



## Do Remittances Promote Education? Empirical Evidence from Developing Countries

Muhammad Nouman Shafiq<sup>1</sup>, Xiuyun Yang<sup>2</sup>, Muhammad Atif Nawaz<sup>3</sup>

<sup>1</sup> Ph.D. Scholar, School of Economics and Finance, Xi'an Jiaotong University, Xi'an, Shaanxi Province, China.

Email: muhammadnoumanshafiq@yahoo.com

<sup>2</sup> Professor, School of Economics and Finance, Xi'an Jiaotong University, Xi'an, Shaanxi Province, China.

Email: yangxiuyun@xjtu.edu.cn

<sup>3</sup> Associate Professor, Department of Economics, The Islamia University of Bahawalpur, Pakistan.

Email: atif.nawaz.baloch@gmail.com

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### ABSTRACT

Considering that one of the Sustainable Development Goals (SDGs) is to promote education, in this regard, remittances have been suggested as a preferred motivator, especially in developing nations. In recent decades, migration from underdeveloped to developed countries has grown, which benefits the country economically and socially. Although, literature has witnessed the favorable impact of remittances on macroeconomic variables. However, little research examined these implications on education. The current study explores remittances' impact on education in developing countries. Data is taken from 90 developing countries over the period 1991-2020. Data is collected from two main sources: World Development Indicators and ICRG. For the analysis, remittances are an independent variable, whereas education is the dependent variable. Control variables include GDP per capita growth, education expenditures, urban population, and democracy. Results obtained from dynamic panel GMM indicate remittances' positive and significant impact on education. Similar results were found in the case of all control variables. The study suggests developing suitable incentives for migrants to remit, particularly the strategies persuading the costs and networks of remittances.

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Corresponding Author's Email: [muhammadnoumanshafiq@yahoo.com](mailto:muhammadnoumanshafiq@yahoo.com)

## 1. Introduction

Migration from developing to developed countries has increased considerably in recent decades. This trend helps the host nation and the origin state economically and socially. Skilled migrants receive international exposure and contribute to the advancement of host nation. On the other hand, they send money back to their families, which is known as remittances. (Arif, Raza, Friemann, & Suleman, 2019). Remittances are a substantial source of income for recipient families, especially during recessions (Ratha, 2007). After foreign direct investment, remittances are assumed the second largest source of income for developing countries (World Bank, 2006). Remittances outweigh foreign aid in most underdeveloped countries. In 2020, low and middle-income countries received remittances of 540 billion USD. Remittances remained resilient despite the spread of COVID-19 (World Bank, 2021). Spending remittances on food, consumption, or recreation is one option; investing is another.

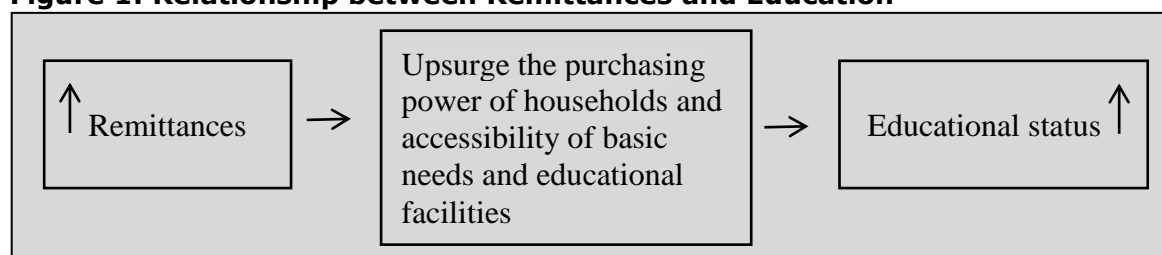
Remittances can improve household wellbeing if they raise human capital investment. Education is crucial for enhancing individual and family well-being, eliminating poverty, and stimulating economic growth and development (Askarov & Doucouliagos, 2020). Remittances role have been extensively studied at both the macro and micro levels. It is widely accepted that high growth rate requires technical progress which is possible through efficient human capital. Human capital can be increased with provision of health, knowledge of technology,

education and better standard of living. Every country needs to enhance the proficiency of its workforce (Kefela & Rena, 2008). How remittances affect the education of children in the workers' home countries is an important consideration.

Remittances can improve the well-being of children. By raising income and consumption, remittances can improve children's health and education. Migration can facilitate the transfer of knowledge and heighten awareness of the significance of education. Child work is linked to poverty and economic fluctuations. Remittances can reduce child labour since better and more stable income can free children from employment.

Remittances upsurge the purchasing power of households to maintain better life style results in attaining better education of children. At Macro level, remittances helpful in maintain Balance of payment. At micro level, remittances elevate consumption pattern of households, business investment, diminish poverty and improve overall status including education. As, remittances increase the purchasing power of household to get better educational facilities for their children. Remittances reduce the issue of budget constraint and households pay more attention toward their child's schooling.

**Figure 1: Relationship between Remittances and Education**



Source: Author's Construction

Educational outcomes of remittances can be positive or negative. In positive terms, remittances uplift the household budget deficit and reassure investment in education for their children. So remittances make possible access towards schooling for those children who can't afford due to budget constraint. In further, education make possible to migrate for high educated and skilled labor in foreign market (Chaaban & Mansour, 2012). So youth encourage to opt advance and technical degrees to avail better job opportunities in future.

