

THE EFFECT OF REMITTANCES ON CHILD SCHOOLING IN KENYA

BY

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the Award of the Degree of Master of Arts in Economic Policy Management of
the University of Nairobi**

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DECLARATION

This research paper is my original work and has not been presented in any university for the award of a degree.

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This research paper is submitted for examination with my approval as the university supervisor:

Signature.....Date.....

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DEDICATION

This research paper is dedicated to my dearest wife — Hibo Ali Noor for her love, encouragement, prayers and standing with me throughout my studies, and to my lovely children Najma, Najib and Salma.

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TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
LIST OF TABLES	vii
LIST OF FIGURES	viii
ABSTRACT	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background	1
1.2 Overview of International Remittance flows in Kenya.....	2
1.3 Basic Education in Kenya	2
1.4 Problem Statement	5
1.5 Objectives of the Study	5
1.6 Justification of the study	5
1.7 Structure of the paper	6
CHAPTER TWO: LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Theoretical Literature	7
2.3 Empirical Literature	8
2.4 Overview of the Literature review	13
CHAPTER THREE: METHODS AND PROCEDURES	15
3.1 Theoretical Model	15
3.2 Econometric model specification	16
3.3 Estimation method.....	17
3.4 Data Source	17
3.5 Variable Identification.....	18

CHAPTER FOUR: EMPIRICAL FINDINGS	19
4.1 Introduction	19
4.2 Summary statistics.....	19
4.3 Correlation analysis.....	20
4.5 Estimation results	22
4.6 Discussion and Interpretation of results	23
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	25
5.1 Introduction	25
5.2 Summary of empirical findings.....	25
5.3 Conclusions	25
5.4 Recommendations	26
5.4 Areas for further research.....	26
REFERENCES.....	27

LIST OF TABLES

Table 1.1: Pupil Enrolment and Expenditure on FPE in the period 2009-2017 '000'	4
Table 3.1: Shows variable Definitions and Measurements	18
Table 4.1: Descriptive Statistics (6-13 years)	19
Table 4.2: Descriptive Statistics (14-17 years)	20
Table 4.3: Matrix of correlations (6-13 years)	21
Table 4.4: Matrix of correlations (14-17 years)	21
Table 4.5 Probit model regression and the marginal effects (6-13 years).....	22
Table 4.6 Probit model regression and the marginal effects (14-17 years).....	23

LIST OF FIGURES

Figure 1 Diaspora Remittance USD "000" 2

ABSTRACT

Developing Countries grapple with inadequate public resources to finance education. Constrained public resources necessitates household income like remittances to complement public resources in their quest to finance education of household members. The paper investigated the effects of remittances on child schooling in Kenya using nationally representative data — the 2015/2016 Kenya Integrated household budget survey (KIHBS). Using probit model technique for different age groups—6-13 and 14-17 corresponding to primary and secondary schooling years respectively. The results showed that remittances was insignificant in influencing both primary and secondary schooling. However, household income was of great positive significant impact on school attendance (primary and secondary) in Kenya. The study also concluded that household size, household income, and the residential area also positively and significantly determined secondary school attendance whereas household income and age of the child influenced primary school attendance in Kenya. The study, therefore, recommends that governments and aid-giving organizations give households some basic income to increase primary and secondary school attendance.

CHAPTER ONE: INTRODUCTION

1.1 Background

Households in Kenya receive remittances as a result of both internal and external migration. Internal migration is as a result of rural-urban movements motivated by regional economic inequalities whereas external migration involves cross border movements perpetuated by the search for education and economic opportunities (Farai, 2016). It was estimated by the United Nations that the global international migrants stood at 258 million in 2017 increasing from 173 million in the year 2000 (UN, 2017). International migrant workers estimated at 164 million persons contribute to the growth of the economies of their destination while their home countries benefit from their remittances and skills acquired (ILO, 2018). The International Organization for Migrants (IOM) estimated 28 million of the international migrants as youth migrants. Kenya estimates to have 3 million of her nationals to be in overseas for various reasons. The country also hosts over 1 million international migrants that include refugees and asylum seekers from Somalia, South Sudan, Congo and Ethiopia (IOM, 2018).

International remittance — money transferred by an individual living abroad back to his/ her country of origin — is an important contributor to Kenya's growth and development (CBK, 2017). Increased global migration, competition within financial institutions and advances in technology led to an increased flow of money mainly from the developed world to developing countries as a significant source of income (Acosta, 2011). International money flows to developing countries was reported to have amounted to USD 429.3 billion in the Year 2016. These figures were projected to amount at USD 443.6 billion and 459.1 billion for the years 2017 and 2018 respectively (World Bank, 2017).

Remittances can positively contribute to the acquisition of human capital in two ways. First, remittances encourage investment in children education by relaxing the credit constraint of a given household. (Khan & Khan, 2016). Second, the money received from remittances becomes an additional income for a household which in effect delays the need to send a child into the labour market, therefore, keeping the child in school (Acosta, 2011).

