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Original Research Article

Does Diaspora Remittances Enhance Productive Asset Purchase in Host country? Evidence from Nigeria

Anochiwa Lasbrey, Michael Oguwuike Enyoghasim*, Agbanike Tobechi, Njoku Sunday, Emenogu Augustine C, Agu Chibuzo Glory

[1]Department of Economics and Development Studies, Alex Ekwueme Federal University Ndufu-Alike, Nigeria

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***Corresponding author:** Michael Oguwuike Enyoghasim

Abstract

It is no longer a debate that international remittance has a positive influence on economic growth as it goes into individuals to meet family needs, but what has not been settled empirically (at least in the case of Nigeria) is the end-use allocation of this resources. This study assesses the expenditure pattern of international remittances on productive assets purchase using a micro cross-sectional data obtained from 2009 World Bank's Migration and Remittances Survey in Nigeria. The model estimated was based on a new approach, using the bivariate probit regression equation which saw remittances and productive assets as endogenous variables determined by some observed variables. The main result is the insignificant positive effect of migrant remittances on propensity to acquire productive assets among Nigeria's households.

Keywords: Remittances, Diaspora, Productive Assets, Migration, Economic growth.
JEL Classification: D13, O15.

INTRODUCTION

Remittances of international migrants to developing countries are attracting great attention in the contemporary times because of the quantum of transaction which is estimated to have risen considerably over the years. Recent estimates show an increase from US$432 billion in 2015 to US$516 billion in 2016 [1, 2]. Remittances to Nigeria rose every year over the last decade, from $16.93 billion in 2006 to $20.83 billion in 2014, making Nigeria the sixth largest recipient of remittances in the world. It is no longer a debate that remittance goes into individuals to meet family needs, but what has not been settled empirically (at least in Nigeria) is the specific thing the money is used for. Some studies argue that remittances are mainly spent on immediate consumption goods such as food and utilities [3-5] while an alternative view in the literature asserts that households consider remittances to be a form of transitory income which will be spent more at the margin on human and physical capital investments than on consumption goods [6-8].

A lot of research has gone into the impact of remittances on the growth of an economy and as an agent for poverty reduction. However, the issue of productive asserts acquisition seems a recent phenomenon, especially in Nigeria. The term "remittances" basically refers to the transfers, in cash or in kind, from a migrant to household residents in the country of origin. Remittances are referred to as unrequited transfer sent by migrant workers back to relatives in their countries of origin [9]. Remittances are person-to person flows, well targeted to the needs of the recipients, and these gifts and or money, do not typically suffer from unnecessary international monetary regulations often associated with official aid flows.

Fundamentally, remittances are personal flows from migrants to their families and friends [10, 11]. Ratha [12] portrays remittances as the most tangible and least controversial link between migration and development because of its stability and counter- cyclicality over time compared to other private flows.

That remittances are agents of growth is incontrovertible. As Bang et al., [13] observed there is more agreement than disagreement with regard to the impact of remittances on growth and poverty; most of the evidence in the literature suggests that remittances enhance growth and reduce poverty. Studies such as

Catrinescu et al., [14] and Feeny et al., [15] support the poverty reduction hypothesis by emphasizing that remittances stimulate financial development. Meanwhile, Giuliano and Ruiz Arranz [16]; Mundaca [17]; Aggarwal et al., [18]; Chowdhury [19] focused on human capital formation and found that remittances enhance development through increasing educational expenditure at the household level. But, that remittances are used for consumption alone or purchase of productive assets is omnibus and the boundaries of that argument is fluid.

This paper seeks to contribute to the long-standing debates in the literature concerning the use of remittances by households. Do Nigerian households utilize remittances in a productive manner through acquiring productive assets or purely for consumption? What is the composition of remittances on productive assets acquisition among households in Nigeria; and do remittances alleviate receiving household's financial constraint? These are some of the questions we will attempt to answer. The objectives of this study are;

- To examine whether remittances impact significantly on productive assets acquisition in Nigeria.
- To examine the type of remittances that contributes to the acquisition of productive assets in Nigeria.
- Do remittances significantly alleviate household financial constraint?

