

## Does Remittance Earning Pave the Way to Investment in Education?

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**Abstract:** Remittances play a significant role in overall development of our country. Our main objective is to know whether decision of households with migrants regarding their educational expenditure depends on their remittance earning or not. More specifically, do educational expenditures of migrant households increase or decrease with remittances? If they do, then, are remittances received from inside the country and outside the country influence educational expenditures of those households in the same way? We are also interested to know if there are any regional differences in the estimated outcome. We tried to find out the answers to all these questions throughout the whole paper. As a source of data we used the Household Income & Expenditure Survey performed in Bangladesh in 2010. 1,773 households (who had both non-zero remittance earnings and non-zero educational expenditures) among all the 12,240 households are used to regress educational expenditures on remittances using Ordinary Least Squares (OLS). Both educational expenditures and remittances are used in terms of per capita. The result reveal that with the increase in remittance earning in households, their educational expenditures tend to decrease though with a very small amount. Moreover, it is found that remittances received from inside the country tend to increase educational expenditures of respective household while remittances received from outside the country tend to decrease them. Finally, the regional differences in the relationship of remittances and educational expenditures seem inconclusive.

**Key Words:** Remittances, Educational expenditures

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### I. Introduction

The second largest sector of foreign exchange earnings after the Garment industry in Bangladesh is the Remittance earnings. In fact, if the cost of raw materials is deducted from the received foreign exchange, remittance earnings would be the single largest sector. Remittance is transfer of money from a worker to its family both working abroad or working within county but in different region or province from where his/her family lives in.

It is not unknown to us that remittances play a significant role in overall development of our country. But do the consequences of remittances go well beyond the “confines of simply development”? If the utilization of remittance is categorized as productive and non-productive purposes, then it will be found that most of the remittance goes to non-productive purposes and a very insignificant portion is utilized for productive purposes (TomDe Bruyn, 2005). According to Bruyn, from the point of view of utilization, four different types of transfers can be discerned. Firstly and most importantly, individual transfers to families or friends. The bulk of remittances are used for consumption purposes. Investment in business or traditional productive uses and in savings is limited though; remittances are also seen as important financial means to investment in human capital (i.e. education), housing and land purchase. Again, the importance of the repayment of the cost of migration is notable too. Secondly, individual transfers are sent to save or invest in the home country, and thirdly to sponsor charity or community development initiatives. Lastly, collective transfers are identified to fund charity or community development initiatives. Bruyn found that incomes of remittance earning household increased up to 119% whereas remittances constituted of nearly 51.12% of the total household income many households investment. Some studies again have suggested that remittances primarily raise consumption levels and do not necessarily promote investments in either physical or human capital (Durand and Massey, 1992). There is empirical evidence showing that remittances are spent mostly on basic subsistence needs and after those are fulfilled, on housing improvement and eventually land purchase (Appleyard 1989; Guarnizo 1992; Stahl & Arnold 1986). Carletto et al (2004) finds that only small per cent of households receiving remittances reported using these funds for investment or purchase of durable goods. On the other hand, other empirical studies have found evidence that migration does indeed foster household investments in the countries of origin (Lucas, 1987; Dustmann and Kirchkamp, 2001; Woodruff and Zenteno, 2001). Lucas (2005), however, provides an extensive review of the socio-economic effects of

remittances in the developing countries. The short-term effect is usually related to increases in consumption, poverty alleviation and income inequality while long-term effect is more pertinent to socioeconomic development and specifically on education performance and health status improvement. There are aspects of remittances what **Levitt (1998)** defines as “**social remittances**”, which may include issues such as ideas, behaviors, identities and social capital that flows from receiving to sending country communities. The role of these resources is to promote immigrant entrepreneurship, community and family formation and political integration. So social remittances play an indirect role in influencing the incentive to receive education in the remittance receiving country.

