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Health Outcomes of Remittances in Developing Economies: An Empirical Analysis

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Abstract

Remittances are playing a vital role in the wellbeing of recipients by enlarging opportunities to a better quality of life, reducing child labor, providing a way to transfer knowledge, and educating about infant health care. Keeping in view the importance of remittances in the life of people, the current study intends to investigate the impact of remittances on child health by using a panel dataset covering 132 countries spanning over 1980 to 2015. Theoretically, the paper is based on Grossman's (1972) demand for the health model. So, GDP per capita and health expenditures are taken as economic, the number of physicians as social, and access to improved water facilities and urbanization as environmental vectors in the model. To tackle the endogenous nature of remittances, the System Generalized Method of Moments is used. The results show that role of remittances helps to promote child health. Regarding control variables, GDP per capita, the number of physicians, access to improved water facilities, and health expenditures reduce whereas urbanization increases infant mortality. This study suggests that growth in remittances could be used as a policy intervention to improve child health.

Keywords: Remittances, Child Health, System GMM, Panel Data.
JEL Codes: F24, I1, C23

1. Introduction

Sustainable Development Goals (SDGs) have revealed the importance of health for its vital contribution to human development. Approximately 40 percent goals of the SDGs are directly linked to health. These goals include the improvement of the mother's health,

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reduced level of infant mortality, and the struggle against HIV/AIDS. Child health is a good indicator to measure the overall services provided to the health sector.

Infant mortality is a universal public health concern which considers the expiry rate of infants out of thousand within one year. According to the world health report (WHO, 2010), the global infant mortality rate was 148/1000 (per live births) in 1955, then 59/1000 (per live births) in 1995; and is anticipated to be 29/1000 (per live births) in 2025. Although available statistics on infant mortality show that, on average, infant mortality has been reduced but a larger variation across countries poses a serious challenge. For achieving better health, remittances stand as key sources of financing health. It is widely believed that remittances improve health outcomes in developing countries (Mishra & Newhouse, 2007).

Several studies highlight the importance of remittances in financing households' health (Amuedo-Dorantes, Sainz, & Pozo, 2007; Bayati, Akbarian, & Kavosi, 2013; Chauvet, Gubert, & Mesple-Somps, 2008; Edwards & Ureta, 2003; Fayissa & Gutema, 2005).

An upward trend in remittances is observed in the recent economic phase (Aziz, 2019). According to World Bank estimates, remittances raised 10 percent at the global level, and it is expected to grow 3.7 percent more (US$ 689 to US$ 715) in 2019. Moreover, a large share of this estimate is found in developing countries (US$ 528 to US$ 549). Remittances are more even support of financing for developing countries (low- and middle-income countries). Remittances received by Nepal, Kyrgyzstan and Tajikistan contribute more than one fourth to their GDP. Similarly, Liberia and Haiti receive 15 to 25 percent respectively of their GDPs. All regions receive a high flow of remittances comparatively India ($72 billion) and China ($67 billion) are higher remittances recipient countries (Small, 2019).

These flows of remittances are playing a vital role in the wellbeing of recipients by providing purchasing to gain better food, shelter, education, business investments and health services. In the discussion of health, remittances can progress the health status of the infant. For the reason that migration not only reduces child labor, stable income can escape children from working but also provides a way to transfer knowledge and educate regarding infant health care as well.

Although developed countries have achieved many of their health goals such as reduced infant mortality due to high technology, access to improved water facilities and sanitary services and better medical advances, still developing countries are facing serious health issues regarding the infant. Millions of children die every year before completing their first year. In this regard, serious public policies are needed for infant survival.

Several factors directly cause infant mortality as infections, sudden health syndromes, inborn abnormalities, and indirect factors include poverty, parental care, and other economic, social and environmental factors. The individuals, who don't participate in social, cultural, and economic activities, generally face more deprivation such as low income, low standard of living, low education, and health status. Besides, gender-biased social structure not only deprives women to participate in social activities but also harms infant health in the future. Literature is witnessed that female education plays an important role in child health. Despite the above-mentioned factors, the role of remittances is a matter of discussion.