Literature Review and Theoretical Framework

Theories associated with the impact of remittances on development are hinged on three underpinning points: Again, one of the arguments that favoured this research is the classification of remittance end-use into three [6]. Much of the empirical works we have cited early seems to suggest that in all, remittances are beneficial to the host country. Developmental Optimistic School which sprang out of the neoclassical school of thought on migration hypothesis holds the view that remittances are beneficial to development of the host country. The second is the Developmental Pessimistic School that is largely influenced by the structuralism dependency school. They anchor their view on the negative effects of remittances. The third is a combined position of the two earlier ones inspired by the Remittances Development Pluralists. [20-23]. We shall attempt to highlight these three positions briefly.

The Developmental Optimistic View

The Developmental Optimistic view became prominent in 1950s and 1960s. it assumed that those who move to the western world in what we call North-South migration transfer money to their loved ones at home. And this "North-South" transfers of investment capital also come with it enhancement of labour of the exporting countries due to their exposure to "liberal, rational and democratic ideas, modern knowledge and education" [21]. The general assumption the followers of this theory portend is that flows of remittances as well as experience, skills and knowledge that migrants acquire abroad will enhance development in the recipient countries [21, 24, 22]. In the Neoclassical model of balanced growth, migration is a process contributing to optimal allocation of production factors, which benefit all equally, both the countries of origin and the recipients [22]. In an unconstrained market environment, free labour mobility will lead to scarcity of labour, and hence the marginal productivity of labour will increase and lead to higher wages in the migrant sending countries [22, 25, 26].

The Developmental Pessimistic View

In the late 1960s a new viewpoint regarding remittances, migration and development emerged; referred to as the pessimistic view. The theory arose from a shift in social science towards more structural views [22]. This theory suggests that the net effect of migration and remittances does not foster sustainable development [21]. The brain drain is one of the aspects considered, where emigration of the educated leads to a loss that is not offset by the benefits associated with remittances [27-33]. The developing countries are drained of their human capital resources when educated inhabitants emigrate.

They argue that the recipients are not as enlightened to make investment decisions therefore, the recipient might not be as skilled as domestic financial intermediaries; therefore the investment is less likely to be successful [34-36]. Money would rather be spent on consumption or non-productive investments such as real estate and rarely in productive enterprises [21]. If the money received is spent mainly on consumption, rather than investment, this could encourage more rapid inflation in the remittance receiving developing countries [37, 36, 38, 39]. Diaspora income is a largess and could lead to crowding out effect. Increased wealth, generated by remittances, could challenge the receiver'

The Developmental Pluralistic View

The third variant often referred to as Developmental Pluralistic View is not so much a theory but rather an anti-thesis of both the positive and pessimistic view that arose in the 1980s and 1990s. The pluralistic view aims to link causes and consequences of migration more explicitly, in which both positive and negative effects on development are possible [22]. They argue that because of the complexity of remittances and development, there is a need of more dynamic understanding of the relationship between them. Neither the optimistic nor the pessimistic view provides this [21]. According to this theory the fundamental question is not whether migration has a strictly negative or positive impact on development, the effects of remittances are thus context-dependent [22, 23].

Skepticism about the use of migrant remittances for productive investments has become the common thread of the migration and development

debate. In this research, we stand by the proposition that a significant proportion of remittances are spent on savings and investment while a small fraction is spent on consumption. Notwithstanding, a cursory look at empirical findings of the pessimistic view of remittance expenditure among household will be worthwhile.

Empirical findings have made it no longer a debate that migration can generate output growth either by increasing consumption or increasing investment - through multipliers [40, 41, 9]. Beginning with the pessimistic view, World Bank [1], investigated the impact of remittances on the expenditure pattern of rural households with data from Ethiopia Rural Household Survey (ERHS), using the Two- part model or (Hurdle model) within Engel's Curve framework. Their findings show absence of any strong link between remittance income and investment expenditure on the first model, and in the second part it found a positive and robust link with consumption expenditure.

