 2001) and concerns mostly educated young people. Until now, its impact on households outcomes have not yet been assessed. Our aim is to contribute to filling this evidence gap, especially as education is concerned. To achieve this objective, we make use of an original and

[1] It is important to mention that the debate is also intensive in host countries about the positive or negative contribution of immigrants to the economy growth and the equilibrium of the welfare system.

fresh survey called "Survey on impact of South-South[2] migration on Cameroon's Development" conducted in 2012 by the Observatory on migrations of African Caribbean Organization, in collaboration with Institute for demographic training and research of Yaounde. The survey was purposely designed to include enough migrants' households in order to make it possible the assessment of the impact of migration on various households' outcomes, including children education (cf. section IV). Rigorously assessing the impact of migration on households' outcomes is not a simple exercise, because of possible selectivity of the migration process. So it's important to resort to appropriate econometric methods to properly evaluate the impact of migration and remittances on households' outcomes. In this study, we use the propensity score matching (with the estimation of the matching score based on pre-migration variables) and weighted regressions to overcome biases in estimations.

Results show that the impact of migration on children's school attendance is far from being positive: while the overall effect is not significant, we highlight a detrimental one when we consider migrants having a parental status before migration. Even the existence of remittance do not alleviate this detrimental. This result, which is more pronounced for boys than girls, is in line with the family disruption hypothesis put forward in the literature to explain the negative effect of migration on educational outcomes.

The remainder of this study is organized as follow: in the second section, we present a literature review of the impact of migration and remittance on education outcomes and based on this review, we formalize a theoretical framework which help understanding the undergoing mechanisms. The third section is devoted to the methodology adopted (Survey and data description, empirical estimation strategy). The fourth part presents the results of estimations and the last concludes.

II. Literature review and theoretical framework.

The analysis of the link between migration, remittances and school achievement of left behind households' children has given rise to numerous studies, especially in Latina America. It results from these studies that two mechanisms drive the effect of migration and remittances on children schooling: the "budget constraint relaxing channel" and the "family disruption channel". Some authors also mention the change in the "expectation of education return channel[3]". We will not consider the latter in this study.

II.1 The budget constraint relaxing channel.

The idea here is that when migrants transfer money to the left behind household, it relaxes the liquidity constraint faced by that household, allowing it to be able to invest more in the education of children (cf. Mckenzie and Rapoport, 2011; Kusumawardhani, 2012 for a precised theoretical formulation of the undergoing mechanism). A lot of studies, especially in the Latina America have

[2] But even though the main objective of the survey was to assess the "South-South migration" the sample was designed to make it possible to also analyze the south-North migration (cf. methodological section IV).

[3] This Channel is also called the incentive channel (cf. Docquier et Rapoport, 2007) in the sense that having a migrant can increase the expected return to education through migration perspective of left behind households' children. But this is truth only if the migrant has a good experience in the valorization of his education in host country.

provided empirical evidence supporting budget constraint relaxing mechanism. It's the case of Cox and Ureta (2003), Acosta (2006) for Salvador, Yang (2008) for Philipine, López-Córdova E. (2005), Borraz (2005) for Mexico, Calero, Bedi and Sparrow (2009) for Equator. Given that liquidity constraints can be more binding for some category of children than other, the positive effect of remittance have been found to be heterogeneous in some studies. In Dominican Republic, Amuedo-Dorantes (2010) shows that remittances increase girls schooling, compared to boys'. Similar results were also highlighted by Calero, Bedi and Sparrow (2009) in the case of Equador; Borraz (2005), Mckenzie and Rapoport (2011) for Mexico, among others. These results show that remittances can contribute to reducing gender inequalities and so lead to more fair societies. Unfortunately, before yielding remittances, migration first of all leads to a change in structure of the initial household and that change can have damaging effects on children schooling.