This study intends to identify the relationship between child mortality and remittances. Furthermore, this paper attempts to tackle the endogeneity problem between child mortality and remittances by using internal instruments. The paper attempts to see whether remittances lead to reduce child mortality or not? The rest of the study is planned as mentioned: Section two presents literature on health and remittances. Section three explains the methodology and data description. Section four presents the explanation of the results and the conclusion exists in Section five.

2. Literature Review

2.1 Literature on Health Determinants

Grossman (1972) and Garber (1989) considered education, a good defender of health rather than income whereas Elo and Preston (1996) considered income conditioned with education. Shaw, Horrace, and Vogel, (2005) researched the life expectancy production function for 29 developed countries from 1960 to 1999. OLS results indicated that the pharmaceutical expenditures were necessary for life expectancy. Lifestyle inputs: tobacco and alcohol had negative while vegetables and fruits consumption had a constructive influence on life expectancy. Gomanee, Morrissey, Mosley, and Verschoor, (2005) researched to find whether welfare level was affected by government expenditures and aid for 104 countries from 1980-2000. Results of the

fixed effect indicated that low-income countries achieved better welfare levels through aid as compared to middle-income countries. Aid had direct (social services provision) and indirect (growth) impact on welfare.

Different studies found the miscellaneous impact of health expenditures on health. So, no consensus exists for health outcomes of health expenditures. Novignon, Olakojo, and Nonvignon, (2012), and Rajkumar and Swaroop (2008) found a positive impact of health expenditures on life expectancy in the prism of good governance whereas Filmer and Pritchett (1999) show insignificant influence on health. Yaqub, Ojapinwa, and Yussuff, (2012), for example, concluded that health expenditures had an insignificant effect on health outcomes (infant mortality and life expectancy). Results of OLS and 2SLS indicated that developing countries (like Nigeria) were unable to gain better health outcomes in the presence of corruption.

History illustrates the link between health and income in different ways. Gravelle (1998), for example, shows a curvilinear association between income and health which indicates that larger health improvement could be observed if the income of the poor had been increased as compared to that of rich. Whereas, Wolfson et al. (1999) defined a log-linear link between income and health which indicated that high income promoted the health status across all income levels. Different strands of literature focused on the determinants of the level of health; education (Guralnik, Land, Blazer, Fillenbaum, & Branch, 1993; Hill & King, 1995), urbanization (Kalediene & Petrauskiene, 2000; Rogers & Wofford, 1989), health expenditures (Collins & Klein, 1980), and access to improved water facilities (Gulis, 2000).

2.2 Literature on Remittances and Child Health

Chauvet et al. (2008) investigated whether human development (infant mortality and child mortality) were affected by aid and remittances? To solve this query, the study used child and infant mortality rates as dependent and GDP per capita, number of physicians, female educational attainment, the dummy for missing education variable, remittances per capita, health aid per capita as independent variables. The study used simple OLS, 2SLS with fixed effects and with time fixed methods. The study took panel data from 1987 to 2004. The analysis found that health aid and remittances had a direct impact on health (child and infant mortality rate) in developing countries.

Drabo and Ebeke (2010) studied the impact of remittances, health aid and public spending on health care services in developing countries. The study used to access to health care services as the dependent variable while remittances per capita, public spending per capita on health, health aid per capita, GDP per capita, and maternal education as independent variables. The study took data from 56 developing countries and applied the Grossman model. The study concluded that remittances and foreign aid had a positive impact on health care services in developing states.