Amel S. Omer et al., [42] explored the effects on health of both household asset inequality and political armed conflict in Sudan; with data drawn from 2010 Sudan Household survey to evaluate the role of household distribution and conflict status. They should variables such life expectancy, infant mortality, height-for-age (stunting), adequacy of food consumption, teenage birth rates and vaccination coverage for young children. Their findings show that states with unequal distribution of wealth suffer more in conflict and significantly worse-off in health.

Yameogo [43], for Burkina Faso analyzed the impact of remittance on household expenditure with data from the 2010 Cross-Sectional Survey using a Latent Class Model (LCM). Its result shows that remittance is significantly and positively related with expenditure on food and other utilities. It went further to investigate remittance inflow and household expenditure pattern in Kenya, using a Fixed Effect (FE) model on a panel of 295 households. In their findings, remittance is significant and positively related to consumption of food and public utilities.

A recent survey by Urama et al., [5] who used panel data from Indonesian Family Life Survey conducted survey between 2000-2007 also found that household spent more of their margin on food compared to what they would have spent without the receipt of remittances. Urama et al., [5] also took a study of Tajikistan, using a Propensity Score matching Method, and found that neither internal nor external remittances have a positive effect on investment expenditure. These studies lend support to the pessimistic view that households spend more of their remittances on food and barely on productive investment.

Conversely, authors of optimistic view say remittances could be more investment prone than consumption; beginning with Quartey [44], who used data from Malawi Integrated Household Survey - November 1997-October 1998 and undertook responses from 2,046 households to investigate how remittances are spent in Malawi. They used the Ordinary Least Squares (OLS) method to estimate income elasticity and the Inverse Mill's Ratio (IMR) to control for selection bias. Their findings show that households in Malawi choose to allocate income from remittance differently from other forms of income.

Further, Simon et al., [45], used a panel data obtained from 115 developing countries in 2007 to investigate how households spend their remittances. They found that households allocate less on food and more of their income on investment good like housing, education as well as other entrepreneurial activities. In another related research during the same period Soraya [46], used a cross-country analysis to investigate how households spend their remittances and their findings indicates that households used more of their remittance income on savings and investment than other consumption.

In another empirical work Udah [6], used two approaches to examine the impact of remittances on expenditure pattern of house-holds in Kyrgyz Republic. The researchers employed the use of Seemingly Unrelated Regression (SUR) and Propensity Score Matching (PSM) model. Result from their findings using the two methods show that remittances increase the share of expenditure on durable goods such as human capital investment and construction.

Jena F [47] used instrumental variable and recursive probability model to investigate the migrant remittances and physical investment purchases in Kenya and found that remittances have a positive effect on household purchases of physical investment. In another related work, Agwu et al., [9] employing quantile regression method using household expenditure as a proxy for household income to examine the impact of remittances on income inequality where they posit that remittances are used in productive ways by households which invariably improve the household welfare. That remittance enhance household expenditure at all quantiles of expenditure distribution but the impact is not uniformly distributed along income levels. The standard quantile regression suggests that the impact of remittances graduates from the lowest to the topmost quantile of income distribution.

In a recent work by Denis et al., [48], the study assesses the expenditure patterns of international remittances; comparing between remittance recipient households and non-recipient households in Nigeria. Household data was sourced from Anambra and Enugu states of Nigeria in November 2011 for the study. Using the working lesser model, this study finds that

remittance into Nigeria has a stabilizing effect on its expenditure, as the marginal difference between remittance recipient households and non-recipient households is not significant for most of the expenditure types. However, remittance expenditures on shares/stock market investments are relatively lower than in non-recipient households. Meanwhile remittance expenditures on buildings, funerals and family subsistence are relatively higher than non-recipient household's expenditure.