In negative terms, firstly, migration can cause negative effect on enrollment and schooling of children because of parent absent creates deficiency in provision of role model and trainer. Secondly, a large migration causes high wage rate in home country due to drop in labor supply. Through child labor cover the shortage of labor supply and reducing the value of school enrollment (Nasir, Salman Tariq, & Rehman, 2011). Migration cause children reduce school enrollment to fill wage gap in order to fulfill social and economic liabilities (Hanson & Woodruff, 2003).

Remittances have multifaceted socio-economics effects in developing countries. Remittances increase income which helpful in buying education directly. Indirectly by enforcing families to indulge in business that augment welfare at micro and macro level (Kanaiaupuni & Donato, 1999). According to Lucas (2005), remittances increases consumption, poverty reduction that cause changings in labor market participation in short rum whereas in long run, provide strand to invest in health and educational pattern of children (Mansoor & Quillin, 2006). Nevertheless, Migration can disturb other family members and have negative impact on welfare including health status and school performance (Hanson & Woodruff, 2003).

The main objective of this study to examine the relationship between remittances and education in developing countries by using dynamic panel generalized method of moments (GMM). This study investigates whether receiving more remittances results in improved educational outcomes. This study will lead to more suggestions for policymakers in developing countries.

This research work is expressed as: section 2 enlightens literature review on remittances and education. Section 3 shows the Methodology. This chapter explains methodology and estimation techniques in detail for the analysis of foreign remittances and

education. Section 4 gives details of the Results and Discussion. In this chapter, all estimated results to find the impact of remittances on education in developing countries are discussed. Section 5 consists of conclusion and policy recommendations.

## **2. Literature Review**

Several studies have examined migration and its impact on child education in developing countries (Askarov & Doucouliagos, 2020; Bucheli, Bohara, & Fontenla, 2018; Huay, Winterton, Bani, & Matemilola, 2019; Mara et al., 2012; Nasir et al., 2011; Zhunio, Vishwasrao, & Chiang, 2012). Some studies show a favorable impact on children's schooling, while others show a detrimental impact.

Cuadros-Menaca and Gaduh (2020) studied the impact of remittances on child labor and schooling in Columbia. 69,303 samples from 6 to 18 years child's age were used. Dependent variable either for child labor or school attendance is taken as dichotomous variable. Amount of remittances is independent variable. Gran Encuesta Integrade de Hogares (GEIH) data is used for the analysis. Results of Instrumental Variable Probit technique indicates that with each additional unit of remittances, there was a rise in likelihood of attending school. When it comes to child labor, the situation is similarly the opposite. More assets and wealth increase likelihood of school enrollment and reduce child labor. Findings are consistent with the studies of Amuedo-Dorantes, Georges, and Pozo (2010); Arif et al. (2019); Askarov and Doucouliagos (2020); Mara et al. (2012).

Askarov and Doucouliagos (2020) analyzed the effect of remittances on educational expenditure in a household. Meta-analysis is used to find the effect of remittances on educational expenditure by considering 73 different studies from 30 countries. International remittances have significant and greater impact on educational expenditures as compare to domestic remittances. For most of the countries, educational expenditure increased by 35% through international remittances but in case of Latin America it increased by 53 percent. The study found that there is no gender discrimination for this effect.

Arif et al. (2019) examined the impact of remittances on higher education development in top remittances receiving nations. Eight middle income countries data is used from 1994 to 2013. The results of panel mean group (PMG) and panel ARDL indicates that remittances have positive and significant impact on higher education development in these countries. The study suggested that migrant workers and their families should be encouraged by the government to invest in capital accumulation projects that are beneficial for them and the country. Bucheli et al. (2018) investigated the mixed effects of remittances on child education by using bivariate probit model that tackles the issue of endogeneity and non-linearity. The study found both positive and negative effects of remittances.

Bansak, Chezum, and Giri (2015) found the impact of remittances on economic indicators including spending on education in Nepal. Survey based data Nepal Living Standard Survey from 5,988 individuals is used. Results of OLS and instrumental technique reveal that although remittances increase school enrollment of children but school quality has also its effect on school enrollment in Nepal. Internal remittances have more influence on school enrollment than external remittances. The reason is that households who receive internal remittances from migrant are more chances to move internally in order to get better facilities including education. Findings are consistent with the studies of Amuedo-Dorantes and Pozo (2010); Andersen, Christensen, and Tejerina (2007); Cuadros-Menaca and Gaduh (2020).

Amakom and Iheoma (2014) examined how foreign remittances affect health and educational outcomes for 18 Sub Saharan African countries. Two Stage Least Squares (2SLS) estimation technique was used for two simultaneous equations for health and education in order to avoid endogeneity issue. Findings indicate that remittances have positive impact on health and school enrollment. Control variables including per capita income, health expenditure and education expenditure have positive impact on health and education (Ahmad, Shafiq, & Gillani, 2019).

Mara et al. (2012) conducted theoretical research to find the influence of remittances on households' health and education for Albania and Macedonia. Study concluded that

remittances uplift the household's budget constraints and improve overall well-being. In short run, remittances increase consumption pattern, poverty reduction of households and in long run, improves socio-economic setup of the society that leads to better health and educational attainment (Shafiq & Gillani, 2018). Amuedo-Dorantes and Pozo (2010) studied that how remittances influence the attendance of school going children in Dominican Republic. Two-stage linear probability model is used by taking LAMP survey-based data of 907 individuals. Results reveal that remittances upsurge the schooling ratio while migration reduces school enrollment.

