REMMITANCES AND POVERTY IN KENYA

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Abstract: Domestic and international migration has become a strategy for individuals and families in developing countries to cope with poverty and economic crisis. Migrants attempt not only to improve their own livelihoods but also they send a considerable share of their earnings to their families in the region of origin. The main objective of this paper was to measure the impact of remittances on poverty. The other objective was to measure the determinants of remittances. The Kenya Integrated Household Budget Survey data (2005/06) were used for analysis.

Econometric models were employed to analyze the data. The results show that remittances have had positive impacts on household consumption. Remittances have also been used to deal with household economic shocks. In particular rural households mentioned price related shocks that affect agricultural production as being significant and that remittances have been used to cushion the impacts from these shocks. Also, the study shows that social networks are very significant determinants of remittances and therefore welfare. Policy should therefore aim at strengthening social networks as a source of social capital. This will help form resilient communities in the face of economic challenges. Other policy implications relate to social protection and the need for deliberate social protection policy that will enable households to deal with economic shocks.

Keywords: Remittances, Poverty, social protection policy

1. INTRODUCTION

Domestic and international migration has become a strategy for individuals and families in developing countries to cope with poverty and economic crisis. Migrants attempt not only to improve their own livelihoods but also they send a considerable share of their earnings to their families in the region of origin.

The importance of remittances in Kenya is evidenced by the numerous money transfer institutions in both formal and informal sectors and the rapid increases in both international and local remittances. The domestic money transfer system has received a boost with electronic money transfer services provided by mobile telephone service providers. Besides the formal money transfers, there are also the informal channels through person to person conveyance, informal arrangements with public transporters especially bus companies among other channels.

Remittances have been argued to have great potential to generate a positive impact on recipients' welfare. This is mainly because they go directly to family members without any intermediaries and they are available to the recipients to use them according to their own priorities. For example, households may decide to use them to finance basic consumption, education, health, improvement of dwellings, purchase of real estate and investment in business. They may be especially important in supporting micro-enterprises. Thus remittances can potentially play a significant role in relief of destitution and stimulation of economic activities at local levels. In addition they help households maintain their consumption levels through economic shocks and adversity. For developing countries, international remittances are seen to be a more constant source of income with a doubling of annual international remittances between 1988 and 1999 [5].

Up to 80 % of remittances are used for basic household consumption and 5-10% are used to invest in human capital such as education, health, and better nutrition [10]. Other important investments from remittances include land, housing and Livestock. These are often seen as (future) assets of the emigrants themselves. Smaller portions of remittances are spent on socio-cultural events,

loan repayments, savings and generally only little is invested in employment and income generating activities other than agriculture and livestock [10].

Other examples in rural areas show that remittances spent on productive assets such as land, cattle and equipment allow rural households to continue the agricultural activities and to strengthen their livelihoods. A study on micro-enterprises in Mexico revealed that remittances were responsible for 27% of the capital invested in micro enterprises [7]. and a survey in Albania found that 17% of the capital to establish enterprises came from remittances [10]. However, the study also showed that the rate of investment into productive activities depends on political stability and sound economic policy of the country.

On the other hand, some studies have cast doubts on the ability of remittances to create jobs and spur economic growth. This is because remittance receipts especially the international remittances are widely dispersed thus they may not cause any real changes on macroeconomic variables. There is therefore no consensus to what degree remittances contribute to economic growth and employment creation. Therefore, despite their importance in development, international remittances cannot replace official aid or reduce the responsibilities of governments in receiving countries to provide for their citizens.

There are also risks and possible negative effects of remittances. Higher income of households through remittances can remove pressure from governments to implement economic and social reforms. Further questionable effects that have been observed are inequitable growth at the community level. Very poor households can often not afford to send a family member to work abroad. Moreover, a study from Pakistan shows that the richest households usually receive more remittances, which increases the income gap [9]. Extensive land purchases by remittance recipients can lead to higher prices for land, which affects poor households in the agriculture sector. Other authors argue that there is a risk for recipients of remittances to develop a culture of dependence, which does not favor self-initiative [1].