II.2 The family disruption channel

When a household member migrate in another country or even in another locality in the same country, his departure can lead to a disequilibrium in the household organization and hence generate some shortcomings among which children educational failures (Hanson and Woodruff ,2003; Lucas, 2005). There are a lot of studies which have provided evidence of this negative effect. We can quote, among others, for Mexico Antman(2011) and McKenzie & Rapoport(2011); for Dominican Republic Ascota et al (2007); De Brauw and Giles (2006) for China; and Kusumawardhani (2012) for Senegal. It is important to underline that the "disruption channel" covers differents sub-mechanims, depending on which household member leaves. When it is the parent who migrates, the negative effect may be mainly caused by the lack of supervision (Park et al., 2010; Mansoor, and Quillin, 2007). In the short term, the household may also face a resource loss which may lead to an increase in child labor (McKenzie and H. Rapoport, 2011). When it is child of school age who leaves the household, the others may have to share the part of chores done by the migrant child and hence devote less time to education. But if the migrant member was inactive or constituted a burden for the household, his departure can on contrary lead to a better off of remaining members.

From the above literature review, we can draw a theoretical framework which formalizes the link between migration and left behind households' children education.

let

- FR^* =the household financial resources that can be devoted to education;

- NFR^*=the household non financial resources that can be devoted to education (e.g: parental time)

In the absence of migration we suppose that the household optimal education demand (E*) is a function of the two following variables:

$E^*=f(FR^*, NFR^*)$ (EQ 1).

Under Constraints

$FR^*<FR$ (C1);

$NFR^* < NFR$ (C2);

where FR and NFR are the total financial resource and the total non financial resources of the household.

E* is a non decreasing function of each argument($\frac{\partial E^*}{\partial x} \geq 0; x = FR^*, NFR^*$).

The signification of the two constraints C1 and C2 is straightforward. They express the fact that a household cannot devote all it resources (financial and non financial) to education, because it also produces other essential goods.

When a member leaves the household and migrates into another place or country, the two parameters FR^*, NFR^* can potentially be affected, as the literature review suggests. In the classical approach, migration results in an increase of the households financial resources, due to remittances and hence a relaxation of resource constraint (let say from FR to FR^m). Households can then allocate these additional resources to children education. But for this to be effective, it's necessary that the desired household education level (E^d) being greater that the optimal level (E^*) under resource constraint. If it's not the case, (that is under FR, $E^*=E^d$) then household will invest the additional resource on something else than education. It's also possible that migration, in the short run, lead to a reduction of FR^*, due to the migration cost.

Migration also results in a reduction of the household size and structure due to the departure of the migrating member. If the latter used to contribute to the household resources, his absence can then lead to a reduction of the household capacity to produce these resources. If the contribution was trough household chores, there can be a reallocation of these chores within remaining members. For children, it means more competition between household activities and education. This competition can lead either to a withdrawal from school or reduction of time devoted to and less achievement. If the migrating member was directly involved in supervising and guiding children, his departure directly affect children education outcomes, both formal and informal. So everything being equal, migration will lead to a decrease of NFR.

Finally, these literature review and theoretical framework show that the mechanisms driving the migration impacts on children's education are relatively complex. In the methodological part, we explain how we handle this complexity.

III. Data and Methodology

III.1 Data

The data used in this study are those of the survey on " the impact of South-South migration on Development in Cameroon (IMDC2012) " conducted by the Institute for Demographic Training and Research (IFORD) in 2012. It covers all the ten regions of Cameroon, plus the two major cities Yaounde and Douala. Its main objective was to identify and measure the effects of international migration on Cameroonian households. The survey collects information on many socio-economic and demographic characteristics of all selected households members. The sample size consists of 1,235 households and 5863 individuals. Regarding migration status, households can be classified as following:

- Households without migrants (33.8%) ;
- Households with at least an international emigrant (31.3%) ;

- Households with at least one returnee (17.9%) ;
- Households with at least one international immigrant (10.4%) ;
- Households with at least 2 different types of migrants (6.6%).

In order to be able to compare migrants' and non migrants' households prior to migration, a certain number of individuals and households characteristics were collected both at the time of the survey and retrospectively, five years before the survey. It is principally the case of households' living conditions and individuals' employment status. So with these "pre-treatments" characteristics, we are able to compare migrants' and non migrants' households before migration occurs. The socio-demographic characteristics of households' members in migration were also collected: age, gender, relationship to the household head, economic activity before and after migration, migration duration and remittances over a period of one year (both from the household to the migrant and from the migrant to the household) etc.