1.2 Overview of International Remittance flows in Kenya

According to the government's diaspora policy (GoK, 2014), it was estimated that there were 3 million Kenyans abroad and is continuously on the rise. The policy acknowledges the immense contribution of these Kenyans to the long term development agenda like the vision 2030 mainly through remittance flows. Figure 1 below shows international remittances to Kenya in USD '000' for the period 2007 to 2017. The annual figures were calculated based on the monthly remittances data provided by the Central Bank of Kenya. International remittances to Kenya increased from USD 573.6 million in 2007 to USD 1,946 million in 2017.

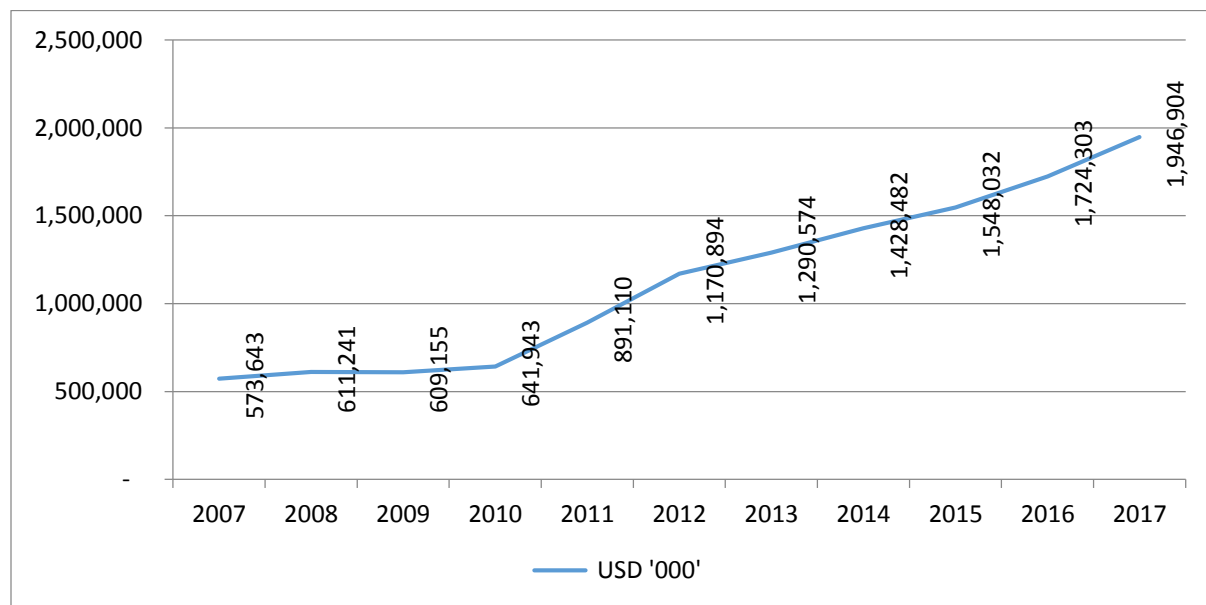


Figure 1 Diaspora Remittance USD "000"

Source: Central Bank of Kenya and Author's calculations

In the Year 2017, 52% of the total international remittances to Kenya were remitted from North America, 32% from Europe and 16% from the rest of the World (CBK, 2017).

1.3 Basic Education in Kenya

At independence, education in Kenya was seen as the only mechanism available to the country to deliver on its agenda to eliminate poverty among its citizenry. Indeed, at that point poverty was often defined as that situation where a child plays at the gate of the school for he or she cannot afford to enter the gates that would give him or her a key to a better life for him or her and his/her

entire family. Many initiatives of government immediately after independence were geared towards giving opportunities to the youth to access education which in some cases enabled Kenya to create expertise in various fields. Education and training are key in promoting socio-economic and political wellbeing of any country (Burchi, 2006). Investment in education promotes human capital development and is a major tool for sustainable development. In this regard, the Sustainable Development Goals (SDGs) in its 4th goal underscores the need for equitable and inclusive quality education for all by the year 2030. This is fully enshrined in the 2010 constitution (GoK,2010).

It is against this backdrop that the Government committed itself to the provision of quality education to learners. After independence, the government undertook to reform education through the establishment of various education taskforces whose reports had valuable recommendations which continue to shape the education system in Kenya. Key among this taskforces and reports include; the Kenya Education Commission, Ominde report (GoK,1964) that reformed the education systems that was inherited from the colonial administration and recommended education for all and the Mackay report (GoK,1981) that recommended the establishment of a second university, expanded post-secondary education institutions and establishment of 8:4:4 systems.

Under the bill of rights in the Constitution, basic education is guaranteed for all children where the government is obliged to provide affordably and accessibly. The Basic Education Act, 2013 was enacted during the 11th Parliament to operationalize the provision for free and compulsory education. This also makes the Country's education policies to be in tandem with international education Commitments that Kenya is a signatory including; the African Charter on the Human and Peoples Rights; the African Charter on the Rights and Welfare of the Child and the United Nations International Convention on Social and Economic Rights.