International Remittances in Kenya

In Kenya, remittances as a share of GDP, as at the end of 2006 were 5%. Table 2 below shows the trend of remittances since the year 2000. However, there is evidence that such flows are underreported. Remittances through informal channels could add at least 50 percent to the globally recorded flows [11].

Table 1: Remittances

Year	2000	2001	2002	2003	2004	2005	2006	2007
Amount in US $ (million)	538	550	433	538	620	805	1,128	1,300

Source: Development Prospects Group - World Bank

Official government statistics show that in 2006 the inward flow of remittances was USD 7.8 bn while the outward flow was USD 6.6 bn. These are formal transfers and they exclude informal transfers. Central Bank of Kenya currently only grants approval for money remittances services operations to commercial banks, forex bureaus and to Kenya Post Office Saving Bank but not directly to money remittance companies. This is mainly because of lack of adequate legal framework at the moment to license and supervise money remittance companies**.**

Formal transfers therefore include transfers through formal financial system e.g. through banks, forex bureau, Kenya Post Office Savings Bank and through mobile phone banking system. The informal remittance systems include: “Hawala” (where a sender will pay the money to an individual, who then communicates the message to his agent in the location where the receiver is and instructs his agent to pay the receiver. This system of money transfer works mainly by trust). Other informal systems include: Courier firms and bus companies. The informal remittance systems are not regulated at all. The other alternative remittance system involves the use of underground banking or parallel economy in which money circulates.

1.1 Problem statement

Remittances both local and international have continued to increase over time. This trend is likely to continue as more and more Kenyans are still seeking for work and study opportunities in different locations both national and international. While there is good information on international remittances, very little is known about domestic remittances which may mainly take place through informal channels. This study attempts to contribute towards filling this gap. By use of micro data sets of the Household Budget Survey, the study shall analyze first hand information relating to household receivership of remittances both from local and international sources. The study shall also go a step further to measure the impact of remittances on poverty. Controlling for socioeconomic status of households, this study will

therefore seek to analyze the impact of remittances on poverty.

1.2 Objectives of the study

The principal aim of this study is to obtain household information concerning remittances both from formal and informal sources and also to examine the impact of remittances on household welfare. Specifically, the study shall:

1) Investigate whether remittance impact significantly on household welfare in Kenya

2) Estimate the determinants of household access remittances

1.3Study hypothesis

The principal hypothesis to be tested in this study is that remittances (both local and international) significantly reduce poverty.

II. THEORY OF REMITTANCES

Migrants whether local or international send remittances back to their families for different reasons. Some may remit for selfish reasons (in favor of themselves) while others will remit in favor of their family and friends they left behind. This leads to the two main approaches for analyzing remittances. The first is the "portfolio" approach while the second is the altruism approach [4]. The portfolio approach sees remittances as a self interest controlled capital transfer to diversify the migrant's savings. Portfolio motives come out of investment opportunities and saving differentiation while the altruistic approach sees remittances as a transaction that benefits the receivers who were "left behind' by the migrant without any demand on the receiver from the remitter. Another theory of remittances has to do with informal loan repayment. Households support their own members especially the young and those in school. When the young grow up and when those in school complete their schooling they are expected to support others in order to repay the "debt". The "loans" are informal and society values and perceptions about those who do not honor their debts act to reinforce debtors honor their debts.

Remittances in this case are perceived as an informal and implicit repayment to the family at large for costs taken before departure whether to a domestic or international destination [10]. The chain of family loan arrangement works in three steps: The first step is the preparation and costs for migration. These costs include the costs of bringing up and educating the migrant; the second step is when the migrant has migrated, then starts to repay the debt and saves for the future through remittances. The migrant's savings are used to prepare a new generation for migration; the third step concerns the new generation repaying their debt with remittances to the former migrant worker, currently retired at original residence. The loan taken before migration is informal or implicit so the interest rate and amount is not precisely agreed upon which makes the enforcement of repayment hard. Enforcement is done through social control, cultural values of family solidarity and loyalty, and threats of a loss of the family support at a later stage in life. If the sizes of remittances stay stable for a longer period of time, it indicates that there is a good enforcement of repayment [6]. Altruistic motives have therefore been explained as either repayment of an old loan or some kind of aid to the receiver.