III.2 Measurement of the main variables.

Education

In this study, we measure children education through school attendance, which indicates if a child is at school or not. We consider young children aged 6-17, who are supposed to be in the primary or in lower secondary school. The rationale behind the choice of this age interval is following: older children (aged above 17) who perform well in school may have already finished the secondary school and eventually left the household to join the university or migrate, especially if they already have a household member abroad. So focusing on the 6-17 age interval helps us to control this kind of selection bias. Finally our analysis sample is composed of about 1250 persons.

Migrants' characteristics.

In many studies, only the migration status of the household (with or without migrant) and the amount of the remittances received are recorded. In our survey, in addition to these basic variables, information was recorded on other migrants' socio-demographic characteristics: relationship to the household head, age, gender, employment status before migration. All the financial flows between households and migrant and other relatives were also recorded. We mobilize this additional information to simultaneously test the effect of family disruption and financial constraints hypothesis.

III.3 Estimation strategy

The objective of this study is to examine the impact of migration on the education of children of the left behind households. Migration can be considered as a "treatment" at the household level. But when assessing the impact of this "treatment" on the outcome variable (here the children education), one faces the problem that households with migrants may not be randomly selected. So it is important to account for this selection bias in estimating the impact of migration on children's education. This is done by using methods that attempt to restore, as far as possible, the conditions

of a random experiment. In this study, we use the propensity score matching (PSM) methods to compute a weight and then use this weight in a regression framework.

The PSM builds a comparison group based on a statistical model of the probability to participate in the treatment, using the observed characteristics. Participants are then matched to non-participants on the basis of this probability, or propensity score. The PSM estimator is simply the average of the differences of values of the outcome variable on the common support, appropriately weighted by the distribution of propensity scores of participants (Caliendo and Kopeinig , 2008). The validity of the estimates from the PSM method depends on two conditions: (i) conditional independence assumption (i.e. conditioned on the propensity score, there are no unobserved factors which still affects participation) and (ii) the existence of a common support for the sub-sets of participants and non- participants.

The conditional independence assumption states that given a list of covariates X that are not influenced by the treatment; the potential impact on Y is independent to the assignment to treatment T. If Y_i^T is the value of the dependant variable in the treatment group and Y_i^C, the value of the dependant variable in the control group, the conditional independence hypothesis can be formalized as follows:

$$(Y_i^T, Y_i^C) \perp T_i \mid X_i$$

This also means that once controlled by X, the treatment T can be considered as randomly assigned to individuals. This hypothesis cannot be formally tested but we hope that by including in the some main drivers of migration(cf. below), we succeed making comparable the two groups.

The second hypothesis is related to the existence of a common support: $0 < P(T_i = 1 \mid X_i) < 1$ This hypothesis assumes that using the propensity score , a household in the treatment group will have a counterpart almost identical or similar in the control group (Heckman, Lalonde, and Smith 1999). The effectiveness of PSM depends on the existence of a consistent sample of households in the treatment and control groups to ensure the existence of a common support. If both conditions are met, the estimate of the PSM method of treatment effect on the treated can be specified as the average of the differences in values of the dependent variable Y through the common support (P (X)), weighted by the distribution of propensity scores of treatment sub-set. This cross-sectional estimator is specified as follows:

$$TOT_{PSM} = E_{P(X)|T=1}\{E[Y^T|T=1, P(X)] - E[Y^C|T=0, P(X)]\}$$

Empirically, with cross-sectional data and subject to the existence of common support, the average treatment effect can be computed as:

$$TOT_{PSM} = \frac{1}{N_T}\left[\sum_{i \in T} Y_i^T - \sum_{i \in C} \omega(i,j) Y_j^C\right]$$

(see Heckman, Ichimura and Todd 1997, Smith and Todd 2005)

Where N_T is the number of participants and ω (i, j) is the weight used to aggregate values of the dependent variable for non-participating.