The most comprehensive review of the literature on remittances in Bangladesh (**Bruyn 2005**) discloses a number of socio-economic benefits of Remittance at Community & Household Levels in Bangladesh which are:

- Allow families of migrants to meet basic nutritional needs
- Living condition and Housing improved
- Invest for education of children
- Increased investment for healthcare
- Social security for elderly people increased
- Increased investment in business or income generating activities

**Source: Modified from Tom De Bruyn (2005)**

Education develops human skills and makes people enable to do professional jobs. That’s why it is also known as human capital. For a developing country like ours, where people struggle to meet their most basic needs of food, clothing and housing, education seems luxury to many though it is also enlisted as one of the human basic needs. In 2010, the literacy rate was estimated at 57.91% at national level which is 61.12 percent for the male and 54.80% for the female population. In rural area, literacy rates of total, male and female population were 53.37%, 56.67% and 50.21% respectively. In urban area, the literacy rates of total, male and female population are 70.38%, 73.10% and 67.67% respectively (**Bangladesh 2010 HIES Report**). We want to investigate, in the light of Household level data 2010, to what extent remittance earnings influence the decision of increasing or decreasing household educational expenditures or do they influence educational expenditures at all. Moreover, we also want to know whether the relationship vary from division to division, provided that it exists.

The questions stated below reflect the issues that we want to investigate within our span of household level data:

1. Is there any significant relationship between remittances and educational expenditure of remittance earning households? If there is, then do remittances increase educational expenditure or decrease it?
2. Are remittances received from within country and outside country similar in nature in terms of their relationship with educational expenditure of household level?

Is the relationship more or less the same irrespective of different divisions of our country? More specifically, is there any significant regional difference in the relationship of remittance earning and its influence on educational expenditure?

## **II. Literature Review**

We have tried to carry out our work in the light of existing literatures in this field. There have been a number of significant works in this regard, though not directly focusing on household educational expenditures always. Some literatures focused on child schooling or school attainment in remittance earning households while some were related to investment in human capital. There are literatures in favor of both positive and negative relation between remittance earnings and educational expenditure. One stream of literature has showed that remittances cause investment in education by lifting up the liquidity constraints of households. An opposite stream argues that migration of a family member which in turn creates absence of the parent has negative impact on child schooling.

Among the literatures supporting positive significant relationship between remittances and educational expenditure, Kifle (2007) estimates the impact of remittances on child education in Eritrea using sample data from remittance-receiving households that have school-age children. Eritrea’s small economy depends on remittances from Eritreans overseas. It is known that remittances from abroad are equivalent to 40-50% of their GDP. Key findings from the regression analysis show that households’ education ratio (the ratio of remittances spent on child education to the total amount of remittances received by households) decreases with the increase in remittances received; however, there is still a positive relationship between remittances and expenditure on child education out of remittances received. The remittance elasticity for investment in child education and the marginal remittances share to child education confirm that remittance-receiving households spend a higher proportion of remittances on child education. Unlike the conventional view that household income from remittances is used exclusively for consumption purposes and other unproductive items, the paper argues that, in

Eritrea, remittance-receiving households with school-age children spend a significant portion of the remittances on child education. Borraz(2005) finds in his study that children in remittance earning households, on average, complete more years than other children and the effect is statistically significant for more than one year. Lopez-Cordova (2006) estimates the impact of increasing fraction of remittance-recipient households in Mexican municipalities to schooling and health status by performing a 2SLS estimation using municipal rainfall patterns as instrumental variable. Schooling and health status are regressed on a dummy for remittance-recipient and a set of covariates including migration cost to separate the impact of migration to that of remittance. The study finds that an increase in the fraction of households receiving remittances reduces infant mortality and illiteracy among children aged 6-14 years old, while at the same time alleviating poverty and improving living conditions. Dustmann and Speciale (2006) reasoned that remittances may allow households to send children to school rather than to the labor market. This implies an increase in the demand for educational services which in turn indicates a positive relation between remittance earning and educational expenditure. Kabki (2003) argues that remittances transferred by most of the Netherlands-based migrants from Ghana's rural Ashanti community are used to pay for the school fees of children in the (extended) family. Some of the families interviewed indicated that if it were not for the remittances, they could not send their children to school. Vidal(1998) found that if households are inclined to further migration, they channel the remittances towards education and human capital formation. Yang(2005) shows that appreciation in migrants' currency (Phillipine Peso) increased the value of remittances received and thereby increased educational expenditure in original households.