Remittances are likely to affect the economy regardless of whether they are sent with the intentions of a portfolio investment or altruistic helpfulness. Capital for portfolio investment may increase the economic activity since investments are done with the intentions to generate profits and productivity, in the same manner as foreign direct investment does. Capitals sent in the mind of altruistic helpfulness do not bring any demand for profits or productivity. Households are free to use the remittances as they deem fit. If altruism dominates remittances, it may be the case that the inflow will have smaller effect on the economic activity. The effect could even become negative depending on whether the capital makes the receiver less productive than the productivity the capital generates from being used.

Another theory of remittances has to do with compensation capital for economic growth. The idea that remittances work as compensation capital for poor economic performance was supported [2] who found negative correlation between the size of remittances and the home country's GDP for the period 1970-1998. According to the authors, the negative relationship between remittances and economic growth is due to two main factors: moral hazard coupled with information asymmetry. The model assumes that recipients received remittances as an altruistic gesture. The recipient maximizes utility by selecting an optimal mix of his labor-leisure choice. Since remittances will accrue regardless of the recipients' labor efforts, they may choose more leisure and less work in order to maximize their utility. This decision could be a source of dependency

syndrome associated with social transfer programs. Recipients may not desire to work hard since they have remittances as a source of income to depend on. The model also assumes the presence of asymmetric information; the remitter can not observe the receivers' work effort. As such the remitter continues to supply more and more income regardless of whether the recipients are put more efforts to work or not. As such there may be decreased productivity, and as such remittances may not necessarily spur development and economic growth. This argument could be generalized to other social transfer programs which may induce perverse incentives by the recipients. The model however does not condemn remittances and social transfer programs rather it cautions that these type of programs are good for cushioning vulnerable households; who may or may not become more productive.

III. CONCEPTUAL FRAMEWORK

3.1. Impact Chain and Measurement

Determining whether the benefits of remittances are sustainable and large enough to make a dent in the poverty of society at large is important for guiding policy. However efforts to assess impact can be biased by non random recipients. This is mainly so because it could be that only a special category of households is able to send their kin abroad or to work in other parts of the country. Therefore a simple comparison of the incidence of poverty in households receiving and households not receiving remittances may lead to the mistaken conclusion that remittances have reduced or increased poverty.

Household selection is therefore a big issue to note while analyzing the impact of remittances on household welfare. Given selection bias by households receiving remittances, simply comparing such outcomes as per capita consumption or the incidence of poverty between recipients of remittances and non recipients may lead to the mistaken conclusion that remittances have a high impact on poverty reduction, when indeed the effects are due to the unobserved abilities of participants. This unobserved abilities may include, better socioeconomic abilities, more endowments of resources etc. Thus the estimated effects may be under, or overestimated depending on the type of analysis.

The biggest challenge in impact assessment of socio economic interventions therefore is to separate and capture the assumed causal role, between remittances and welfare improvement.

To capture the real impact of an intervention, one must control for selection and reverse causation. For example, even if there seems to be improvements in household access to goods and services after access to remittances, there still remain questions about whether the welfare improvement is significant as without access to remittances. On the other hand if it is observed that richer households access remittances, the important question is whether the remittances made the households richer or whether it is because they are rich that they can receive more remittances. The latter is the so called reverse causation. Selection bias has a lot to do with pre-existing attributes associated with remittance recipients. For example, a household may possess some other observed or unobserved attributes that put them at a socio economic advantage even without the remittances. For example a household may possess good entrepreneurship skills or managerial capabilities or better education that may already give them some advantage. This means that without control for such selection biases and reverse causation then impacts could be over estimated or underestimated. A simple model for impact chains can be illustrated as follows:-