In summary, it is obvious that the debate on household expenditure pattern skewed towards food consumption, while others are heavily skewed towards investment and asset purchase. It will be too bogus to use panel results from other countries to determine the outcome of another country in this regard. This is because the dynamics of end-use differs from country to country depending on its peculiarities. Denis et al., [48], gives us a lead to follow in our analysis though we have deliberately chosen to use different model to analyze the impact. Nevertheless, there are relatively few works of this kind in Nigeria. This therefore stands out as our point of departure in this paper.

DATA AND METHODS

In this research, a single-round cross-sectional survey with information on household characteristics, household assets and expenditures, households with migrants, returning migrants and remittances received was obtained from the 2009 World Bank's Migration and Remittances Survey in Nigeria. The survey was commissioned in September 2009. The survey was nationally representative and it followed a stratified random sampling with 18 out of the 36 states and the Federal Capital in Nigeria selected, in which 2251 households were successfully interviewed.

In analyzing and presenting data, the research work is conducted using an econometric methodology of probit regression model. A probit regression model is best suited for capturing binary indicator dependent variables. The data obtained is fitted by the recursive probit and instrumental variable analysis. This technique is used because it facilitates model specification, parameter estimation and aids in formulation of good policies. However, recursive bivariate probit was used to cater for endogeneity problem.

The model specification of this study is therefore as follows:
The functional form of the model is specified as;
$P(Y = 1/X) = G(X\beta) \equiv P(X)$ ……. (1)

'X' is the vector that captures the covariates used in the regression.
'G' is the normal cumulative function (cdf).

The specific form of G can be derived from an underlying latent variable model given as;

$$y^* = X\beta + \varepsilon$$

Where;
$y = 1[y^* > 0]$.

The Evaluation is based on Econometric Criteria
The recursive bivariate probit model is presented below:

$$prod_{it} = \alpha_1 remit_{it} + \varkappa_1\beta_{1it} + \mu_{1it} \quad \ldots\ldots\ldots\ldots\ldots \quad (2)$$

$$Remit_{it} = \varkappa_2\beta_{2it} + \mu_{2it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

"prod and remit" are latent variables reflecting household's propensity to acquire productive assets and remittances.

'$\varkappa_1$' includes covariance aiding household's incentive to acquire productive assets.
While $\varkappa_2$' represents covariance aiding remittance.

$$prod_{it} = \begin{cases} 1 \text{ if prodit} > 0 \\ 0 \text{ if prodit } y \leq 0 \end{cases} \quad \ldots\ldots\ldots\ldots\ldots \quad (4)$$

$$Remit_{it} = \begin{cases} 1 \text{ ifremitit} > 0 \\ 0 \text{ ifremitit} \leq 0 \end{cases} \quad \ldots\ldots\ldots\ldots\ldots \quad (5)$$

Where;

$Prod_{it}$ And $Remit_i$represent whether the household received remittances and the actual decision of whether to spend on productive assets as included in equation (2).

The survey of 2251 households show that total of 724 households receives remittance within the last 1 year making a total of 32.16% from the total household survey, while only 421 households have acquired productive assets making 18.70% of the total household survey(see Table-1 and Table-2).

RESULTS AND INTERPRETATION

Table-1: Households and receipts of remittance

Remittance	Freq.	Percent	cum.
0	1,527	67.84	67.84
	724	32.16	100.00
Total	2,251	100.00	

Table-2: Households and acquisition of productive assets

Asset	Freq.	Percent	Cum.
0	1,830	81.30	81.30
1	421	18.70	100.00
Total	2, 251	100.00	
asset	Freq.	Percent	Cum.
0	1,830	81.30	81.30
1	421	18.70	100.00
Total	2,251	100.00	

Source: Researcher's computation; stata 14

From the Table-1 above, a total of 1527 Households did not receive remittance, while from Table-2 a total of 1830 households did not acquire productive assets.