Mara et al. (2012) observed the effect of remittances on educational and healthcare attainments for Albania and Macedonia. The study concluded that remittances affected the consumption pattern, reduced poverty, and inequality in the short-run that brought changes in the labor market. Whereas remittances brought socio-economic development. Nguyen et al. (2013) studied the education, labor, and healthcare utilization of children who were affected by the remittances in Vietnam. The study used the fixed-effect method to analyze data taken from Vietnam Household Living Standard Surveys (VHLSS) for two years et al. 2006 and 2008. The study found the positive and direct impact of remittances on child welfare.

Although, an enormous literature has revealed that remittances has productive waves for development as growth of human and physical capital (Bansak & Chezum, 2009; Borraz, 2005; Calero, Bedi, & Sparrow, 2008; Woodruff & Zenteno, 2007; Yang, 2008), a reduction in the inequalities of income level (Barham & Boucher, 1998; Chauvet & Mesple-Somps, 2007; Chauvlet & Piger, 2008; Koechlin & Leon, 2007), economic growth (Amuedo-Dorantes, 2004; Barajas, Gapen, Chami, Montiel, & Fullenkamp, 2009; Jongwanich & Kohpaiboon, 2019) and poverty reduction (Adams, 1991; Adams et al., 2008; Gupta, Pattillo, & Wagh, 2009; Lipton, 1980). Many studies have pointed out the impact of remittances on education (Ambler, Aycinena, & Yang, 2015; Docquier, Rapoport, & Salomone, 2012) and health (Chauvet, Gubert, & Mesple-Somps, 2013; Frank & Hummer, 2002; Frank, 2005; Kanaiaupuni & Donato, 1999) but still, there is a need to highlight the importance of remittances for health. This study intends to find the influence of remittances on infant mortality for a set of larger panel data set.

3. Data and Methodology

Many studies have shown the importance of health indicators through different channels. Many input factors involved in the health

production function. According to Grossman (1972), health is taken as output which has many input factors.

$$\boldsymbol{Health = f\ (Input\ Factors)}$$

Here H indicates an individual's health as output which depends upon several input factors. The input factors consist of income, education, and lifestyle of individuals, availability of medical and other health facilities and so on. The above-mentioned model indicates the micro-level production function of health. To transform the micro model into the macro level, Fayissa and Gutema (2005) approach is used to recognize input factors into social, economic and environmental factors as:

$$\boldsymbol{H = f\ (S, E, V)}$$

Where S, E, and V indicates per capita social, economic and environmental variables. Each component includes many variables, but many studies have used different variables depending on the reliability and availability of data and considering other limitations. For this paper, GDP per capita and health expenditures are taken for economic vector, the social vector includes the number of physicians while access to improved water facilities and urbanization are taken for environmental vector to find the impact of remittances on infant mortality.

Income is considered as one of the main contributing factors of health status. Income affects health status through one's ability to fulfill basic needs, nutrient intake and makes access to basic health care services possible (Cingolani, Thomsson, & Crombrugghe, 2015; Wang, 2003). Access to improved water is the basic need and necessary for health (Besley & Kudamatsu, 2006; Cingolani et al., 2015; Gulis, 2000). In the absence of access to improved water facilities, people have to rely on polluted water which causes many harmful infectious diseases, level of health declines in a particular area. The number of physicians harms infant mortality, signifying that infant mortality reduces with sufficient availability of physicians. For the reason that it makes the availability of and accessibility to physicians possible without wasting time.

Another variable that affects health is urbanization. The impact of urbanization on health quality is twofold phenomena. In the first phase, urbanization provides easy access to basic health services,

vaccines, medicines, hospitals. In this way, urbanization has an encouraging impact on health quality (Cingolani et al., 2015; Godfrey & Julien, 2005; Gupta, Verhoeven, & Tiongson, 2002). In the second phase, urbanization may cause overcrowdedness, social deprivation and an unhealthy environment (Rogers & Wofford, 1989), especially in developing countries. Health expenditures provide basic health facilities and care and help in improving health performance (Collins & Klein, 1980; Novignon et al., 2012). Health expenditures are comparatively low in developing countries. Easterly, Alesina and Baqir, (1997) highlight it as racial diversity that discourages political will to deliver public goods. Relationship between remittances and infant mortality can be written in panel form as given:

$$\boldsymbol{Infant\ Mortality_{it} = \beta_{it} + \beta_1 Remittances_{it} + \beta_2 X_{it} + u_{it}}$$