Through the implementation of Free Primary Education in the year 2003 and the subsidized secondary education in 2008, the country made significant steps towards access to education in line with the world Education Forum Declaration on Education for All (EFA). These reforms have been instrumental towards the attainment of Millennium Development Goals (MDGs) and now Sustainable Development Goals.

Kenya's education structure comprises of 8 years in primary education targeting children aged between 6- 13 years, 4 years of secondary education targeting children aged between 14 - 17 years and 4 years of higher education for children aged between 18- 21 years and above.

Article 53 of the Kenyan Constitution provides for free and compulsory basic education to every Kenyan child. The country's long term development strategy (Vision 2030) underscores the link between education and the labour market to promote production. Before this Constitutional and Planning Documents Provisions, the government adapted Free Primary Education (FPE) policy in the year 2003 and later Free Day Secondary Education (FDSE) in 2008.

Due to the foregoing policy interventions by the government, there have been significant improvements in the pupil enrolment in the three levels of Pre-primary, Primary and Secondary education. Table 1 illustrates the enrolment trends and the expenditure on the Free Primary Education (FPE) in the period from 2009-2017.

Table 1.1: Pupil Enrolment and Expenditure on FPE in the period 2009-2017 '000'

Level of Education	2009	2010	2011	2012	2013	2014	2015	2016	2017
Primary Enrolment	8,831	9,381	9,561	9,758	9,858	9,951	10,091	10,280	10,404
Expenditure Kshs.(FPE)	12,093	9,260	9,870	9,256	9,257	12,480	12,640	12,580	18,870

Source: National Treasury (Various Sector Reports) and KNBS (Various Economic Surveys)

The cost of basic education has been a challenge to households in Kenya. In theory, primary education in public primary schools is supposed to be free through the free primary education programme however parents pay costs including transportation, uniforms and learning tools like books, pens among others.

1.4 Problem Statement

Remittances reduce household budget constraints associated with liquidity problems thus providing more cash for consumption-related expenditures and investment opportunities by receiving households. Acosta (2011) established that remittances enable investment in children's human capital endowments reduces child labour which is a positive outcome for growth in a developing country

As shown in fig.1, remittances flows to Kenya have been on an upward and sustained trajectory over the years. Domestically, the advent of mobile money has completed the existing money transfer market that eased sending money back home by individual working away from their area of residence but within the Country. Despite the large increase in remittances flows to individual households, it is still unclear how households utilize remittances and the effect of remittances on household welfare (Adams, 2004). It is against this backdrop and lack of consensus on the subject matter by the available literature, this study addresses whether or not the increasing remittances to households has any effect on children schooling in Kenya.

1.5 Objectives of the Study

The main objective of this study was to determine the impact of remittances on child schooling in Kenya. The specific objectives are

1. To analyze the effect of remittances on child schooling in Kenya for children aged 6 – 13 and 14 – 17 years

1.6 Justification of the study

The findings can provide support to policies geared towards increasing remittances with a view of maximizing gains from these resources for human capital formation in Kenya. The results will also provide an extra information to migrants on the benefits their remittances play in support of children education in Kenya. Finally, the findings will add to the past literature on the effect of remittances on child schooling (primary and secondary schooling) in Kenya by investigating whether the impact differs between primary and secondary level of education.

1.7 Structure of the paper

The remaining of the paper is organized as follows — Chapter 2 reviews theoretical and empirical literature on the effects of remittances on human capital development. Chapter 3 shows the theoretical model, econometric model and estimation approaches used in the study. To the end, Chapter four presents empirical findings and discussion of results while chapter five presents the summary, conclusions, recommendations of the study, and areas where future researchers could focus on.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter reviews related theoretical and past empirical studies available. The theoretical literature section covers the theoretical foundations of remittances and child schooling whereas the empirical literature sections emphasizes on the approaches and major findings of previous studies on the subject.

2.2 Theoretical Literature

The theory of Human capital development was first applied in economics by G. Becker and J. Mincer (Fleischhauer, 2007). Human capital may be defined as any skills, knowledge, aptitudes, attitudes and all other acquired abilities either through in-service training or formal education that leads to the achievement enhanced production (Goode,1959; Blundell, et al, 1999).

Human capital can also be the same as any other physical means of production that are likely to have an impact or influence the real income of an individual in future (Becker, 1962; Becker, 1964; Mincer, 1970; Ishakwa & Ryan, 2002, Almendarez, 2011). Investment in human capital may therefore be equated to individual's investment on the education of his/her children, their wellbeing, dissemination of information and labour mobility (Weisbrod, 1966). Measured by the labour contribution to a country's output, the capacity to produce by human beings is larger than all other types of wealth taken together (Schultz, 1961).

The underlying assumptions of the human capital theory is that an individual maximizes utility and invests more where returns are more in future. A person is assumed to compare the cost of current investment with the price of the future likely benefits to decide on his /her children schooling. A person enrolls a child in school if the current value of expected benefits outweighs costs.