Nasir et al. (2011) found that foreign remittances effect school performance. To investigate this analysis, Index based (range 0-100) educational performance and remittances are taken as dependent and independent variable respectively. Household based primary data comprised of 400 observations collected from four cities of Khyber Pakhtunkhwa, Pakistan has been used. OLS results show remittances hurt academic performance. Control variables including parental education, family type and assets play vital role in attaining better educational performance of children. Impact of remittances on male education is greater than female in Syria and Jordan and opposite condition in Lebanon (Chaaban & Mansour, 2012).

One of the important family characteristics is household income that positively affects school attainment (Haveman & Wolfe, 1995). High income provides better housing and life facilities and better goods. Household income is helpful in buying school inputs for their children (Aturupane, Glewwe, & Wisniewski, 2013). Educational expenditures are just like investment that provides better income and production level in the future (Gupta, Verhoeven, & Tiongson, 2002; Musila & Belassi, 2004). Impact of urbanization is many folds in terms of social, political and economic. Growing urbanization is widely accepted as a sign of economic progress (Chang & Brada, 2006). Cities provide better education and career prospects for developed and developing countries. Political component, democracy more receptive to greater education facilities. Democratically elected governments spend more on public services like education (Kaufman & Segura-Ubiergo, 2001; Lake & Baum, 2001).

The above literature shows that remittances have dual effect on education (Askarov & Doucouliagos, 2020; Nasir et al., 2011). On the other hand, there are a number of studies at the national or regional level but few studies on developing economies that found the direct effect of remittances on education. The main objective of the present study is to contribute to the existing literature by finding the direct effect of remittances on education in developing countries. Two considerations justify our contribution. First, this study addresses a gap in research on developing countries by examining the direct effect of remittances on education from 1990 to 2021. Second, this study is different from others because it uses the dynamic panel generalized method of moments (GMM) to deal with endogeneity and look at how remittances and education change over time.

### **3. Data and Methodology**

According to the previous literature, the impact of remittances on schooling is more prominent in developing countries than in developed countries. Therefore, this study focuses on a sample of developing countries. This empirical work uses a dataset of 90 developing countries over the period 1991-2020. The countries included in this study are determined by the availability of accurate data for the period under consideration. The study uses a balanced panel data for the analysis. The secondary data were taken from the World Development Indicators (WDI) and ICRG.

#### **3.1 Model for Education**

Education is a proxy for human resource development and a future investment (Schultz, 1960). Households operate like production units (Becker, 1965; Becker & Tomes, 1976), allocating economic resources based on resource kind and time distribution. Holmes (1999) simplifies the home demand equation for education as:

$$Education = f(X) \tag{1}$$

"X" vector includes household wages, market and non-market input prices, and individual and family traits. Table 1 shows analyses dependent, independent, and control variables. Functional version of current analysis, can be written as:

$$ENROL = f(REM, GDPPC, EDUEXP, URBAN, DEM) \quad (2)$$

**Table 1: Description of Variables**

Acronyms	Full name	Role	Measurement
ENROL	School Enrollment	DV	Secondary school enrollment, (% gross)
REM	Remittances	IV	Remittances, received (Current U.S. dollars)
GDPPC	GDP per capita	CV	GDP per capita growth (annual %)
EDUEXP	Educational Expenditures	CV	Education expenditures (% of GDP)
URBAN	Urbanization	CV	Urban population (% of total population)
DEM	Democracy	CV	Index 0 (less) to 6 (high democracy)

**Note:** DV, IV, and CV stand for dependent variable, independent variable, and control variable respectively.

In panel form, equation 2 can be written as:

$$ENROL_{it} = \beta_0 + \beta_1 REM_{it} + \beta_2 GDPPC_{it} + \beta_3 EDUEXP_{it} + \beta_4 URBAN_{it} + \beta_5 DEM_{it} + \varepsilon_{it} \quad (3)$$

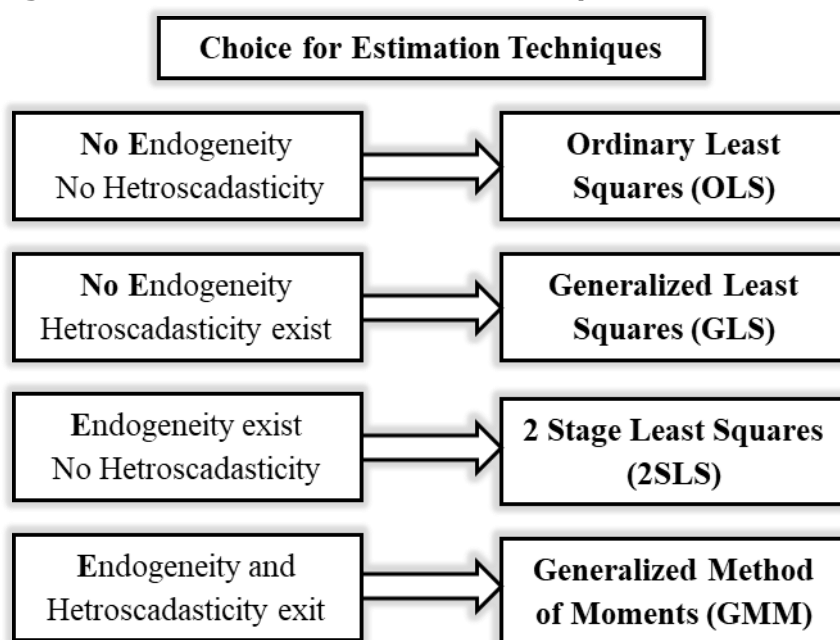
$\beta_0$  = intercept,  $\beta_1$  to  $\beta_5$  coefficients specify modification in school enrollment as a result of change in remittances, GDP per capita, educational expenditures, urbanization and democracy respectively. While  $\varepsilon$  indicates error term.