Here, X_{it}= vector which includes the influencing factors of infant mortality (GDP per capita, access to improved water facilities, number of physicians, health expenditures, and urban population growth). This paper considered infant mortality as a proxy of health to estimate the perception of individual health. For infant mortality, an equation used is:

$$\boldsymbol{IM_{it} = \beta_0 + \beta_1 REM_{it} + \beta_2 GDPPC_{it} + \beta_3 IW_{it} + \beta_4 PHY_{it} + \beta_5 HEX_{it} + \beta_6 UPG_{it} + u_{it}}$$

Where, β_0= intercept, β_1= change in infant mortality with respect to remittances, β_2, β_3, β_4, β_5 and β_6 = change in infant mortality with respect to GDP per capita, access to improved water facilities, number of physicians, health expenditures, and urbanization respectively. t = time period 1980 - 2015, i = countries 1, 2…132 and ϵ_{it}= error terms (with standard classical properties).

4. Results and Discussion

In this section, we report the empirical results based on panel data for 132 countries over the period 1980 to 2015. Section 4.1 describes the summary statistics. Section 4.2 explains diagnostic tests. In section 4.3, the panel data model is estimated by allowing potential endogeneity problem. We have reported the estimated results (Pooled Ordinary Least Square, Fixed effects, random effects, and System Generalized Method of Moments model). Section 4.4 explains the results obtained from sensitivity analysis.

4.1 Summary Statistics

Although entire data is based on developing countries, yet large variation is observed in all variables. Table 1 shows that the minimum value of infant mortality belongs to Belarus in 2013. Although Belarus is considered among developing countries yet is ranked in the eighth position among developed countries having low infant mortality. According to UNICEF, only one child in 667 expires in the first month in Belarus (UNICEF, 2018a). Better health care facilities including nurses, doctors, and midwives are available in Belarus. The maximum rate of infant mortality is belonged to Liberia (in 1991). Liberia is a poor country with a history of conflicts and insecurity. The main cause of infant mortality in Liberia is malnutrition and mothers are not enough trained on how to nourish their children. According to UNICEF, above 15 percent of children die before their 1st birthday in Liberia (UNICEF, 2018b).

Table 1
Summary Statistics of the Variables in the Study

Variables	Obs.	Mean	Ste. Dev	Min	Max
Infant Mortality	5662	62.9787	41.0447	3.4000	212.5000
Remittances	3651	4.8816	8.4406	8.7058	99.8218
GDP per capita	3872	7.4417	1.0259	4.7487	10.1555
Physicians	3765	1.2640	1.3998	0.0020	9.8140
Urban Population	3675	14.4829	2.0074	9.3890	19.8777
Health Expenditures	4779	5.7970	2.4337	0.3683	30.8293
Improved Water	5238	77.2644	18.8324	13.2000	100

Uruguay in 2001 experienced minimum remittances. India in 2014 observed maximum remittances flow. Once India has faced a decline in remittances in 2009 due to the financial crisis. Although this crisis distressed new migration and stuck existing migrants. They send money to their hometown by cutting expenses. The depreciation of Indian rupee against US dollar attracted more migrants.

Liberia has experienced the lowest GDP per capita in 1995. Liberia is one of the poor countries with a formal employment rate of 15 percent. Liberian economy largely depends on aid, exports of natural resources and foreign direct investment. So, Liberia has an overall low GDP per capita. Qatar has experienced the highest GDP per capita growth (in 2011). Qatar is a highly stable economy with a high growth rate, high inventions, and employment and less financial crisis. That's why people have a high per capita income. Qatar is a small independent nation and has the world's third major natural gas reserves. According

to the IMF, Qatar has a high GDP per capita as most people are indulged in manufacturing, financial services, and construction.