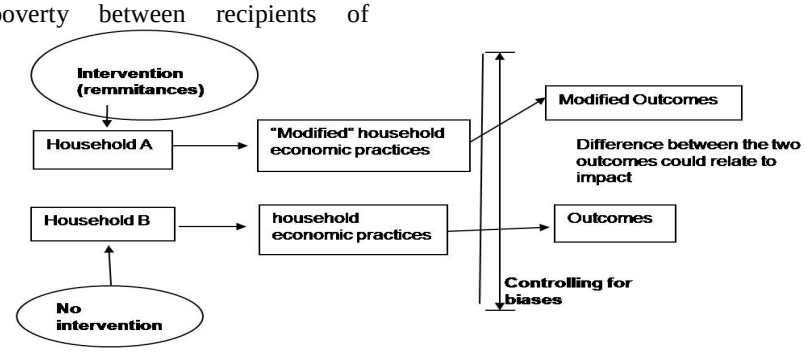

Figure 5: Model of the Impact chain: Adapted from Hulme, 1999

The impact chain provides a very simplified notion of how to capture the impact of an intervention such as remittances on household welfare. In reality, household welfare depends on many different attributes and not just remittances alone. Some of the attributes like age, education status, among other attributes can be observed and measured. However there are other attributes that is very difficulty to observe but they matter in explaining household welfare. These may include entrepreneurship capability, organizational ability amongst others. Calculating the impact of remittances requires that we disentangle the role of remittances on welfare and the role played by the other attributes both observable and unobservable. The methodology used to analyze the impact of remittances on welfare should therefore take in to account these issues in order to arrive at unbiased results.

IV. METHODOLOGY

4.1 Estimating Impact of remittances on household welfare Using two stage least squares

The initial impulse in estimating the impact of remittances on household welfare (per capita monthly household consumption) would be to run an OLS regression with per capita monthly household consumption as the dependent variable and use the coefficient on the amount of remittance to measure the impact of remittances on household welfare. In this case, remittances are likely to be highly correlated with the error terms of the consumption equation, and therefore the coefficient on remittances may be a biased estimator of impact. OLS may therefore over estimate the impact of remittances on household welfare. To avoid this pitfall we need to find an instrument which may be uncorrelated with the error term yet may predict remittances.

In this study confirmed household migration of a member was used to instrument for remittances. Migration, whether it is domestic or international is highly correlated with remittances but it is not correlated with per capita monthly household consumption. Controlling for other variables we run a two stage least squares regression to predict the impact of remittances on household welfare. Two stage least squares (Instrumental variable (IV) estimation in this case can be justified on the basis of endogenous independent variables. IV can thus be used to address the following important threats to the internal validity of our results: -i) omitted variable bias from a variable that is correlated with X but is unobserved, so cannot be included in the regression;
ii) Simultaneous causality bias (endogenous explanatory variables; X causes Y, Y causes X); Where X is the independent variable and Y is the dependent variable.
iii) Errors-in-variables bias (X is measured with an error)

Procedure for two stage least squares

Two stage least squares has two regressions in two stages: In the first regression, the part of X (independent variables) that is uncorrelated with the error term is isolated by regressing X on Z (Instrument) using OLS. The predicted values of the Xs are then computed. In the second stage, the original Xs are replaced with the new computed values and these new values are then regressed on Y using OLS. The resulting estimator is called the "Two stage least squares estimator and it is an efficient estimator as long as Z is not a weak instrument.

Table 2: Variables used in the IV estimation

Variable	Description
Conspae (dependent variable)	Percapita Monthly household consumption exp
Totalrem	Total remittances received by household (both domestic and international)
Soc	Social capital. Dummy variable peroxide by whether household member belongs to a social organized group
Shoc	Economic shocks (Whether households had suffered an economic shock within the last one year
Length	Length of experienced household economic shock
Hhsize	Number of people in household
Rururb	Area of residence, whether rural or urban

Hhsq	Squared number of people in household
Migra	Whether household has migrants. It is a dummy variable
Sex	Gender of head of household
Age	Age in years of head of household
Rem (ro1)	Whether household received remittances or not

4.2. Determinants of remittances

Model specification

To address issues of selection biases in remittances we shall use the heckman selection model. Statistical analyses based on non-randomly selected samples can lead to erroneous conclusions and poor policy. The Heckman correction, a two-step statistical approach, offers a means of correcting for non-random selection. Heckman's correction provides a test for sample selection bias and formula for bias corrected model.