2.3 Empirical Literature

The decision by a household to enroll a child or not in school is usually informed by number factors. These factors may be grouped into three major categories, namely, individual characteristics (age and sex of the child), household Characteristics (size and income) and community characteristics (place of residence).

The effect of remittances on a resolution by a household to enroll a child in school or not may either be negative or positive. On the positive side, remittances encourage investment in children education by relaxing the credit constraint of a given household. Remittances further, affects a child's school attainment positively when the migration prospect for well-educated and highly skilled labour points to a higher return on education for individuals moving abroad (Khan & Khan, 2016).

On the other hand, remittances affect children education negatively by increasing children's social and economic responsibilities due to the absences of probably an older sibling making them spend most of their time in household activities and fill the labour gap. Remittances induced Migration also creates income gap forcing children to engage in activities aimed at generating more income in the labour market. Parental absence will also have a negative effect on schooling due to lack of the needed guidance and missed supervision by parents.

Different studies used different approaches to study the effect of remittances on education and have used different approaches. Some studies used panel data while others used the IV approach in addressing endogeneity problems. It is observed that results from these studies have been mixed where some studies established that remittances positively affect schooling while others found that it affects schooling negatively.

By using the Ghana Living Standards Survey (GLSS) , Kwabena and Asiedu (2015) analyze the effect of money sent by household members from abroad on education in Ghana. The study used the pseudo- panel data from waves 3-5 of the GLSS, Pseudo panel estimator which was based on Generalized Methods of Moments (GMM) and bivariate probit estimator. The study established that remittances affect investment in education positively. Further, the study established that households headed by women invested more in education than male-headed households receiving

remittances. The effect was also higher on secondary on enrolment in secondary schools than on primary school since remittances relax much more binding constraints in secondary school due to its higher cost than it does for primary school.

Komla (2018), investigated how remittances influence education and health outcomes. The study used 1975 – 2014 data covering 46 countries in Sub-Saharan Africa. Using System GMM, the study found that per capita real remittances increase enrollment rates in both secondary and tertiary education while it reduces infant mortality, adult mortality and increases life expectancy to 65 years. However, real remittance per capita had an insignificant positive impact on primary school enrolments.

Salas, (2014), used panel data together with instrumental variable with random effects and pooled probit estimator to investigate on whether international remittances affect the decision of taking a child to either Public or Private School in Peru. The study used 2007 -2010 data from the National Survey of Households conducted by Peru's National Institute of Statistics and Computing and made publically available. When controlled for absenteeism of parents, the effect was found to be positive on the probability of taking children to private schools. Similarly, using IV probit approach, Koska, et al, (2013) analyzed data from Egypt's Labor Market Survey (ELMS) of 2006 involving 8349 households to investigate how migration and remittances influence the human capital formation of children in Egypt. The result established that the probability of enrolling a child in school increased with an increase in receipt of remittances.

Jamal and Miftah, (2015) studied data from a survey in 2009 involving 598 households and more than 2700 children to find out whether international remittances play a role in educational attainment levels by children in rural Morocco. The study applied the IV approach using the historical migration rates and economic conditions of likely destinations of the migrants as instrumental variables for endogeneity problems. The results indicate that remittances increase the chances of completing high school. However, result further established that boys benefit more by increasing their chances of attending high school as compared to girls.

Hu (2012) used probit model with an Instrumental Variable approach to finding out whether high school attendance among children in rural china is affected by income from remittances and migration to urban areas by a household member. The study analyzed 2006 data from the Chinese General Social Survey (CGSS). It used a historical migration network and village norm to remit as an instrumental variable for migration and remittances respectively. The results indicated that migration of adults from a given household has a negative effect on post-primary school attendance while on the other hand remittances partially compensates for the negative effect due to migration by relaxing income constraints on the households and therefore encourages children to attend high school in rural China.

Using a nationally household survey conducted in 2000 by *Instituto Nacional de Estadisticas* of Guatemala, Davis and Brazil, (2016) investigated the impact of fathers' absence due to migration and receipt of remittances on school enrolment and grade progression by children in Guatemala. The paper used migration networks for father's absence and average pay rate for unskilled workers in destinations in the United States for remittances as an instrumental variable. The result suggests that father's migration abroad and receipt of international transfers decrease the probability of enrolling in school. On grade progression, father's international migration is negatively associated with progression for children already enrolled whereas remittances increase the probability of grade progression, thus offsetting the negative impact of father's absence.

Khan and Khan, (2016) investigated the extent at which school enrolment and education attainment level in Pakistan is affected by remittances. It focused on children aged between 4-5 years and analyzed data from the Pakistan Social and Living Standards Measurement Survey for 2010/11. The study interacted the migrant network and the number of adults at the household level as an instrument for remittances. Using probit model, the results showed that children from a household that received remittances are more likely to enroll in school.