Swaziland (in 2000) has the minimum number of physicians observed in our study. Swaziland has a lack of human capital for health (mainly physicians) 44 percent of posts of physicians are unfilled. Seychelles (in 1991) had the maximum availability of physicians. Seychelles provides better health services to its citizens and efficient staff including physicians. Ethiopia (in 1990) had minimum access to improved water facilities. Ethiopia has the lowest walking access to clean drinking water and its 61 million people face deficiency in getting clean water. They collect water from insecure ponds and wells and mostly collect water by spending more than three hours. Whereas Armenia (in 2014, 2015), Bahrain (from 2002 to 2015), Bhutan (in 2014-2015), Hungary (from 2009 to 2015), Qatar (from 2008 to 2015), Romania (in 2013-2015) and Turkey (in 2014- 2015) have maximum access to clean and improved water. These all countries have natural as well as public services to provide clean and healthy water to its people.

The minimum urban population is observed in Rwanda (in 1990). Till the twentieth century, Rwanda had the lowest urbanization. Rwanda is the least progressive and poorest country. The maximum urban population observed in Gibraltar (from 1990-2015) and Nauru (from 1990-2015). Gibraltar has 30,000 residents and Nauru has 11,347 people and they live in an urban area. Minimum health expenditures are observed in Timor-Leste (in 2007). Timor least has 1.5 percent low health expenditures. Its government has made such a decision to cut health expenditures. Timor least has deprived of health care facilities with low access to vital hospital resources. Maximum health expenditures are observed in the Marshall Islands (in 1995). The Marshall Islands provides better health care services to its citizens through improved infrastructure and efficient staff.

4.2 Panel Data Analysis

Column 1 of Table 2 reports Pooled Ordinary Least Square results of remittances impact on infant mortality. Results indicate that the impact of remittances on infant mortality is negative and significant. Specifically, a 1 percent increase in remittances leads to 0.368 per thousand live births decline in infant mortality. An Increase in remittances enhances the purchasing power of the individual which ultimately improves his/her access to sufficient diet, shelter, education and health services. Henceforth, a healthier lifestyle along with a low

infant mortality rate is achieved (Bayati et al., 2013; Fayissa & Gutema, 2005).

Table 2
Empirical Results of Remittances on Infant Mortality

Independent Variables	Dependent Variable: Infant Mortality			
	Pooled OLS	**Fixed Effects**	**Random Effects**	**GMM**
Log of Remittances	-0.368***	-0.107***	-0.0661	-0.256**
	(0.0810)	(0.0393)	(0.0449)	(0.104)
Log of GDP per capita	-9.434***	-10.67***	-12.20***	-7.982***
	(0.842)	(0.963)	(1.005)	(1.364)
Physicians	-3.131***	1.277*	0.680	-2.683***
	(0.519)	(0.659)	(0.701)	(0.500)
Log of Urban Population	0.621**	-30.99***	-4.401***	0.800**
	(0.300)	(1.871)	(0.746)	(0.333)
Health Expenditures	0.0941	-0.525***	-0.852***	-0.501*
	(0.269)	(0.171)	(0.192)	(0.296)
Improved Water	-0.631***	-0.530***	-1.000***	-0.569***
	(0.0532)	(0.0663)	(0.0609)	(0.101)
Constant	157.5***	640.7***	285.5***	138.4***
	(7.048)	(25.01)	(11.44)	(7.468)
Observations	683	683	683	356
R-Squares	0.697	0.797		0.689
Number of Countries		118	118	
Hausman Test Result		Prob > chi2 = 0.0000		
Estat Endogenous				P = 0.0181
Estat overid				P = 0.7145

Standard errors are in parentheses and ***, ** and * show p<0.01, p<0.05 and p<0.1 respectively.

Results of the Fixed effects and Random effects are reported in columns 2 and 3 respectively. Hausman test advocates that results of fixed effects are more appropriate as compared to random effects. Fixed effects results show that infant mortality is reduced by the influence of remittances.