Now we turn to the literatures arguing in support of negative relationship between educational expenditure and remittance earnings. McKenzie & Rapoport (2006, 2009) identify the overall impact of migration on educational attainment in Mexico by using historical migration networks in the year of 1920 as an instrument for migration seven decades later in order to account for potential endogeneity of households' migration decision. Their finding is that children in migrant households are less likely to be attending school and complete less total years of schooling than children in non-migrant households. It is possible that the absence of a migrant parent may require the child to undertake tasks normally carried out by that migrant, such as working in a family business or doing housework. Since it can take a while for migrants to start earning money and remitting, children may also need to work to cover short-term household liquidity constraints. Hanson and Woodruff (2003) note that migration may disrupt household structure, removing children from the presence of guardians and role models, and require older children to take on additional household responsibilities. They also note that negative labor market shocks experienced by parents may both induce migration and require children to work instead of spending time in school, leading to a spurious negative relationship between migration and years of schooling. The migration of the household head can disrupt the family life and have a negative impact on children school performance. Antman(2005) looks at the impact of migration on school enrollment and hours of schooling which points to negative impact of migration on child schooling. Acosta, Fajnzylber and Lopez (2007) explored the impact of remittances on poverty, education, and health in eleven Latin American countries using nationally representative household surveys and making an explicit attempt to account for one of the inherent costs associated with migration: the potential income that the migrant may have made at home. One of the findings was, there was evidence that for some specific groups – defined by country, gender, and urban status –remittances increased children's educational attainment though, the impact was often restricted to children with low levels of parental schooling. According to them, the net impact of remittances on human capital accumulation is ambiguous. On one hand, migrant remittances can help overcome borrowing constraints that limit physical and human capital investments of poor households. On the other hand, migration of household members that precedes the receipt of remittances can have disruptive effects on family life, with potentially negative consequences on the educational attainment of children. Moreover, to the extent that in destination countries most migrants tend to work in occupations requiring limited schooling, the returns from investments in education may be lower for those who are foreseeing international migration, which also could tend to reduce the schooling of children in migrants' households. Similarly, migration can put pressure on wages at the home country, raising the opportunity cost of not working for older children. In any case, the direction of the relationship between remittances and child education would depend on idiosyncratic characteristics of each country.

Net effect of remittance earning on education expenditure is actually ambiguous. It may vary from country to country depending on various attributes, specially on their political and socio-economic conditions. According to (McKenzie & Rapoport ; 2006, 2009) it can be expressed as the sum of three main effects. First, the effect of remittances on the feasible amount of education investment which is likely to be positive where liquidity constraints are binding. Second, the effect of having parents absent from the household as a result of migration, which may translate into less parental inputs into education acquisition and maybe into more house and farm work by remaining household members, including children. And finally, the effect of migration prospects on the desired amount of education, which is likely to be negative. Quite similar to these findings, Booth & Tamura (2009) point out that there are generally assumed to be two opposite effects of remittances on

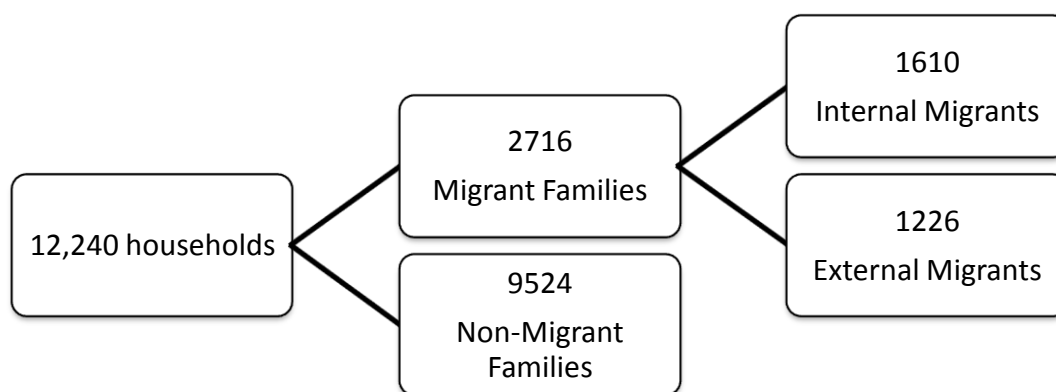
education. According to them, the positive effect results from the increased household income that enables a household to increase its educational expenditure that it might not afford previously. The negative effect on education, however, can result from in two possible ways: the negative social consequences of having an absent parent, and the increased demand for household labor resulting from losing a working-age adult from the household. A recent study by Bansak and Chezum (2009) concerning the educational attainment of Nepalese children, acknowledges the two competing impacts of remittances and family emigration, which they describe as net remittance and absenteeism effects. An interesting finding of Dustmann and Speciale (2006) is that there is an inverted-U relationship between per capita remittances and educational spending. That means, education expenditure increases with increase in per capita remittance earning at primary stages and after a certain time when educational expenditure reaches the saturation point, it decreases with the increase in remittance earning.