### 3.2 Estimation Technique

Panel data allows cross sections 'N' to be studied over time period 'T'. Following pooling assumption, all cross sections have same parameters. Advantages of using pooled data are: increase in sample size which provides efficient results (Baltagi, 2008), problem of omitted variable will not occur. The major disadvantage is that biased results will yield in case of heterogeneous panel if pooling assumption not met fully.

In current analysis, single equation estimation technique is used to find the impact of remittances on school enrollment. Figure 2 indicates the choice for estimation techniques with specific situations. OLS results will be unbiased when there will no issue of endogeneity and heteroscedasticity. Only presence of heteroscedasticity and endogeneity, estimation techniques will be GLS or 2SLS respectively. In case of heteroscedasticity and endogeneity, estimation technique will be GMM.

**Figure 2: Choice for Estimation Techniques**



Source: Author's Construction

Generalized Method of Moments (GMM) was firstly introduced by Hansen (1982). Model of school enrollment estimate by using GMM technique to for avoiding potential endogeneity

issue prevailing in independent variables. Generalized Method of Moments (GMM) is a standard method to estimate parameters in econometric models. GMM technique is usually applied in case of semi parametric models where the parameters are finite and full shape of distribution function may be unknown that's why maximum likelihood is not appropriate. GMM estimators are considered to be consistent and efficient and asymptotically normal. Maximum Likelihood is only applicable when number of moments is equal to that of parameter. While moment conditions are more than number of parameters results in over identified equations then GMM technique is not appropriate. Generalized Method of Moments is appropriate to solve over identified system. Revised version of GMM is further presented by Arellano and Bond (1991) and Arellano and Bover (1995).

In GMM technique, closely related variable to independent variable is known as instrumental variable. Instrumental variable 'Z' will be used in place of endogenous variable. Valid instrument must meet the following two situations:

Instrumental variable has strong correlation with endogenous variable.

$$Cov(X, Z) \neq 0$$

Zero correlation with error term.

$$Cov(Z, \varepsilon) = 0$$

The Sargan test assures the validity of instrumental variables. Null hypothesis confirms that instruments are valid. The current study will apply Arellano and Bond (1991) test for AR(2) to check occurrence of serial autocorrelation. If there is autocorrelation prevails then instruments are invalid. AR(2) should be more than 0.1 to indicate that no autocorrelation prevails and instruments are valid.

#### 4. Results and Discussion

In this section, all estimated results to find the influence of remittances on school enrollment in developing countries are discussed. All variables vary widely despite all data being from developing countries. Table 2 explains the summary statistics of the variable. The minimum value of school enrollment is 5.283 and in our sample it is detected for Tanzania in 1996. Tanzania is a low income country. In the end of twentieth century, Tanzania confronted education irregularities due to lack of educational materials, lack of infrastructure and non-qualified staff. On average, people don't start school until two or three years after the legal age due to high poverty. Maximum school enrollment value is 120.651, observed in Thailand in 2015. Between ages six to fifteen years education is compulsory in Thailand (World Bank, 2018). Thai government provides basic to senior high school education free. Thai constitution approves the free education of twelve years.

**Table 2: Summary Statistics of all Variables**

Variables	Mean	Std. Dev.	Min	Max
School Enrollment (% gross)	64.138	28.041	5.283	120.651
Log of Remittances (Current US\$)	19.989	2.357	10.232	25.146
GDP per capita growth (annual %)	1.949	4.553	-29.827	42.789
Educational Expenditures (% of GDP)	4.023	1.916	0	44.334
Urbanization (% of total)	48.771	20.021	11.885	92.111
Democracy (Index 0 to 6)	3.816	1.408	0	6