Arif and Chaundry, (2015) conducted a study in Pakistan to find out the correlation between schooling outcomes and external migration analyzed data from the Government of Punjab and unpublished data from the office of overseas Employment and Emigration. Historical rates of migration together with the number of grownup men in a household and household assets were applied as instruments for migration and income variable respectively. Probit estimator, external

migration was found to have a significant positive impact on enrolment of younger children while the accumulated level of schooling increased significantly for older children if a household has a member abroad.

Hines and Simpson, (2018) did a study in Kenya to examine how international remittances affect household expenditure on education. The study analyzed a World Bank data on household migration survey carried out in 2009. In another study, using the 2010 data from Nepal Living Standards survey III (NLSS III), Bansak et al. (2015) studied the relationship between human capital investment and receipt of remittances in Nepal. The study used OLS techniques taking past social unrest and experience in migration as Instrumental Variables. The results indicate that for every 1000-rupee increase from remittances there was a marginal effect increase of 33-rupee in education expenditure. Further, the result revealed that the effect of internal remittance was greater than that of external remittances on education.

It is also observed that some studies found a mixed effect of remittances on child schooling (Bucheli. et al, 2018). They used a bivariate probit model using data from the 2010 census of Ecuadorian Population and Housing conducted — by the National Institute of Statistics and Census (INEC) to study varying impact of remittances on child education in Ecuador. The study used historical migration networks and the age of the migrant together with the economic condition of the destination countries as instruments for migration and remittance respectively. The result established that there is a positive and negative impact on the likelihood of a child schooling in Ecuador pointing to an off-setting effect of remittance that relaxes budget constraints faced by a household and absenteeism of a parent due to migration.

However, other literature also found a negative or insignificant relationship between the receipt of remittances by a household and children schooling. Nepal (2015) while analyzing data from Nepal Living Standards Survey which covered all districts of Nepal across 5,988 households and 28,670 persons examined how the huge external inflows in the form of remittances affect household expenses, child labour and schooling. The study used currency conversion rates between Nepali currency and currencies of destination countries as an instrumental variable.

The result found no effect of international transfers on labor and child schooling in Nepal. It also suggested that remittances increased expenditures on education but no improvement in educational outcomes despite the increase in children education expenditures. The author seems to be reconciling this rather contradicting finding of increased expenditure on education not improving outcomes by attributing it to rigidity in schooling system in Nepal where interschool transfers are not allowed without the consent of the two schools. Moving from public to private school is difficult if a child is already enrolled in public school since the language of instruction is Nepali while private schools instruct in English and finally, chances of children who drop out for various reasons including financial constraints to go back to school is very slim even after receiving additional money from remittance since they have to wait for another school year allowing children explore the labour market.

Nguyen and Purnamasari (2011) investigated the role of international migration, remittances and the gender of the migrant in children outcomes and labor supply habits of Indonesian Households with members abroad. The study analyzed data from the Indonesia Family Life Survey (IFLS) of 2000 and 2007. It used historical migration networks as the instrumental variable for migration. The results suggest that the estimated impact of migration and remittances on school enrolment as not statistically significant.

Acosta (2011) investigated the role of migrant transfers on children in EL Salvador, using 1998 cross-sectional household data for El Salvador. The study used identification techniques that included propensity score matching and Instrumental Variable. The study used municipal-migrant networks and used the number of those migrants that returned more than 2 years earlier as instrumental variables. The overall impact of remittances on schooling was found to be statistically insignificant, a strong reduction in child labour and an increase in family work by children in a household that received remittances.

Simiyu (2013) analyzed sample data from 295 households from Nyanza and Rift Valley regions in Kenya to find out how remittances are allocated to household expenditures to health, education, food and other expenditures in the two provinces. Using fixed effect model, the result suggests that remittances are largely expended on immediate consumption needs like payment of household

utilities and transportation costs. The result further shows a negative effect on expenditures on education-related activities as a share of the gross household expenditure.

2.4 Overview of the Literature review

Theory predicts that the effect of remittances on a household's decision to educate a child or not may either be negative, positive or no impact at all. On the positive side effect, remittances encourage investment in children education by relaxing the credit constraint of a given household. Remittances further, affects children's school attainment positively when there is a positive migration prospect for well-educated and skilled labor pointing to a higher return on education for individuals moving abroad.

On the other hand, remittances affect children education negatively by increasing children's social and economic responsibilities due to the absences of probably an older sibling making them use most of their time in household activities and fill the labour vacuum. The absence of an older sibling may also create a revenue hole forcing children to engage in revenue making activities in the labour market. Parental absence will also have destructive effects on children education due to missed direction and command that comes from parents.

Most of the studies apply binary choice models. Some findings from the empirical literature reveal that indeed it is more likely for a child from remittances receiving household enroll in primary school education. Others have shown that the chances of a child being enrolled in school reduce with remittances receipt while some studies suggest an insignificant relationship between receipt of remittances and school enrolment. It can therefore be concluded that the debate is not yet over and that more research needs to be done in different economies across the world.