Our work stands in support of the second stream that says remittances affect child schooling negatively and thereby reduces educational expenditures of migrant households. Most important determinant of education is whether household can afford to send their children to school or not. So if credit constraint is binding, remittances are expected to have significant effect on education. As most of the families in our country face binding credit constraint and most of the migrant families belong to this group, remittances are expected to have a significant relationship with household educational expenditures. But as we have thought the relation to be positive, it is actually not so. We have checked the validity of sign for both remittances received from inside the country and outside the country which adds a new dimension to our work. In fact the signs appear to be different for the two variables. To look for regional variation in the relationship is another diversification of the work though it could not give any satisfactory results.

Our aim of the paper seems quite clear by now. In next few sections, we will discuss about the methods we used to collect data, variables to be chosen for the model, statistical techniques to run the model of interest, results and their brief analysis, their relevance to the existing literature, and last not the least, the limitations of the work and constraints that we faced during the work.

### **III. Methodology, Major Hypothesis, and Model Specification**

We have used cross-sectional data of year 2010 in Bangladesh. Information regarding migration of any member of the households and their educational expenditure is collected through Household Income & Expenditure Survey conducted in 2010. It related to any member who migrated within the country or abroad during the last five years from 2010. 12,240 households participated in the survey. Among them number of families with migrants (the family had at least one migrant member either inside the country or outside the country) was 2716 of which 1610 households had internal migrants, 1226 households had external migrants, and only 120 households had both internal & external migrants.



There were 4342 families who had zero educational expenditure among 12,240 families. That means, 7898 households had positive educational expenditure. Among them, 1773 households were remittance earning households i.e. migrant households. 984 families with internal migrants had non-zero educational expenditure while 871 families with external migrants had non-zero educational expenditure. We have taken the 1773 households that had both non-zero amounts of total remittances (adding the remittances received from inside the country and from outside the country) and educational expenditures.

Simple OLS technique is used to estimate the coefficients. Our outcome of interest is per capita education expenditure which is obtained from dividing total yearly education expenditures of households by household size. In assessing the role of remittances in altering investment in human capital, we think that per capita educational expenditure is more appropriate than school attainment since it can express education expenditure of a household as a share of remittance earning. It reflects not only the relationship between educational expenditure and remittance earning but also households' incentive to invest in education (i.e., human capital). Our main objective is to find out the relationship between household educational expenditure and remittance earning. Standard economic theory suggests that, as an additional source of income for the households, remittance is expected to lift households' liquidity constraints and thereby facilitating investment in education, particularly in developing and poor countries. Remittances could also alter the cost-benefit analysis performed by parents upon deciding to invest in children's education through lowering the non-financial cost associated with children's education such as foregone income. Becker's(1974) "investment in education model" states that families take into consideration their education rate of return and its cost, in order to choose the optimal education level for their children. Viewed as an investment decision, an individual will continue her education up to the point where the returns to extra schooling (higher lifetime income) just equal the costs of extra schooling (foregone earnings plus tuition) (Hanson and Woodruff ,2003). To apply this logic to the case of investment of remittances into education we can say that remittance earning families spend their remittance earnings on education (i.e. invest in human capital) up to that point where marginal returns to investment of remittances in education is equal to their marginal costs.

Previous literature on educational attainment identifies family structure, family income, and parental education as key determinants of schooling outcomes for children. We apply these insights in our case and derive an empirical model in which educational expenditures of household depend on income per capita, assets and lands (measured in decimals) owned by the households. We used all these variables in terms of per capita to control for household size. In our data, the variation in educational outcomes is cross-sectional. According to Hanson and Woodruff (2003), the returns to education will vary across children due in part to individual heterogeneity. Children who are perceived as more able will have higher expected returns to education. While we do not observe a child's ability, we do observe a correlate of ability, parental education. Parents who obtained high levels of schooling may be more likely to have children for whom it is also optimal to obtain high levels of schooling. But we could not separate data for parental education therefore we use the highest class passed by the household head of each family as a proxy for a child's ability. Our intuition is, as in case of parents, a household with a relatively higher educated household head, will tend to send their children more than households with less educated household heads. Finally, we included a dummy for rural-urban areas to see the differences between educational expenditure in rural and urban areas.