Source: Author's Calculation

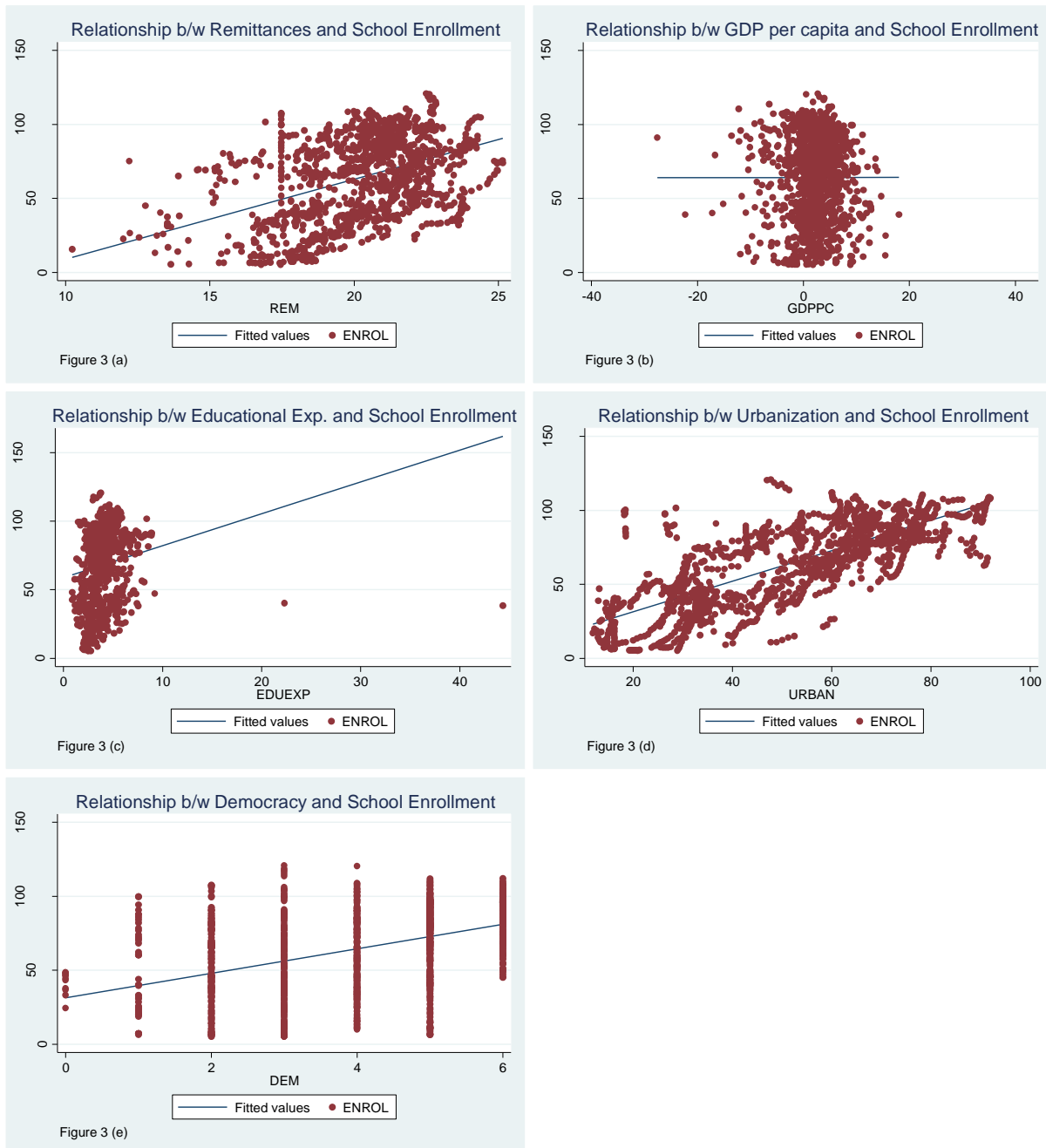
Sierra Leone in 1991 experienced minimum remittances (10.231) due to civil war. India in 2019 observed maximum remittances (25.146) flow. There are two main reasons. First, increasing number of Indian expats all over the world. Second, deep family roots. India saw a drop in remittances in 2009 due to the financial crisis. This crisis hurt fresh migration but stalled existing migrants. They save money to send home. As Indian items' dollar costs fell due to rupee depreciation, more migrants arrived. Table 3 expresses the correlation values among the variables of study. School enrollment is positively related with all determinants of education.

**Table 3: Correlation Matrix**

	ENROL	REM	GDPC	EDUEXP	URBAN	DEM
ENROL	1.000					
REM	0.448	1.000				
GDPPC	0.002	0.115	1.000			
EDUEXP	0.168	-0.078	-0.071	1.000		
URBAN	0.728	0.267	-0.138	0.148	1.000	
DEM	0.417	0.321	0.064	0.070	0.280	1.000

Source: Author's Calculation

Figure 3 shows the relationship of school enrollment with its determinants including remittances, GDP per capita growth, educational expenditures, urbanization and democracy. All variables positively correlate with school enrollment. High income, better educational services, level of democracy and urban area contribute positively in schooling section.



**Figure 3: Bivariate Graphical Analysis**

Source: Author's Construction

Regression analysis is widely considered in economics to evaluate the impact of independent variable on dependent variable. Firstly, pooled ordinary least square (OLS) is

estimate to understand the nature of data and its functional form. Our model features heteroscedasticity and endogeneity. Remittances, migration, and education choices are linked. Remittances aren't an exogenous shock in such cases. GMM is used to establish causation. The Dynamic Panel Generalized Method of Moments is best for both concerns. Table 4 illustrates dynamic panel GMM results following heteroscedasticity and endogeneity issues.