There are numerous matching algorithms which differ not only in how they define "neighboor" of treated but also in the way they address the problem of common support and the weights assigned to the neighboring unit. Asymptotically, any matching algorithm gives convergent results. However, in the case of small sample size, the choice of a specific algorithm becomes important. The decision to choose the adequate matching algorithm involves a tradeoff between bias and variance (Caliendo and Kopeinig, 2005). The final specification is determined by the algorithm that produces the best balance between the variables of interest to make conditional independence assumption more defendable. Smith and Todd (2005) note that the matching method called "kernel" can offer an advantage in terms of variance reduction due to information used to construct the counterfactual. It is this method which used in this study.

While estimating the propensity score of participation in the treatment, very little guidance are in general available on the functional form to be used to predict the score. Caliendo and Kopeinig (2005) argue that in the case of binary treatment, where we estimate the probability of participation versus non- participation, logit and probit models give similar results. On the other hand, the choice of covariates that should be included in the propensity score model should be based on economic theory and previous empirical results. Thus, only the variables that simultaneously influence the participation decision and the outcome variable should be included, when they are fixed over time or measured before participation to ensure they are not affected by participation or the anticipation of participation. In this study, the variables used to build the propensity score are those invariant over time, or if they vary, their value before migration. Once the propensity score computed, it is used as weight in the regressions with school attendance as dependant variables, and migration characteristics as independent variables. This strategy leads to unbiased results when the selection equation is correctly specified (cf. Freedman and Berk, 2008).

IV. Results.

In this section we start by presenting the determinants of the propensity score matching and provide evidence for the existence of the common support region. In a second part we then turn to the analysis of the impact of migration on the educational outcomes.

IV.1 the determinants of the propensity score

As mentioned above, the validity of the matching estimators relies upon the quality of the variables used to build the propensity score, here the probability of a household to have a member abroad. To yield consistent results, all variables used to estimate this probability should be "pre-treatment" variable, whose values are fixed prior to the migration of the household member. Given that this survey was specifically designed for the use of PSM, a certain number of household characteristics distribution were both collected at the time of the survey and five years ago. From these characteristics, we were able to compute the following households' indicators five year before the survey:

- The household size

- The percentages of dependants and of active members in the household

- The proportion

- The proportion of students in the households

- The sex and demographic household structure

- The household living conditions (commodities and housing materials).

In addition to theses households' characteristics, we also included in the regression two geographical variables, namely the household region and type of place of residence (urban/rural).

Table 1 shows that except for the proportion of student, the household sex composition and the dependency ratio, all the included variables are important determinants of the probability of a household to have a migrant. Even if our objective in this study is not to analyze the determinants of migration per see, it's useful to make some few comments on the probit regression estimations.

The geographical variables have the expected effects: living in rural area reduces the probability of having an international migrant. Among regions, "Far North" is the place where probability of having an international migrant is the least. This region is also the poorest, according to the last household living conditions survey (INS, 2008). So the lack of means can justify the low propensity of individuals of this region, together with those of rural area, to migrate abroad since international migration can be very expensive. This assertion is confirmed by the fact households' characteristics which capture, somehow, the economic wellbeing (living conditions, proportion of wage workers) are positively correlated with the household propensity to have an international migrant. As demographics characteristics are concerned, the household size affects positively the likelihood of having a migrant. Living in an overcrowded household seems to be a push factor. It's important to recall that all the variables values used in the model where fixed before eventually a household member's migration.

Table 1. Determinants of the probability of children to live in a household with an international migrant (independent variables are measured prior to migration)

VARIABLES	Coef
Region of residence (ref=Adamaoua)	
Centre	0.0218
	(0.202)
East	-0.128
	(0.195)
Far North	-0.702***
	(0.170)
Littoral	0.432**
	(0.200)
North	0.181
	(0.175)
Northwest	0.550***
	(0.192)
West	0.171

	(0.169)
South	0.824***
	(0.278)
Southwest	0.676***
	(0.170)
Yaounde	0.230
	(0.155)
Place of residence (ref=urban)	
Rural	-0.297**
	(0.126)
Male head of household	-0.286***
	(0.0961)
Household size	0.198***
	(0.0181)
Proportion of dependants	-0.107
	(0.150)
Household Wealth index	0.121***
	(0.0405)
Proportion of students	0.0747
	(0.217)
Proportion of members with a salary	0.972***
	(0.254)
Proportion of males	0.485**
	(0.205)
Constant	-2.487***
	(0.277)
Observations	1,183