Our main hypotheses are:

**H<sub>0</sub>: There's no significant relationship between remittances and educational expenditure of households**

**H<sub>0</sub>: Remittances received from within country & from outside country do not vary in relation with educational expenditure of households**

**H<sub>0</sub>: There is no regional differences regarding the relationship between remittances and educational expenditure of households**

Our main model of interest is:

$$pcexpedu_i = \beta_1 + \beta_2 incpc_i + \beta_3 pcexpfd_i + \beta_4 pcrem_i + \beta_5 pclands_i + \beta_6 pcassets_i + \beta_7 urbrural_i + \beta_8 hholdedu_i + \epsilon_i$$

where,

**incpc**=per capita income of household members

**pcexpedu**=per capita educational expenditure

**pcrem**= per capita remittances received by households from inside and outside the country together

**pcassets**= value of per capita assets of household members

**pclands**= per capita lands (in decimals) of household members

**urbrural**=1 if area is urban

0 if area is rural

**hholdedu**=highest class passed by household head

$\epsilon_i$ = error term

The principal objective is to estimate  $\beta_4$  which is the coefficient of per capita remittances

IV. Result

As we have run the above model, the results obtained are shown below:

**Table-1:** Results of simple OLS (Dependent Variable: Education Expenditure per Capita)

Explanatory Variables	Coefficients	t-statistic	p-value
Inpc	0.0109816	5.86 (.0018734)	0.000*
Pcassets	0.0368649	8.92 (.0043244)	0.0000**
Pclands	-0.330984	-0.10 (3.298017)	0.920
Pcrem	-0.0079696	-3.14 (.0025353)	0.002
pcexpdf	0.0629869	6.21 (.010139)	0.000
hholdedu	173.723	8.34 (20.83771)	0.000
urbrural	882.4537	4.52 (195.4126)	0.000
constant	-92.431	-0.48 (193.3384)	0.633

\*1 error in 1000 ; \*\* 1 error in 10,000. Total number of observations is 1773. R-square is 23.51%. Prob of F > 0.0000.

Standard errors are in parenthesis.

The table also reveals that there's a significant negative relationship between remittances and per capita educational expenditure of households. But the coefficient is quite low. Everything else held constant, if per capita remittance earning increase by Tk. 1, on average, per capita educational expenditure decreases by Tk. 0.007. We can also see from the above table that all the other variables are highly significant below 5% level of significance except per capita lands of households. There's substantial evidence that this variable is not statistically significant. Obviously as **per capita income** of households increase, per capita educational expenditure tends to increase. But the relation between **per capita food expenditure** and per capita educational expenditure is positive according to our results while we know when food expenditure increases, people usually decrease their non-food expenditure. The coefficient of **hholdedu** is very high. If household head passes 1 more class, on average, educational expenditure increases by nearly Tk. 174, holding other things constant. As we have said before, a relatively more educated household head would be more cautious about the schooling of the children of that household. We can also see that there is substantial amount of differences between the education expenditure in **rural and urban areas**. Holding other things constant, on average, per capita educational expenditure in households of urban areas is almost Tk. 882 higher than in households of rural areas. It reflects the fact that people in urban areas are more conscious about receiving education than people in rural areas. The same regression model is run with taking remittances within country and outside country instead of taking the total remittances as a single variable and it reveals that the two different types in fact behave in different ways.

**Table-2:** Results of simple OLS run taking per capita remittances received from home and abroad as separate regressors (Dependent Variable: Education Expenditure per Capita)

Explanatory Variables	Coefficients	t-statistic	p-value
incpc	0.0094762	5.03 (.0018841)	0.000
pcassets	0.0376017	8.75 (.0042971)	0.000
pclands	0.2342884	0.07 (3.277178)	0.943
pcreminside*	<b>0.0392601</b>	<b>5.72</b> <b>(.0096686)</b>	<b>0.000</b>
pcremoutside*	<b>-0.0070689</b>	<b>4.06</b> <b>(.0025241)</b>	<b>0.005</b>
pcexpdf	0.0578872	-2.80 (.0101194)	0.000
hholdedu	167.6258	8.09 (20.72907)	0.000
urbrural	874.8945	4.51 (194.0707)	0.000
constant	-90.06727	-0.47 (192.0056)	0.639

\*pcreminside stands for per capita remittances from inside the country and pcremoutside stands for per capita remittances received from outside the country

The table shows that the coefficients, t-statistic, and p-values are almost same as the results shown in the previous table. Both remittance received from home and abroad are highly significant. While on average, per capita educational expenditure increases with increase in remittances received from within country, it decreases with increase in remittances received from outside country though the coefficient of **pcremoutside** is even lower than the coefficient of **pcreminside**.