First we formulate a model, based on economic theory for the probability of receiving remittances. The canonical specification for this relationship is a probity regression of the form;

$$\Pr ob(D = 1/Z) = \Phi(Z\gamma),$$

where D indicates whether a household receives remittances or not. ($D = 1$ if the respondent receives remittances and $D = 0$ otherwise), Z is a vector of explanatory variables, γ is a vector of unknown parameters, and Φ is the cumulative distribution function of the standard normal distribution. Estimation of the model yields results that can be used to predict this probability for each individual.

In the second stage, we correct for self-selection by incorporating a transformation of these predicted individual probabilities as an additional explanatory variable. The outcome equation can be specified:

$$w^* = X\beta + U$$

where w^* denotes an underlying remittance, which is censored for the respondents who do not receive. The conditional expectation of remittances given the person works is then:

$$E[w \mid X, D = 1] = X\beta + E(u \mid X, D = 1).$$

Under the assumption that the error terms are jointly normal we have:

$$E[w \mid X, D = 1] = X\beta + \rho\sigma_u \lambda(Z\gamma),$$

where ρ is the correlation between unobserved determinants of propensity to receive remittances, u, σ_u is the standard deviation of u, and λ is the inverse Mills ratio evaluated at $Z\gamma$.

The remittances equation can be estimated by replacing γ with Probit estimates from the first stage, constructing the λ term, and including it as an additional explanatory variable in linear regression estimation of the wage equation. Since $\sigma_u > 0$, the coefficient on λ can only be zero if $\rho = 0$, so testing the null that the coefficient on λ is zero is equivalent to testing for sample selectivity.

Table 3: Variables used for the heckman estimation:

Variable	Description
Totalrem (dependent variable)	Total remittances received by household (both domestic and international)
Soc	Social capital. Dummy variable proxied by whether household member belongs to a social organized group
Shoc	Economic shocks (Whether households had suffered an economic shock within the last one year
Length	Length of experienced shock
Hhsize	Number of people in household
Rururb	Area of residence, whether rural or urban
Hhsq	Squared number of people in household

Migra	Whether household has migrants. It is a dummy variable
Sex	Gender of head of household
Age	Age in years of head of household
Rem(ro1)(dependent variable)	Whether household received remittances or not
Conspae	Per capital Monthly household consumption exp
Hhsize	Number of people in household
Hhsq	Squared number of people in household
Rururb	Area of residence, whether rural or urban
Migra	Whether household has migrants. It is a dummy variable

4.3. Data Sources

The study used micro datasets, namely, the Kenya Integrated household Budget survey (KIHBS) 2005/06. KIHBS contains information on whether an individual household member received remittances, the amount received, amongst other demographic information on households.

V. RESULTS

Twenty percent of Kenyans have migrated either domestically or internationally, majority being domestic migrants. About half of these migrations are due to economic related reasons like job search, and business ventures. It was also found that 3% of spouses in Kenya live away from their immediate families. Migration, whether domestic or international forms a good basis of remittances as migrants try not only to improve their own livelihoods but also the livelihoods of those they left behind. The results show that 70% of households received remittances within the past one year of the study. Overall domestic remittances dominated the international ones. For example the mean domestic cash remittances were about khs 5800, while the international cash remittances were 2340. While international remittances may be sent in larger amounts to individual households only few households as compared to domestic remittances receive them. The mean domestic food remittances had a cash value of Kshs 2040 while international food remittances were mainly insignificant. This could be explained by the fact that it could be more difficult to send commodities other than cash from abroad. Mean total domestic remittances (both cash and non cash was Kshs 11060).

Remittances have been used to smoothen or cushion consumption in times of shocks. Up to 60% of respondents admitted to having experienced economic shock ranging from deaths of bread winners to natural disasters. Overall 30% of the shocks were related to agricultural production while 8 % of those shocks had to do with input prices. 12% of those affected by shocks had used remittances to deal with the impacts. Most of the remittances were reported as originating from friends and relatives.