Previous studies on remittances in Kenya only examined the impact of remittances on household expenditure. These studies include; Simiyu (2013) and Hines and Simpson, (2018). In his study Simiyu (2013) investigated the effect of remittances on household expenditure with a limited scope of the Former Rift Valley and Nyanza regions whereas Hines and Simpson (2018) studied the correlation between revenue from remittances and household education expenditures.

This study departs from the focus on expenditure and aims to find out the causal effect of remittances on children schooling in Kenya. The study provides additional scientific evidence on the role of remittances on school attendance/ enrolment for Kenyan children aged 6 -13 years for primary and 14 – 17 years for secondary school.

CHAPTER THREE: METHODS AND PROCEDURES

This chapter presents methods and procedures that was used in the study. The methods and procedures discussed here was informed by the available data and literature reviewed in the previous chapter.

3.1 Theoretical Model

Following Kwabena & Asiedu (2015), a household intending to invest in education maximizes the following utility function;

$$\text{Max } U = (S, M), U_i > 0 \dots\dots\dots 1$$

U= Household utility

S= Education Investment

M= all other goods

The household faces the following budget constraint

$$Y \geq P_s S + P_m M \dots\dots\dots 2$$

Y= Household Income

P= Price of goods

Further, it's also known the household income is either from remittances or other non-remittance income such that;

$$Y = \text{Remit} + \text{Non-Remit} \dots\dots\dots 3$$

Where Remit is income from remittances and Non-remit is income from other sources of income.

Setting up the optimization problem and solving for S, education investment is a function of Y, M and p_i , that is;

$$S = S(\text{Remit}, \text{Non-remit}, M, p_i) \dots\dots\dots 4$$

An increase in remittance income increases Y and therefore relaxes the budget constraint facing a household and all thing equal increases investment in education. therefore;

$$S_{remit} > 0 \dots\dots\dots 5$$

3.2 Econometric model specification

The equation of interest takes the form $S = f(R, X, U)$, where; S is the Schooling variable determined by R , denoting remittance and X , a vector of exogenous variables affecting child schooling, U is the error term.

The study developed an empirical model to test the theoretical prediction that remittances affect schooling by relaxing the budget constraint facing a given household. The study employs a binary probit regression model by assuming that the distribution of residuals follows a normal distribution with mean zero and variance one. That is either a child attends school or not. As suggested by most of the literature reviewed there exists a linear relationship between the unobservable variable s^* , remittances and other control variables (X) and therefore we shall have the following equation:

$$S^* = \alpha R + X\beta + \varepsilon \dots\dots\dots 6$$

Where S^* = unobserved/ latent variable

X = vector of independent variables

R = Remittances

α = parameter of the remittances

β = parameters control variables

ε = is the random error term

There is a link between the latent variables* and the observed binary variable s as expressed below;

$$s = \begin{cases} 1 & \text{if } s^* > 0 \\ 0 & \text{if } s^* \leq 0 \end{cases} \dots\dots\dots 7$$

Where s is equal to 1 if an individual attends school, and 0 if not. The study shall use a general multivariate analysis to explore the effect of remittances on schooling as presented below;

$$S = \alpha R + X\beta + \varepsilon_i \dots \dots \dots (8)$$

Where S , R and X are as previously defined and ε_i error term

3.3 Estimation method

The study used a probit model technique to analyse the effect of remittances on schooling in Kenya. It further estimated the Marginal Effects (ME) to interpret the results. The ME indicates the change in the probability of a child in the migrant household attending school for conditional on the household receiving remittances having controlled for household and community characteristics.

3.4 Data Source

The study used KIHBS 2015/16 conducted by the Kenya National Bureau of Statistics (KNBS). The Survey provides information on 23,880 households from 2388 clusters. It provided information on socioeconomic indicators at a household level including household conditions, education, income, credit and transfers among others. The sample was stratified by separating each county into Urban and rural ending up with 92 sampling strata since Nairobi and Mombasa Counties was classified as Urban only.

3.5 Variable Identification

Table 3.1: Shows variable Definitions and Measurements

Variables	Definition and measurement
(Dependent) Schooling	1 = if a child attends school and 0 if not
Remittances	Coded as 1 if the household receives remittance and 0 otherwise
Age	Age in years between 6-13 years(Primary schooling)
	Age in years between 14-17 years(Secondary schooling)
Sex	1 if a child is Male and 0 if female
Household Size	Total number of members in a household
Place of residence	1 if rural and 0 if urban
Log of income	Monthly total household consumption expenditure

Source: Author's Compilation using KIHBS 2015/16

CHAPTER FOUR: EMPIRICAL FINDINGS

4.1 Introduction

This chapter presents the empirical findings and a discussion of the findings on the effect of remittances on school attendance in Kenya. The chapter presents the data analysis and interpretation of results. It discusses the summary statistics, correlation analysis and the probit estimation results.