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

IV.2 The distribution of the common support between control and treatment groups

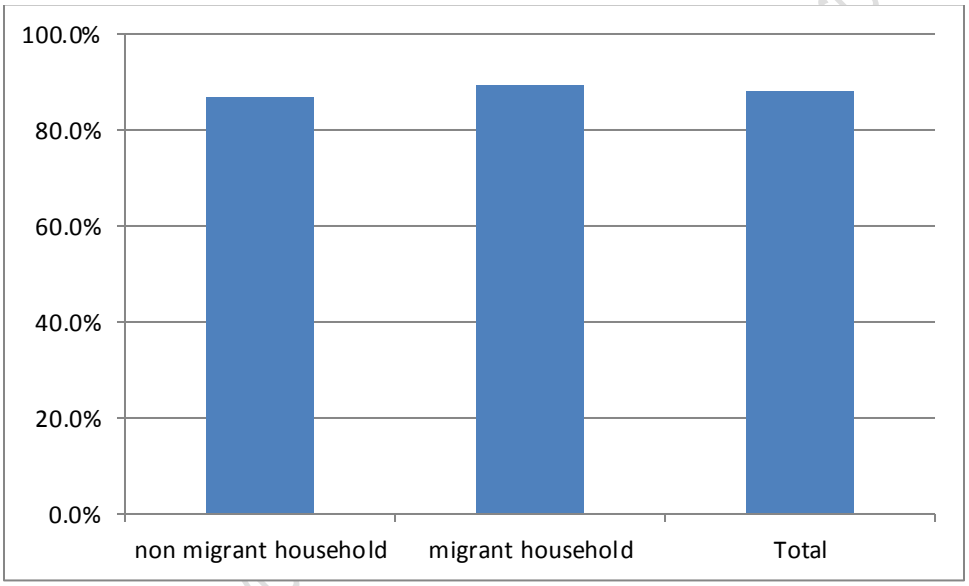
Even if the estimation of the propensity score yield robust and convincing results, it is important to make sure that along the propensity score distribution, for any given treated unit, we can always find a control one with equal similar propensity score. Table 2 shows that this is actually the case since for any sub-interval of the propensity score distribution, we have enough control units to match with treated ones.

Table 2. Common support: distribution of the pscore for migrants and non migrants households

Probability of migrating	non migrants households	Migrants households	Total
From 0^{+} to $.2^{-}$	291	47	338
From $.2^{+}$ to $.4^{-}$	310	117	427
From $.4^{+}$ to $.6^{-}$	110	122	232
From $.6^{+}$ to $.8^{-}$	31	72	103
From $.8^{+}$ to 1^{-}	8	26	34
Total	750	384	1134

Once the conditions of adequately applying the matching methods to our data fulfilled, let now turn to the analysis of the impact of international migration on children education outcomes.

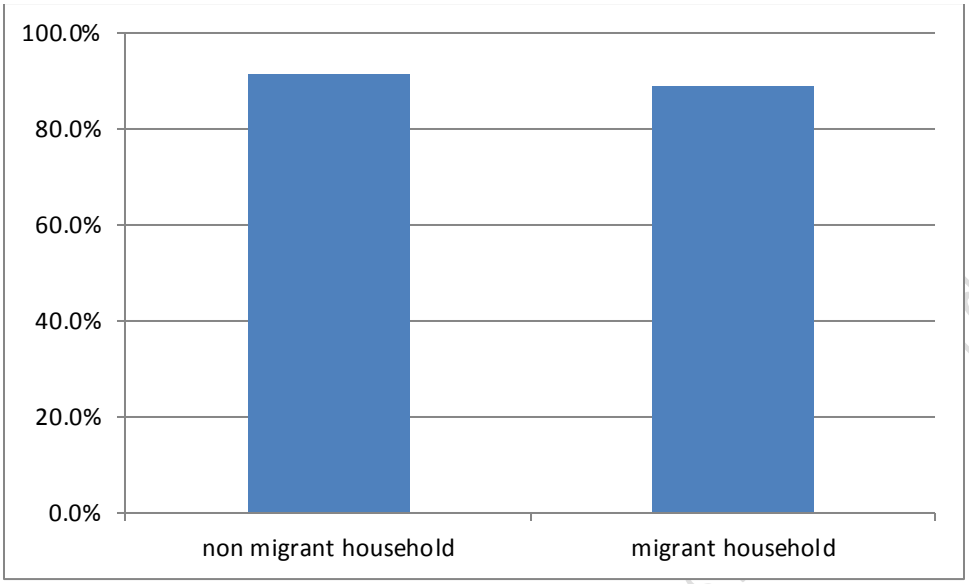
IV.3 Impact of migration on current school attendance