However, the problem of endogeneity prevails in our empirical model. It may be arising due to the issue of biasedness of omitted variables. Moreover, in the case of remittances, there may be an error in the calculation of recorded data. Freund and Spatafora (2008) found that the range of unrecorded remittances is approximately 20-200 percent of the official statistics. Balance of Payment figures calculated by the developing countries mostly ignores the informal means of remittances transfer such as friends and family members. Thus, to tackle the potential endogeneity we have re-estimated our model by system GMM. System GMM uses internal instruments to resolve the endogeneity issue. Columns 4 of Table 2 shows, the outcomes attained from the system GMM. Remittances still have a negative sign, indicating that higher remittances are linked with lower infant mortality. The coefficient of remittances shows that a 1 percent increase in remittances reduces infant mortality by 0.256 per thousand live births. Post estimation test of over-identification ($H_0 = instruments\ are\ valid$) reveals that instruments are valid as can be seen from a p-value.

Regarding control variables, we find that increased economic growth reduces infant mortality, implying that economic growth improves the development level of people in a particular country. In this regard, individuals will have better purchasing power to spend on quality health services. The number of physicians has a statistically significant negative effect on infant mortality, explaining that if there is a large supply of physicians reduces infant mortality because of less waiting time for treatment and medical attention. The investment made in health infrastructure and workforce enhances the population health and human capital. There exists a positive relationship between urban population growth and infant mortality except columns 2 and 3. This finding is consistent with first fold phenomena as explained by Rogers and Wofford (1989). Health expenditures hurt the infant mortality rate. As far as access to improved water facilities is concerned, its effect is negative on infant mortality. As infant mortality decreases with the availability of pure and clean drinking water. Overall it is observed that all variables have expected signs and significant coefficients.

4.3 Diagnostic Tests

Further, we present some pre-estimation tests. Table 3 indicates the pre-estimation tests including functional form, multicollinearity, heteroscedasticity and normality test. Firstly, the Link test is used to check the validity of functional form, whether the

equations of infant mortality are correctly specified or not. The result of the test indicates that the model is appropriately specified. Secondly, the result of the Variance Inflation Factor (VIF) test shows that there is no issue of multicollinearity. Thirdly, the Jarque-Berra test also indicates that data is normally distributed. However, the examination of the Breusch-Pagan test reveals the problem of heteroscedasticity. Therefore, the robust regression technique is used to tackle this issue.

Table 3
Pre-Estimation Tests for Infant Mortality Equation

Link test	VIF	Normality	Heteroscedasticity
0.244	1.71	0.437	0.0003

4.4 Sensitivity Analysis

Sensitivity analysis is presented in Table 4. to find the impact of remittances in the presence of other determinants of health, especially infant mortality. The infant mortality rate rises with poor facilitations for providing immunization. Moreover, the availability of vaccinations decreases infant mortality rate. The role of active immunization plans can be beneficial to fight against many diseases. An effective amount of immunization reduces infant mortality (Cingolani et al., 2015; Gupta et al., 2002; Mondal, N. I., Hossain, K., & Ali, K., 2009).

High availability of hospital per bed reduces infant mortality. Role of nurses is found positive indicating that by increases the number of nurses, infant mortality increases. This can be interpreted that in case of developing economies, nurses are not well trained and qualified which has ultimately negative impact of infant health. High population growth increases infant mortality as resources cannot be enough to facilitate everyone which results in deprivation and scarcity at individual and country level.

5. Conclusion

Globally, an increase in the foreign capital inflow especially in developing countries, in the form of remittances affects the level of consumption and investment which helps in getting better health facilities. Consequently, the amount of remittances is the main source of their survival and wellbeing, especially for low- and middle-income countries.

This study incorporated the literature on health contributing factors that empirically investigated the influence of remittances on infant mortality as a proxy of health.