**Table 4: Results of Dynamic Panel GMM**

<b>Dependent Variable: School Enrollment</b>						
<b>Variables</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>Z</b>	<b>P &gt;  z </b>	<b>[95% Conf. Interval]</b>	
L1.	0.334***	0.031	10.85	0.000	0.274	0.395
L2.	0.218***	0.026	8.30	0.000	0.166	0.269
L.REM	0.514***	0.166	3.09	0.002	0.188	0.840
GDPPC	0.008*	0.005	1.68	0.093	-0.001	0.017
EDUEXP	0.547***	0.112	4.87	0.000	0.330	0.768
URBAN	0.671***	0.099	6.73	0.000	0.476	0.867
DEM	0.183***	0.074	2.48	0.013	0.039	0.328
Constant	-17.940***	3.560	-5.04	0.000	-24.918	-10.962
Wald Chi	6941.88					
(Prob. > chi2)	0.000					
AR(2) Prob. Value	0.138					
Sargan Prob. Value	0.365					

Source: Author's Calculation

Remittances are taken as principal variable for current analysis. Remittances provide the way of economic uplift of the households as well as the whole economy. One percent more remittances increases school enrolment by 0.514%. The remittances proliferate the purchasing power of household to get better educational facilities for their children. Estimated result is consistent with Amakom and Iheoma (2014); Amuedo-Dorantes et al. (2010); Arif et al. (2019); Cuadros-Menaca and Gaduh (2020); Mara et al. (2012). It may be explained as the remittances reduce poverty, which increases school enrolment (Acosta, 2006; Acosta, Fajnzylber, & Lopez, 2007), improving employment (Rodriguez & Tiongson, 2001), dropping income inequality (Adams Jr, 1989; Lipton, 1980; Stark, Taylor, & Yitzhaki, 1988). Remittances have many fold benefits for developing countries by providing employment, private saving, consumption and investment, GDP growth and balance of payment. Remittances increase household living standards. (Durand, Parrado, & Massey, 1996). Remittances reduce the issue of budget constraint and households pay more attention toward their child's schooling.

One of the important family characteristics is household income that positively affects school attainment (Becker & Tomes, 1986; Haveman & Wolfe, 1995). One percent increases in GDP per capita growth boost school enrollment by 0.008 percent (Amakom & Iheoma, 2014; Amuedo-Dorantes & Pozo, 2010; Aturupane et al., 2013). Per capita GDP shows the economic performance at both individual and country level which reflects the indication of productivity level and living standard. Public education expenditures can finance and allocate scarce resources to produce quality education. One percent increases in education expenditure causes 0.547 percent increase in education enrollment (Filmer & Pritchett, 1999; Gupta et al., 2002). Educational expenditures improve school enrollment by providing basic inputs including school, infrastructures, scholarships or free basic education.

Urbanization is growing fast in low and middle-income countries to attain better level of living. One percent increases in urban population causes 0.671 percent increase in school enrollment. In urban areas, improved facilities and availability of education are possible as compared to rural areas (Tansel, 2002). Urbanization provides better educational facilities through creation of jobs, availability of basic needs including education. Growing urbanization is widely accepted as a sign of economic progress (Chang & Brada, 2006; Njoh, 2003). Political factor, role of democracy is more responsive to demand of attaining better education facilities. One unit increase in democracy results in 0.183 percent increase in school enrollment (Kaufman & Segura-Ubiergo, 2001; Lake & Baum, 2001). In democracy, rulers have more incentive to focus more on social spending like education in order to reelect again (Fardmanesh & Habibi, 2000). In a nutshell, all variables including remittances, GDP per capita growth, educational expenditures, urbanization and democracy have positive impact on school enrollment.



## 5. Conclusion and Policy Recommendations

A comprehensive literature discusses remittances' positive impact on poor economies' quality of life. Remittances remove budget limitations by providing income to spend, save, and invest in development. Micro and macro impact of remittances. Remittances boost household income and spending. Remittances reduce poverty, boost financial development, and boost macroeconomic growth. (Aggarwal & Peria, 2006). One of the important concerns of this study is to highlight the educational outcomes of remittances for developing countries. In current analysis, panel dataset containing 90 developing countries is used range from 1991-2020. Data is taken from World Development indicators (WDI) and ICRG.

After addressing the issues of heteroscedasticity and endogeneity, dynamic panel GMM findings are achieved. Results suggest that remittances help many poor countries progress. Remittances reduce budget constraints and families priorities their child's education. All control variables affect school enrolment positively, including GDP per capita growth, educational spending, urbanization, and democracy.

It is advised that policymakers create appropriate incentives for migrants to send money home, especially those that decrease the costs and networks of remittances. Additionally, attention must be paid to methods for easing financial restraints by giving low-income households chances to generate money. Additionally, it is advised to concentrate on the laws that would expand employment opportunities through international foundation.

Further research can consider the sources of remittances either form which country or region is driving force to flow remittances. The current study ignored the role of corruption and governance whether these two variables are matter to discuss that either they have impact on education or not.

### Authors Contribution

Muhammad Nouman Shafiq: literature search, data collection, data interpretation, drafting  
Xiuyun Yang: critical revision, incorporation of intellectual content  
Muhammad Atif Nawaz: study design and concept, data analysis, data interpretation

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### References

- Acosta, P. (2006). Labor supply, school attendance, and remittances from international migration: the case of El Salvador. *World Bank Policy Research Working Paper*(3903).
- Acosta, P., Fajnzylber, P., & Lopez, J. H. (2007). *The impact of remittances on poverty and human capital: evidence from Latin American household surveys* (Vol. 4247): World Bank Publications.
- Adams Jr, R. H. (1989). Worker remittances and inequality in rural Egypt. *Economic Development and Cultural Change*, 38(1), 45-71. doi:<https://doi.org/10.1086/451775>
- Aggarwal, R., & Peria, M. S. M. (2006). *Do workers' remittances promote financial development?* (Vol. 3957): World Bank Publications.
- Ahmad, T. I., Shafiq, M. N., & Gillani, S. (2019). Foreign Remittances and Human Resource Development in Developing Countries. *IUB Journal of Social Sciences*, 1(1), 43-60.
- Amakom, U., & Iheoma, C. G. (2014). Impact of migrant remittances on health and education outcomes in sub-Saharan Africa. *IOSR Journal of Humanities and Social Science*, 19(8), 33-44.