We have again run the same regression model for different divisions to find out whether there is any significant regional difference between the pattern of education expenditure of households and per capita remittances received from home and abroad together. It reveals some new interesting dimensions.

**Table-3:** Results of simple OLS for different divisions (Dependent Variable: Education Expenditure per Capita; control variables are the same as before)

		Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet
Per capita remittances received from within country	<b>Coefficient</b>	-.0095944	.0745178	.0266086	-.0097969	.1174381	-.0562155	.0311088
	<b>t-statistic</b>	-0.64 (.015044)	<b>4.72</b> (.0157753)	1.21 (.0220227)	-0.30 (.0325452)	<b>2.89</b> (.0405715)	-0.70 (.0804339)	0.44 (.0708462)
	<b>p-value</b>	0.525	<b>0.000</b>	0.227	0.764	<b>0.005</b>	0.487	0.661
Per capita remittances received from outside country	<b>Coefficient</b>	.0127349	.0009472	-.0082641	-.0252103	.01518	-.0231838	.0088091
	<b>t-statistics</b>	1.21 (.0105397)	0.24 (.0039815)	-1.47 (.0056047)	<b>-2.54</b> (.0099227)	1.16 (.0131119)	-0.64 (.0364018)	0.47 (.0187315)
	<b>p-value</b>	0.229	0.812	0.141	<b>0.012</b>	0.249	0.526	0.639
Number of observations		140	528	576	209	121	86	113
R-square		0.5824	0.2129	0.2393	0.4173	0.2112	0.3559	0.1784

(Standard errors are written in the parenthesis)

When we have run the regression for different divisions, the results show surprisingly that almost in all the divisions there is no significant relationship between per capita educational expenditure of households and remittances received from within country as well as from outside whereas we found both the coefficients to be significant when we ran regression for all the 7 divisions together. Exception is for Chittagong, Rajshahi, and Khulna. In case of Chittagong and Rajshahi, coefficients of per capita remittances received from within country are highly significant while in Khulna coefficient of per capita remittances received from outside country is significant at exactly 1.2% level of significance. Moreover, the coefficients of remittances received from within country for Chittagong and Rajshahi are both positive and the coefficient of remittances received from outside country for Khulna is negative which are consistent with the conclusions that we made from Table 2. We have also run the regression using the 7 divisions as dummies for region and '**remittances\*region**' as the interaction term to find out the regional differences. But the results show that all the region dummies as well as the interaction term are not statistically significant. So it seems the result to be inconclusive. There is not sufficient evidence to conclude that whether there are any regional differences regarding the relationship between education expenditures of household and remittances.

### V. Discussion and Limitations of the Study

While we are concerned with the effect of remittances, one would reason that remittances increase income and so it should lead to increased expenditure. Educational expenditure will also increase as a result. But the conclusion is not very straightforward.

When remittances as a whole are taken, we have a negative and significant relationship between increased remittances and per capita educational expenditures. Again, when we consider them different, as remittances received from within country and abroad, we have positive relation between per capita educational expenditure and remittances received from within country remittances but negative relation for the other. Moreover, both are significant at the 5% level. Now, is it very much realistic? The within country remittance effect can be interpreted using increased income approach. On the other hand, migration of household members that precedes the receipt of remittances can have disruptive effects on family life, with potentially negative consequences on the educational attainment of children and other members. When a person migrates abroad from Bangladesh, he incurs a good amount of cost. This cost might not be really substantial for well-off households but it becomes substantial for low income ones. This cost might be incurred by drawing money from other expenditures, especially educational expenditures, at the time of migration and even after that. So,

educational expenditures decrease in this case. Moreover, to the extent that in destination countries, most migrants tend to work in occupations requiring limited schooling. These families might have less concern about sufficient educational expenditure, which also could tend to reduce the schooling of children in migrant's households. In any case, the direction of the relationship between remittances and education would depend on idiosyncratic characteristics of each household. These types of reasoning for negative relation between remittances and educational expenditures are also supported by **Acosta, Fajnzylber and Lopez (2007)**. So, we are not the first ones to experience this type of result.