Table 4
Sensitivity Analysis

Independent Variables	**Dependent Variable: Infant Mortality Generalized Method of Moments**			
Log of Remittances	-0.0496	-0.341***	-0.298**	-0.401***
	(0.111)	(0.106)	(0.144)	(0.113)
Log of GDP per capita	-5.997***	-10.61***	-8.001***	-8.959***
	(1.325)	(1.643)	(1.716)	(1.430)
Physicians	-0.612	-1.012	-4.226***	-1.205**
	(0.458)	(0.751)	(1.047)	(0.556)
Log of Urban Population	0.221	0.649*	0.817**	0.351
	(0.301)	(0.336)	(0.392)	(0.337)
Health Expenditures	-1.054***	-1.144**	-0.316	-0.715**
	(0.292)	(0.488)	(0.308)	(0.299)
Improved Water	-0.310***	-0.386***	-0.534***	-0.406***
	(0.0990)	(0.113)	(0.122)	(0.113)
Improved Sanitation	-0.340***			
	(0.0477)			
Hospital per bed		-0.527*		
		(0.313)		
Nurses			0.615*	
			(0.362)	
Population Growth				3.965***
				(0.665)
Constant	132.5***	149.2***	134.6***	134.1***
	(7.557)	(9.649)	(9.931)	(7.631)
Observations	356	356	356	356
R-Squared	0.735	0.719	0.662	0.712
Estat Endogenous	P= 0.0263	P= 0.4682	P= 0.0197	P= 0.2074
Estat overid	P= 0.9885	P= 0.7674	P=0.9145	P= 0.9537

Standard errors are in parentheses and ***, ** and * show p<0.01, p<0.05 and p<0.1 respectively.

To gauge the impact of remittances on child health a panel data set of 132 countries has been used for the period 1980-2015. Estimation techniques, that is, OLS, Fixed effects, random effects, and system GMM are used for empirical analysis. Empirical results obtained from the analysis confirmed a negative and statistically significant effect of remittances on infant mortality. Furthermore, we found that almost all control variables e.g. GDP per capita, access to improved water facilities, urbanization, and health expenditures have anticipated and statistically significant impact on child health, regardless of the econometric technique used. This means that economic growth, access to improved water facilities, number of physicians, and health facilities have a favorable effect on infant health.

The government of developing countries should focus on the ways that could encourage remittances as it is also a major source of foreign exchange. At the domestic level, infant mortality can be reduced by remittances as it creates opportunities to get better health care services. Finally, it could be summarized that foreign remittances may help reduce the infant mortality. This study has shown the overall impact of remittances on infant mortality. Many country-specific variables may also affect infant mortality, so future studies should extend the analysis by incorporating the contextual realities of the economies. Though future analysts can take other proxies of health. Similarly, future analyses can also find the impact of remittances on other development-gauges like education, etc.

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Appendix

Table A1

Summary of Variables used for the Analysis

VARIABLES	DEFINITION OF VARIABLES	SOURCE
	Dependent Variable	
Infant Mortality	The infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year." (per 1,000 live births)	WDI 2016
	Independent Variable	
Remittances	Personal remittances comprise personal transfers and compensation of employees. Personal transfers consist of all current transfers in cash or kind made or received by resident households to or from nonresident households. Personal transfers thus include all current transfers between resident and nonresident individuals." (measured in current US$)	WDI 2016
	Other Independent Variables used as control variables	
GDP per capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products." (measured in constant 2010 US$)	WDI 2016
Physicians	Physicians include generalist and specialist medical practitioners. (per 1,000 people)	WDI 2016
Improved Water	Access to an improved water source refers to the percentage of the population using an improved drinking water source. (% of the population with access)	WDI 2016
Urbanization	Urban population refers to people living in urban areas as defined by national statistical offices." (total urban population)	WDI 2016
Health Expenditure	Total health expenditure is the sum of public and private health expenditure. (% of GDP)	WDI 2016