- Amuedo-Dorantes, C., Georges, A., & Pozo, S. (2010). Migration, remittances, and children's schooling in Haiti. *The Annals of the American Academy of Political and Social Science*, 630(1), 224-244. doi:<https://doi.org/10.1177/0002716210368112>
- Amuedo-Dorantes, C., & Pozo, S. (2010). Accounting for remittance and migration effects on children's schooling. *World Development*, 38(12), 1747-1759. doi:<https://doi.org/10.1016/j.worlddev.2010.05.008>
- Andersen, L. E., Christensen, B. J., & Tejerina, O. M. (2007). A micro-level dynamic analysis of the effects of remittances on social mobility, schooling, work, consumption and investment in Nicaragua. *Grupo Integral, Study No. GIE12*, 1-25.
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, 58(2), 277-297. doi:<https://doi.org/10.2307/2297968>
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, 68(1), 29-51. doi:[https://doi.org/10.1016/0304-4076\(94\)01642-D](https://doi.org/10.1016/0304-4076(94)01642-D)
- Arif, I., Raza, S. A., Friemann, A., & Suleman, M. T. (2019). The role of remittances in the development of higher education: Evidence from top remittance receiving countries. *Social Indicators Research*, 141(3), 1233-1243. doi:<https://doi.org/10.1007/s11205-018-1857-8>
- Askarov, Z., & Doucouliagos, H. (2020). A meta-analysis of the effects of remittances on household education expenditure. *World Development*, 129(May), 104860. doi:<https://doi.org/10.1016/j.worlddev.2019.104860>
- Aturupane, H., Glewwe, P., & Wisniewski, S. (2013). The impact of school quality, socioeconomic factors, and child health on students' academic performance: evidence from Sri Lankan primary schools. *Education Economics*, 21(1), 2-37. doi:<https://doi.org/10.1080/09645292.2010.511852>
- Baltagi, B. H. (2008). *Econometric analysis of panel data* (Vol. 4). Chichester: John Wiley & Sons.
- Bansak, C., Chezum, B., & Giri, A. (2015). Remittances, school quality, and household education expenditures in Nepal. *IZA Journal of Migration*, 4(1), 1-19. doi:<https://doi.org/10.1186/s40176-015-0041-z>
- Becker, G. S. (1965). A Theory of the Allocation of Time. *The economic journal*, 75(299), 493-517. doi:<https://doi.org/10.2307/2228949>
- Becker, G. S., & Tomes, N. (1976). Child endowments and the quantity and quality of children. *Journal of political economy*, 84(4, Part 2), S143-S162. doi:<https://doi.org/10.1086/260536>
- Becker, G. S., & Tomes, N. (1986). Human capital and the rise and fall of families. *Journal of labor economics*, 4(3, Part 2), S1-S39. doi:<https://doi.org/10.1086/298118>
- Bucheli, J. R., Bohara, A. K., & Fontenla, M. (2018). Mixed effects of remittances on child education. *IZA Journal of development and migration*, 8(1), 1-18. doi:<https://doi.org/10.1186/s40176-017-0118-y>
- Chaaban, J., & Mansour, W. (2012). *The impact of remittances on education in Jordan, Syria and Lebanon*. Paper presented at the Economic Research Forum: Working Paper 684.
- Chang, G. H., & Brada, J. C. (2006). The paradox of China's growing under-urbanization. *Economic systems*, 30(1), 24-40. doi:<https://doi.org/10.1016/j.ecosys.2005.07.002>
- Cuadros-Menaca, A., & Gaduh, A. (2020). Remittances, child labor, and schooling: Evidence from Colombia. *Economic Development and Cultural Change*, 68(4), 1257-1293. doi:<https://doi.org/10.1086/702790>
- Durand, J., Parrado, E. A., & Massey, D. S. (1996). Migradollars and development: A reconsideration of the Mexican case. *International Migration Review*, 30(2), 423-444. doi:<https://doi.org/10.1177/019791839603000202>
- Fardmanesh, M., & Habibi, N. (2000). What is vulnerable during fiscal retrenchment? *Economics & Politics*, 12(1), 83-108. doi:<https://doi.org/10.1111/1468-0343.00070>
- Filmer, D., & Pritchett, L. (1999). The effect of household wealth on educational attainment: evidence from 35 countries. *Population and development review*, 25(1), 85-120. doi:<https://doi.org/10.1111/j.1728-4457.1999.00085.x>
- Gupta, S., Verhoeven, M., & Tiongson, E. R. (2002). The effectiveness of government spending on education and health care in developing and transition economies. *European Journal of Political Economy*, 18(4), 717-737. doi:[https://doi.org/10.1016/S0176-2680\(02\)00116-7](https://doi.org/10.1016/S0176-2680(02)00116-7)

- Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. *Econometrica: Journal of the econometric society*, 50(4), 1029-1054. doi:<https://doi.org/10.2307/1912775>
- Hanson, G. H., & Woodruff, C. (2003). *Emigration and educational attainment in Mexico*. Retrieved from <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.716.5969&rep=rep1&type=pdf>
- Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of economic literature*, 33(4), 1829-1878.
- Holmes, L. (1999). Competence and capability: from confidence trick to the construction of the graduate identity. In D. O'REILLY, L. CUNNINGHAM, & S. LESTER (Eds.), *Developing the Capable Practitioner: Professional Capability Through Higher Education* (pp. 83-98). London: Kogan Page.
- Huay, C. S., Winterton, J., Bani, Y., & Matemilola, B. T. (2019). Do remittances promote human development? Empirical evidence from developing countries. *International Journal of Social Economics*, 46(10), 1173-1185. doi:<https://doi.org/10.1108/IJSE-12-2018-0673>
- Kanaiaupuni, S. M., & Donato, K. M. (1999). Migradollars and mortality: The effects of migration on infant survival in Mexico. *Demography*, 36(3), 339-353. doi:<https://doi.org/10.2307/2648057>
- Kaufman, R. R., & Segura-Ubiergo, A. (2001). Globalization, domestic politics, and social spending in Latin America: a time-series cross-section analysis, 1973-97. *World politics*, 53(4), 553-587. doi:<https://doi.org/10.1353/wp.2001.0016>
- Kefela, G., & Rena, R. (2008). Human capital investment in Northeast African states: a re-assessment. *African Journal of Public Administration and Management*, 19(1), 41-57.
- Lake, D. A., & Baum, M. A. (2001). The invisible hand of democracy: political control and the provision of public services. *Comparative political studies*, 34(6), 587-621. doi:<https://doi.org/10.1177/0010414001034006001>
- Lipton, M. (1980). Migration from rural areas of poor countries: the impact on rural productivity and income distribution. *World Development*, 8(1), 1-24. doi:[https://doi.org/10.1016/0305-750X\(80\)90047-9](https://doi.org/10.1016/0305-750X(80)90047-9)
- Lucas, R. E. (2005). *International migration and economic development: Lessons from low-income countries*: Edward Elgar Publishing.
- Mansoor, A. M., & Quillin, B. (2006). *Migration and remittances: Eastern Europe and the former Soviet Union*: World Bank Publications.
- Mara, I., Narazani, E., Saban, N., Stojilovska, A., Yusufi, I., & Zuber, S. (2012). Analysis of literature on the effects of remittances on education and health of family members left behind. *International Migration and Development*, 31, 511-523.
- Musila, J. W., & Belassi, W. (2004). The impact of education expenditures on economic growth in Uganda: evidence from time series data. *The Journal of Developing Areas*, 38(1), 123-133.
- Nasir, M., Salman Tariq, M. S., & Rehman, F.-u. (2011). *The effect of foreign remittances on schooling: Evidence from Pakistan*. Retrieved from <https://ideas.repec.org/p/pid/wpaper/201166.html>
- Njoh, A. J. (2003). Urbanization and development in sub-Saharan Africa. *Cities*, 20(3), 167-174. doi:[https://doi.org/10.1016/S0264-2751\(03\)00010-6](https://doi.org/10.1016/S0264-2751(03)00010-6)
- Ratha, D. (2007). Leveraging remittances for development. *Policy Brief*, 3(11), 1-16.
- Rodriguez, E. R., & Tiongson, E. R. (2001). Temporary migration overseas and household labor supply: evidence from urban Philippines. *International Migration Review*, 35(3), 709-725. doi:<https://doi.org/10.1111/j.1747-7379.2001.tb00037.x>
- Schultz, T. W. (1960). Capital formation by education. *Journal of political economy*, 68(6), 571-583. doi:<https://doi.org/10.1086/258393>
- Shafiq, M. N., & Gillani, S. (2018). Health Outcomes of Remittances in Developing Economies: An Empirical Analysis. *Pakistan Journal of Economic Studies (PJES)*, 1(1), 1-20.
- Stark, O., Taylor, J. E., & Yitzhaki, S. (1988). Migration, remittances and inequality: A sensitivity analysis using the extended Gini index. *Journal of Development Economics*, 28(3), 309-322. doi:[https://doi.org/10.1016/0304-3878\(88\)90002-8](https://doi.org/10.1016/0304-3878(88)90002-8)
- Tansel, A. (2002). Determinants of school attainment of boys and girls in Turkey: individual, household and community factors. *Economics of education review*, 21(5), 455-470. doi:[https://doi.org/10.1016/S0272-7757\(01\)00028-0](https://doi.org/10.1016/S0272-7757(01)00028-0)

- World Bank. (2006). *Global Economic Prospects: Economic Implications of Remittances and Migration*. In. Washington, DC: World Bank.
- World Bank. (2018). Report: A Quality Education for All in Thailand. Retrieved from <https://www.worldbank.org/en/country/thailand/publication/wanted---a-quality-education-for-all-in-thailand>
- World Bank. (2021). Defying Predictions, Remittance Flows Remain Strong During COVID-19 Crisis [Press release]
- Zhunio, M. C., Vishwasrao, S., & Chiang, E. P. (2012). The influence of remittances on education and health outcomes: a cross country study. *Applied Economics, 44*(35), 4605-4616. doi:<https://doi.org/10.1080/00036846.2011.593499>