4.2 Summary statistics

Table 4.1 gives a summary of the basic descriptive statistics of the data with regards to 6-13 age group. It shows the variables, number of observations, the mean values, standard deviation and minimum & maximum values.

Table 4.1: Descriptive Statistics (6-13 years)

Variable	Observations	Mean	Standard Deviation	Min	Max
Schooling	20388	0.991	0.096	0	1
Remittance	22134	0.376	0.485	0	1
Age of the child	22157	9.434	2.288	6	13
Sex of the child	22157	0.501	0.5	0	1
Household size	22157	6.486	2.355	1	28
Place of residence	22157	0.702	0.457	0	1
Log of household income	22157	8.213	0.617	5.046	13.223

Source: Author's computation from STATA

From Table 4.1, the number of observations for each variable employed in this study is recorded at 22157 except only for school attendance and remittance at 20388 and 22134 respectively. The highest mean is the age of the child variable which is 9.434 while remittance recorded the lowest mean value of 0.376.

Standard deviation measures the extent of variability of observations of a given variable from the mean value of that variable. Household size variable exhibited the highest level of dispersion at 2.355 whereas schooling exhibited the lowest spread or variability of 0.096. The minimum value was recorded at 0 for all the variables except household size (1), age of the child (6), and log of

household income (2.24). Similarly, the maximum value was recorded at 1 for all the variables with the exception of the age of the child at 13, household size at 28, and the log of income at 13.223.

Table 4.2: Descriptive Statistics (14-17 years)

Variable	Observations	Mean	Standard Deviations	Min	Max
Schooling	8773	0.903	0.296	0	1
Remittance	9233	0.408	0.491	0	1
Age of the child	9239	15.44	1.091	14	17
Sex of the child	9239	0.521	0.5	0	1
Household size	9239	6.577	2.518	1	28
Place of residence	9239	0.686	0.464	0	1
Log of household income	9239	8.222	0.61	5.082	13.035

Source: Author's computation from STATA

From Table 4.2, the number of observations for each variable employed in this study is recorded at 9239 except only for school attendance that has 8773 observations and remittance that has 9233 observations. The highest mean is the age of the child at 15.44 while remittance variable recorded the lowest mean value of 0.408.

Household size variable exhibited the highest level of dispersion at 2.518 whereas the place of residence exhibited the lowest spread or variability of 0.464. The minimum value was recorded at 0 for all the variables except household size 1, age of the child 14, and log of income 5.082. Similarly, the maximum value was recorded at 1 for all the variables with only the exception of the age of the child at 17, household size at 28, and the log of income at 13.035.

4.3 Correlation analysis

The correlation analysis was conducted to determine the degree of association among the explanatory variables. Table 4.3 and Table 4.4 presents the pairwise correlation matrix for the explanatory variables used in this study for the respective age groups.

Table 4.3: Matrix of correlations (6-13 years)

Variables	Schooling	Remittance	Age of the child	Sex of the child	Household size	Place of residence	Log of household income
Schooling	1.000						
Remittance	-0.011	1.000					
Age of the child	-0.058	0.018	1.000				
Sex of the child	-0.010	-0.002	0.005	1.000			
Household size	-0.015	-0.017	0.051	-0.005	1.000		
Place of residence	-0.011	0.031	-0.011	-0.006	0.097	1.000	
Log of household income	0.048	-0.049	-0.019	-0.011	-0.294	-0.294	1.000

Source: STATA Computation**Table 4.4: Matrix of correlations (14-17 years)**

Variables	Schooling	Remittance	Age of the child	Sex of the child	Household size	Place of residence	Log of household income
Schooling	1.000						
Remittance	0.010	1.000					
Age of the child	-0.177	0.013	1.000				
Sex of the child	0.020	0.005	-0.001	1.000			
Household size	0.052	-0.060	-0.016	0.009	1.000		
Place of residence	0.024	0.012	-0.023	0.004	0.061	1.000	
Log of household income	0.014	-0.014	0.015	-0.041	-0.263	-0.269	1.000

Source: STATA Computation

From Table 4.3 and Table 4.4, it is evident that there exists a weak degree of association among the explanatory variables hence no multi-collinearity problem.

4.5 Estimation results

The two models estimated are presented in tables 4.5 and 4.6 below. In both estimations, the first column shows the probit model results while the second column is the marginal effects after regress.