Division dummies were also introduced. There are presently seven divisions in the country. Here, we got a bunch of different outcomes both significant and insignificant. But the significant outcomes do resemble the signs of outcomes without division dummies. This kind of result may come as people of different divisions have different mindsets, socio-economic conditions, income levels and so on. Regressions using the 7 divisions as dummies for region and 'remittances\*region' as the interaction term to find out the regional differences were also done. The results were more or less the same. Educational expenditures in all the regressions were taken as per capita.

Like all other research works, this paper also subjects to some constraints. The major two constraints that we faced while working were

- Some variables of interest that the existing literatures and theories suggest to include in the model were not provided by the HIES data whereas some other variables were not available directly in the survey which had to be constructed by means of a number of statistical operations. With our naïve knowledge in this field, we were not able to derive those variables out. As a result, we had to either drop those variables or we had to use proxy variables whose validity are not beyond question.
- As primary data could not have been collected, the regressions had to be adjusted with the data rather than with the theory.

These were the main constraints. There are definitely some drawbacks and limitations of the work done. Some of them are listed below.

- While computing per capita educational expenditure, educational expenditures of a household were divided by total members of that household. But it would have been appropriate if educational expenditures were divided by number of education receiving members. But since this particular information was not directly given in the HIES data, we were not able to derive this information from the information provided by HIES 2010.
- We used per capita family income as one of the control variables but introducing it as an explanatory variable may create simultaneity, as family income may be correlated with unobserved shocks to a child's schooling. (**Hanson and Woodruff, 2003**)
- We have taken the highest class passed by the household head as one of the control variables. But existing literatures refer to the schooling of father or mother as a determinant of education attainment of the children of the family. We could not manage data on father's or mother's education level of school going children from HIES data as it seems very much vague So we had to use the highest class passed by the household head as a determinant of the per capita educational expenditure of the households.
- Highest class passed by household head was also faulty. No class passed was assigned 0. Then it increases by 1 starting from class 1. For SSC/equivalent, the variable takes 10, for HSC/equivalent-11, for graduate/equivalent-12, for post graduate/equivalent-13, medical-14, engineering-15, vocational-16, technical education-17, nursing-18, others-19. Here, the distribution of education status isn't homogenous. So, the constant positive coefficient for passing 1 more class is not very meaningful especially after SSC/equivalent.
- The measure of  $R^2$  is not high, that means, the estimated line does not fit the data very well. One of the variables influencing more educational expenditure is awareness of household members, especially the household head. Only highest class passed by household head can't imply awareness fully. If any variable could be added to the model that accounts for awareness, it might have increased model fit.
- We tried to use a log-log model as well as a log-lin model to minimize the extreme values. But in these cases, all the variables' appeared to be insignificant.
- Ordinary least squares (OLS) is used as estimation technique. But there might be endogeneity problem in the regressors as well as omitted variable bias. So, had we used more appropriate tools, the results would have been replicated reality in a better way.

These are the main limitations of the work. So, there is scope for further research on this issue using different data or solving the limitations or extending and modifying this work. Again, as the world is becoming a global village day by day, people will migrate more as more markets will be created throughout the world. So, the effects of remittances will be more. As a result, further research on these fields would be needed more than before in the future.



## VI. Conclusion

Remittances have grown rapidly in recent years and have proved a stable source of Finance. While remittances can benefit households by lifting liquidity constraints, migration of a family member may have also a deleterious impact on the household's well-being. The paper was initiated to observe the relation between remittances received by the households and their educational expenditures. Results were estimated based on remittances as a whole, as well as remittances from within and outside the country separately, and for different regions of our country. The main findings of the work were that relation between remittances from within country and educational expenditures (per capita) is positive while the relation is negative in case of remittances received from outside the country. Both of them were significant and the coefficient of remittances received from outside the country is very small in magnitude. Coefficient of remittances received from within country is not also that high. The results do not vary significantly when we include region (division) dummies and the interaction terms. The effects are not causal and different results might come if different data are used. But the outcomes do make sense as they resemble outcomes of the ancestors, previous work done and published on this field. The conclusion rests on the different natures of different households of different countries and the situations they are in.

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