Graph 1. School attendance rate of young people age 6-17 by household migration status, before matching

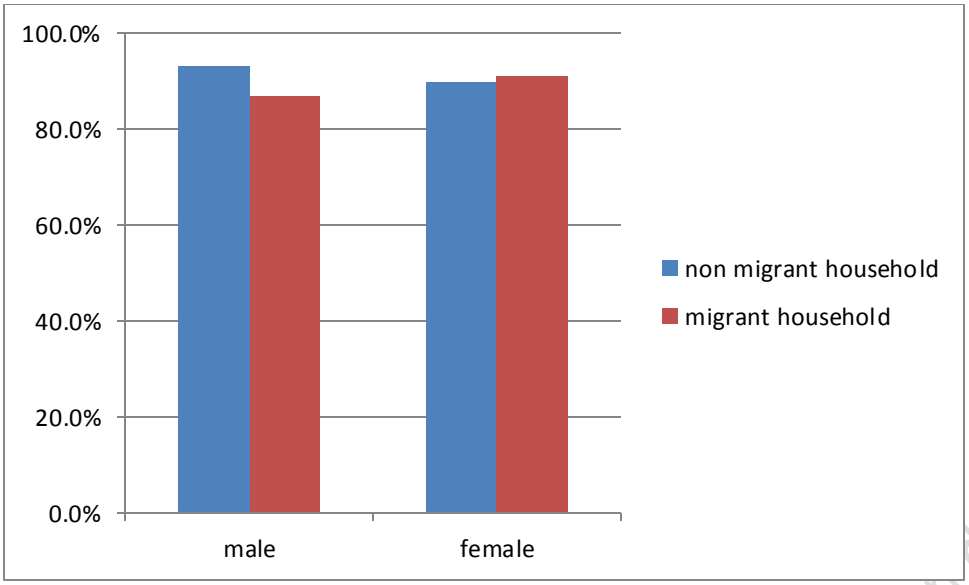
Descriptive statistics (graph 1) show that school attendance rate (SAR) among young of 6-17 years old is 88%. This percentage is almost the same for children from non migrant households (87%) and for those from migrant household (about 89%). This difference is too small to be statistically significant. So at descriptive level, there is no observable impact of international migration on school attendance.

This result persists once households are matched. Indeed, even though there seems to be a slightly negative impact of migration on school attendance (SAR=89% in treated households against 92% in the control group), the difference is not statistically significant, both for kernel matching and for the stratified matching). The fact that international impact does not lead to any impact on children schooling of left behind households is not a result specific to Cameroon but has also been observed in Senegal (Kusumawardhani, 2012).



Graph 2. School attendance rate of young people age 6-17 by household migration status, after matching

The previous assessment of the impact of international migration on all the children of left behind households implicitly posit that the household demand of education is homogeneous across children. But even though the overall impact of migration on children school attendance is none significant, migration could still affect a particular gender. In the specific case of Cameroon, gender schooling inequality is very low (SAR=89% for males, against 87% for female in our sample). So in Cameroon, and contrary to other African countries, there is a convergence of females' and males' SAR. Propensity score matching shows that migration affects differently male and female. As females are concerned, living in a migrant household does not significantly influence the school attendance rate. But when we examine the effect of migration on males' education, results clearly indicate migration negatively influences boys' chances to attend school: boys living in migrant households have a probability of 87% of attending school against 93% for those living in non migrant household, and this result is statistically significant.