Table 4.5 Probit model regression and the marginal effects (6-13 years)

	(1) Probit model	(2) Marginal effects
Remittance	-0.074 (0.057)	-0.002 (0.001)
Age of the child	-0.104*** (0.013)	-0.002*** (0.000)
Sex of the child	-0.080 (0.056)	-0.002 (0.001)
Household size	-0.001 (0.012)	-0.000 (0.000)
Place of residence	0.008 (0.065)	0.000 (0.002)
Log of household income	0.314*** (0.051)	0.007*** (0.001)
_cons	0.924** (0.470)	
<i>N</i>	20367	20367

Standard errors in parentheses

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

Table 4.6 Probit model regression and the marginal effects (14-17 years)

	(1) Probit model	(2) Marginal effects
Remittance	0.052 (0.039)	0.008 (0.006)
Age of the child	-0.293*** (0.018)	-0.048*** (0.003)
Sex of the child	0.061 (0.038)	0.010 (0.006)
Household size	0.041*** (0.008)	0.007*** (0.001)
Place of residence	0.100** (0.042)	0.016** (0.007)
Log of household income	0.128*** (0.035)	0.021*** (0.006)
_cons	4.448*** (0.417)	
<i>N</i>	8768	8768

Standard errors in parentheses

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

4.6 Discussion and Interpretation of results

From the estimation results in table 4.5 and table 4.6(marginal effects), remittances was found to be statistically insignificant in explaining it is a role in children schooling for the age groups considered in this study – 6-13 and 14-17 but the sign was negative in the 6-13 group whereas it was found to be positive in the 14-17 age group. This means that remittances played no role in influencing primary (6-13 years) and secondary schooling (14-17 years). The result was found to be consistent with the studies by Nguyen and Purnamasari (2011), Nepal (2015) and Acosta (2011).

The age of the child variable was found to have a negative and significant relationship with school attendance in both primary and secondary education levels. This means that for each additional year, an individual’s likelihood to attend primary school and secondary school decreases by 0.2%

and 4.8% respectively. This implies that older children tend to have attained a certain level of education and are not willing to add more years of schooling.

Sex of the child was found to be insignificant in influence both primary school attendance and secondary attendance. However, the sign was negative for primary school attendance and negative in secondary school attendance.

Household size was found to have a negative relationship but statistically insignificant for the primary education schooling. In contrast, household size was found to be positive and significant. Surprisingly, an additional member of a household increases the probability of secondary school attendance by 0.7% *ceteris paribus*. This was contrary to the popular thought that the larger the size of a household, the higher the expenditures and hence low school attendance. Household size was found to be statistically significant at 1%.

Place of residence was found to be statistically insignificant in primary schooling model. However, the probability of secondary school attendance was found to increase by 1.6% for a household residing in a rural area as compared to the urban area *ceteris paribus*. Remittances increased the likelihood of school attendance for those households residing in rural areas. This is due to the offsetting of the budget constraints on infrastructural and transportation costs hence people are more encouraged and motivated to attend school. The study is consistent with that by Hu (2012) who found a positive relationship between rural dwelling households and child schooling in rural China.

Holding all other factors constant, a one 1% increase in household income increased the probability of secondary school attendance by 2.1%. In addition, a one 1% increase in household income increased the likelihood of primary school attendance by 0.7%. This means that wealthier households are associated with more individuals attending secondary and primary school relative to low-income households.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized and made conclusions based on empirical findings. The policy implications on the findings and areas for further research was also provided.

5.2 Summary of empirical findings

The main objective of this study was to determine the effect of remittances on child schooling in Kenya. The study also sought to evaluate the impact of other related control variables such as Sex of the child, Age of the child, household size, residential area, and household income. A probit regression model was estimated separately for two age groups (6-13 and 14-17) and the marginal effects after regression was run and interpreted.

The estimation results revealed that the variables household income, age of the child, household size, and place of residence influenced secondary school attendance in Kenya whereas household income and age of the child influenced primary school attendance in Kenya. The variable Age of the child was found to have a negative impact on both primary and school attendances by 0.2% and 4.8% respectively while household income and household size was found to be positively related to secondary school attendance. Besides, the place of residence had a positive and statistically significant influence on secondary schooling. Household income was found to have the highest positive impact on schooling at 2.1%. Household income thus increased the likelihood of school attendance (primary and secondary school) by the largest magnitude. Place of residence impacted the least on school attendance at 0.9%.

5.3 Conclusions

The study concluded that household income was of great positive significant impact on school attendance (primary and secondary) in Kenya. This was because it helped relax the household budget constraints such as household expenditures on health, food, water, electricity etc. As a result, a household was able to divert this source of income on schooling. Remittances was found to have an insignificant effect on schooling in both age groups — primary and secondary education.

The study also concluded that household income, household size, and the residential area also positively and significantly determined secondary school attendance whereas household income and age of the child influenced primary school attendance in Kenya.

5.4 Recommendations

The study proposes policy interventions designed to increase primary and secondary school attendance. For instance, governments and non-state actors such as civil society organizations need to enable households to receive a basic income for them to take their children to primary and secondary school as this significantly influenced both primary and secondary schooling in Kenya.

5.4 Areas for further research

This study does not explicitly explain the impact of remittances on child schooling across all levels of education. It focuses more on only the primary and secondary levels of education with the respective age groups of 6 – 13 and 14 – 17 years. Future studies in this area are recommended especially in examining the impact of remittances across all levels of educations like primary, secondary, tertiary and university education.

Future studies should also focus on investigating the impact of domestic and international remittances on all levels of education separately. This because different type of remittances may affect children education differently.

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