Regression results

Table 4: Instrumental regression results to measure the impact of remittances on household welfare

Variable	Coefficient	Standard error	T statistic	p
Conspae (Dependent variable)				
Totalrem	0.8092	0.3048	2.65	0.008
Rururb	-0.4762	0.1987	-2.40	0.017
Age	0.0261	0.0149	1.75	0.081
Agesq	-0.00037	0.00014	-2.52	0.012
Hhsize	-0.3785	0.095201	-3.98	0.000
Hhsq	0.02262	0.00872	2.59	0.010
Migr	0.1518	0.0373	4.07	0.000
Shoc	-0.0129	0.00938	-1.38	0.169
Length	0.01022	0.0036	2.84	0.005
Constant	3.998	1.8145	2.20	0.028

Instrumented: Totalremm (total remittances)

From these results, the significant variables in explaining consumption and welfare in include, remittances, location of individual rural or urban, age of individual, length of shocks among other variables. Notable the results suggest that the presence of a shock may not have a significant impact on consumption but it is the length of its existence that may have significant negative effects on consumption. The results therefore conclude that remittances have a positive impact on consumption. Other findings indicate that those living in the rural areas are likely to have lower consumption levels than those living in urban areas. This result is important and has a key policy implication. For example: Given that majority of shocks reported related to agricultural productivity, then rural areas are likely to be affected by these shocks. Agricultural shocks render rural dwellers vulnerable to welfare losses. It is therefore important for policy makers to think of suitable social safety nets to in order to cushion the effects of extended periods of shocks.

Table 5: Regression results for the determinants of remittances

Regression Equation				
Variable	Coefficient	Std error	z	p
Totalrem (dependent variable)				
Soc	0.0703	0.0419	1.168	0.094
Shoc	-0.0032	0.009013	-0.36	0.721
Length	0.000028	0.0040432	0.07	0.944
Hhsize	0.6966	0.11424	6.10	0.00
Rururb	0.5565	0.12340	4.51	0.00
Hhsq	-0.0509	0.008137	-6.27	0.00
Migra	0.5245	0.1889	2.78	0.005
Sex	0.3740	0.10355	-3.61	0.00
Age	0.01175	0.002998	3.92	0.012
Constant	-2.9122	1.163	-2.50	
Selection equation				
Rem (ro1) (dependent variable)	0.08230	0.28022	29.37	0.00
Conspae	-0.0004313	0.0000342	-12.59	0.00
Hhsize	0.11066	0.07407	14.94	0.00
Hhsq	-0.00766	0.005201	-14.73	0.00
Rururb	0.1589	0.12867	12.35	0.00
Migra	0.2643	0.0774	34.15	0.00
Constant	-0.1.5176			
Mills Lambda	3.016289	0.7064	4.27	0.00
Rho	0.530			
Sigma	0.5684			
Lambda	0.30616	0.7064		

From the previous analysis it was found that remittances have positive and significant effects on consumption. In this section an attempt was made to analyze the factors that determine remittances. The goal is understand the factors driving remittances; and more so to understand which households are likely to receive this important social transfer service and which ones are not likely to. This information will be important for policy formulation regarding social transfer policies. Some of the significant determinants of remittances include; location of individual (rural or urban), whether a household has a member who has migrated from the households to either a domestic or international destination, gender of recipient and age of recipient and the level of social capital that an individual has. Individuals who belong in social networks (Proxy for social capital) will receive higher amounts of remittances than those who do not.

The results of the selection equation have that poorer households are likely to receive remittances than richer ones. Overall the results stress on the importance of social networks as a source of social transfer (remittances). The results also confirm the importance of social protection incase of long periods of shocks in order to cushion household consumption of goods and services, Where as agriculture remains to be very important in the economy, the study shows that farmers continue to experience shocks that may interfere with agricultural productivity. It is therefore important to formulate agricultural policies that recognize the need for social protection in agricultural productivity. Some may include but not limited to input subsidies given that price shocks were reported as significant in the sector.

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ANNEX

We used Stata's **hausman** command to test whether the differences between the ivreg and OLS estimates are large enough to suggest that the OLS estimates are not consistent. We found that there is a significant (chi-square = 39.2, df =1, p = 0.0000) difference between the **ivreg** and OLS coefficients, indicating clearly that OLS is an inconsistent estimator in this equation. The conclusion is that the reason for the inconsistent estimates is due to the total remittances.