Graph 3. School attendance rate of young people age 6-17 by household migration status and gender, after matching

Finally, our analyses bring to light mixed evidence of the migration effect on left behind household education demand: while there is no overall effect of migration on children education rate, disentangling this effect by gender provides evidence of a specific influence of migration on boys' education. Namely, living in a migrant household reduces boys' school attendance from 93% to 87%, and this difference is statistically significant. This depressive effect of migrationon education has been founded in some previous studies (Antman 2011;McKenzie & Rapoport 2011; De Brauw and Giles 2006). The two first studies (Antman 2011 and McKenzie & Rapoport 2011) distangle their models by gender, so their results can be more precisely compared to ours. This comparison show that while McKenzie & Rapoport found negative effect both for boys and girls, Antman highlighted the depressive effect only for boys. Hence her results are very similar to ours. She explains boys underperformance in migrants' households, by the fact that boys are obliged to find jobs outside the household to compensate the loss of income due parent's migration. But this explanation is valid if migrants' households are facing are more constrained in their budget due to migration. But it's may also due to the family disruption and the lack of boys' supervision. Our Data enable us to simultaneously test the family disruption and the budget constraint mechanisms.

IV.4 the influence of the migrants' characteristics and remittances.

In the previous analysis, we considered that households with international migrants were homogenous, and through matching methods, we compared their children's school attendance rate with that of those living in similar households, but without migrants. As we earlier underlined in the literature review, the migration effect can depend upon the characteristics of migrants and the importance of remittances flows. So households with migrants can be considered as heterogeneous in two directions: according to the migrants' characteristics and according to migrants' remittances behavior. Our objective in this section is to formally assess the influence of these characteristics. To do so, and in line with the strategy developed in the methodological section, we run the weighted

regressions, where the weights are the propensity scores[4]. In these regressions the following main explanatory variables are included:

- the migration status of the household (with or without migrant);

- the fact that the migrant had a parental role in the household before migration. We consider that a migrant played a parental role if he was: the household head or his spouse, his father, spouse father, sibling or grand-father. The rationale behind this selection is that the person could supervise the children. So their migration may influence children mentoring. In our data about 30% of children living in a migrant household are concerned.

- the remittance status of household with a migrant (household has received remittance from his international migrant during the year before the survey). A little bit more than half (54%) of children live in a migrant's household which receives remittances.

- the log of remittance transferred by the migrant to the household during the year

Estimations (table 3) highlight some interesting findings: the first and the most striking is that when the migrants were able to play a parental role in the left behind households, their departure leads to a decrease in the children's school attendance. This result is in line with our previous finding showing using matching methods. For the overall sample, the marginal school attendance rate is reduced by 7%. This effect seems more pronounced and more statistically significant for boys (-8%) than for girls (-6%). Also in line with previous results, we also notice that the overall effect of migration (living in a migrant household) is negative for boys (about -5%), at least when remittance is taken into account, but not for girls. Table 3 also shows that both the dummy and the amount of remittances do influence school attendance of boys and girls of primary and lower secondary school age. Numerous studies, in other contexts cf. Cox an Ureta, 2003; Hansan and woodruff, 2007; Borraz, 2005 Calero & al, 2006, etc.) have founded a positive impact of remittances on different educational outcomes. But some few have also come out with negative impact (Kusumawardhani, 2012, Grigorian and Melkonyan 2008, XX).

If we construe the lake of remittances effect in the light of our theoretical framework, it means that remittances don't succeed in alleviate the budget constraint. The reason can be that for primary and lower secondary levels, education costs are not the decisive parameters, at least when compared to disruptive effect of migration.

Table 3 **School Influence of migration, remittance and migrant's status in the household before migration on the attendance rate of young people age 6-17 (marginal probability from a probit model weighted with the propensity score matching)**

VARIABLES	Over all		Boys		Girls	
	Excluding remittance	Including remittance	Excluding remittance	Including remittance	Excluding remittance	Including remittance
Migrant household	0.006	-0.001	-0.022	-0.050*	0.026	0.040

[4] We also produce, as robustness check, unweighted regressions (cf. Table A1 in appendix)

(dummy)						
	(0.019)	(0.022)	(0.023)	(0.027)	(0.029)	(0.035)
Migrant remits (dummy)		0.018		0.168		-0.101
		(0.135)		(0.184)		(0.201)
Log of remittance amount in 1000CFA		-0.000		-0.009		0.006
		(0.010)		(0.014)		(0.015)
Migrant played a parental role(dummy)	-0.067***	-0.068***	-0.075**	-0.075**	-0.061*	-0.060*
	(0.024)	(0.025)	(0.035)	(0.037)	(0.034)	(0.034)
Female(dummy)	-0.014	-0.013				
	(0.015)	(0.015)				
Observations	1,237	1,237	576	576	630	630

Standard errors in parentheses

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

NB the following variables are included as controls: head of household education level, gender and age; the child age the dummy of living in rural area, the 9 dummies of regions

V. Conclusion and discussion.

The objective of this study was to analyze the impact of international migration on educational outcomes of left behind households' children in Cameroon. Even though Cameroon doesn't belong to African countries with massive international emigration, the phenomenon is going increasingly. In addition, if not massive, some studies have shown that, because of the high skill of it Diaspora, Cameroon is part of countries suffering from the brain drain. So it's really important to see if in return this Diaspora contributes to the development of the home country, by levering the level of human capital of children of left behind households. To this end, we use survey called " the impact of South-South migration on Development in Cameroon (IMDC2012) " conducted by the Institute for Demographic Training and Research (IFORD) in 2012. The survey was purposely designed to capture the impact of international migration on socioeconomic outcomes. A quick literature review has shown that migration can impact children's education through two main channels: the "budget constraint relaxing channel" and the "family disruption channel". From these elements, we have derived a theoretical framework, which, even though not structurally tested, help us understanding the scope of our results. Using propensity matching and regression methods, estimations show that the impact of migration on educational outcomes is negative: Having an international migrant, instead of helping left behind households increasing their enrollment rate, leads on contrary to a reduction of school attendance, especially among boys. Taking into account the migrants' characteristics enable us to understand this depressive effect: it is the departure of migrants who could play a parental role in the household which generate the negative impact. This result is in line with the "family disruption" channel. Remittance, through "budget constraint relaxing" channel doesn't succeed in counterbalancing the "family disruption" one. So migrating and remitting to the left behind household doesn't seem to be an effective strategy in improving education in Cameroon,

at least as children of primary and lower secondary education age are concerned. In the literature review on the macro-consequences of migration, there are controversial conclusions about the net gain of the migration for the home countries (especially the poor countries). On one hand some studies support the "brain gain" view according to which migration generate positive effect on the development and on the other hand there are those supporting the "brain drain" view, that is migration deprives developing countries from the most able part of their population and is negative for development. Our study brings new arguments for the latter.

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Appendix

Table 1A **Influence of migration, remittance and migrant's status in the household before migration on the attendance rate of young people age 6-17 (marginal probability from a probit model without weighting with propensity scores)**

VARIABLES	Over all		Boys		Girls	
	Excluding remittance	Including remittance	Excluding remittance	Including remittance	Excluding remittance	Including remittance
Migrant household (dummy)	-0.00417	-0.0123	-0.0400	-0.0670*	0.0249	0.0389
	(0.0221)	(0.0274)	(0.0310)	(0.0376)	(0.0336)	(0.0428)
Migrant remits (dummy)		0.0511		0.225		-0.0962
		(0.199)		(0.281)		(0.296)
Log of remittance amount in 1000CFA		-0.00276		-0.0134		0.00545
		(0.0150)		(0.0210)		(0.0225)
Migrant played a parental role(dummy)	-0.0786**	-0.0780**	-0.0833*	-0.0790*	-0.0737	-0.0744
	(0.0315)	(0.0318)	(0.0446)	(0.0455)	(0.0476)	(0.0479)
Female(dummy)	-0.0186	-0.0184				
	(0.0168)	(0.0168)				
Observations	1,237	1,237	576	576	630	630

Standard errors in parentheses

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

NB the following variables are included as controls: head of household education level, gender and age; the child age the dummy of living in rural area, the 9 dummies of regions