Table-3: Households that receive remittance without purchase of productive asset

Remittance	Asset		
0	0	1	Total
0	1,272	225	1,527
1	558	166	724
Total	1830	421	2,251

Source: Researcher's computation; stata 14

From Table-3 above, households that received remittance and not acquiring productive assets is estimated to be 558 out of 724 households, while a total of 255 households acquired productive assets but did not receive remittance. We proceed to conduct Analysis Of Variance (ANOVA) which is used to test and define the significance of the mean of the two groups.

Table-4: ANOVA Result

Analysis of Variance

Source	ss	Df	MS	F	Prob>F
Between groups within groups	1.90548777 340.355729	1 2249	1,90548777 .151336474	12.59	0.0004
Total	342.261217	2250	.152116097		
Barlett's test for equal variance: chi2(1) = 14.5019 Prob > chi2 = 0.00					

The result on the ANOVA table 4 above, shows that the variables are significantly different. The prob> F being below 0.05, and the F-stat being above 1.96 using a 10% level of significance, we reject the null hypothesis of no difference. This implies that we have accepted the alternative hypothesis of statistically significant difference between the remittances and productive assets data collected by the survey, making the data suitable for further analysis.

Estimation of Household characteristics

The estimation takes into account household characteristics such as total household expenditure, household size, and other characteristics of the household head such as age, gender, marital status, employment status, and education. The survey does not provide information on household wealth, however, the study controlled for household wealth with proxies such as household ownership of computer, ownership of car truck and ownership household fridge, also the regressions also take into account urban and regional dummies respectively as shown in Table-5.

Table 5: Estimation of Household characteristics

Marginal effects after biprobit

y=pr(asset- 1, remittance = 1) (predict)

= 0.05853467

Variable	dy/dx	std. Err	z	p > [z]	[95% C. I]		X
intoth~p	0.0398555	.00426	9.36	0.000	.031513	.048198	11.5615
hheadsex*	-.0204167	.01235	-1.65	0.098	-.044616	.003783	.859128
hhloca~n*	-.0323123	.00787	-4.10	0.000	-.047745	-.016879	.507427
hhfridge*	-.0114721	.00869	-1.32	0.187	-.028498	.005554	.49976
hhcar*	-.0190486	.00943	-0.77	0.442	-.025735	.011233	.240537
hhcomp~r*	-0.190486	.00934	-2.04	0.041	-.037356	-.000741	.163872
educat~s	-.6212194	.60571	-3.72	0.000	-.032406	-.010032	1.77432
hhfule~y*	-.0263203	.01212	-2.17	0.030	-.050077	-.002564	.837566
hhhead~s*	.0923274	.01112	8.30	0.000	.070536	.114119	.355055
hhhead~e	.0002263	.0003	0.76	0.446	-.000355	.000808	49.5644
Hhsize	-.0005856	.00117	-0.50	0.618	-.002884	.001713	5.78965

(*)dy/dx is for discrete change of dummy variable 0 to 1

Source: researcher's computation; stata 14

The result in Table-5, show that all things being equal, household expenditure (lntothexp), household location (hhlocation), education status (education status), household full emploment (hhfulemployment), and household marital status (hhheadmarital status),are all statistically significant as a propensity to acquire productive assets and receive remittance, while, hheadage, hheadsize, hhcar, hhfridge, and hhsex are not statistically significant determinants of productive assets acquisition and remittance. Hence, the significant variables will be used for further analysis. The simple probit regression is used to run productive assets on remittances received by households. The variable $x_1\beta_{1i}$ represents other latent variable aiding productive assets. See details in appendix A (Bivariate probitregression)

Objective 1

To examine whether remittances impact significantly on productive assets acquisition in Nigeria. The probit regression equation in 2 is used. That is

$prod_{it} = \alpha_1 remit_{it} + \varkappa_1\beta_{1it} + \mu_{1it}$

The variable $x_1\beta_{1i}$ represents other latent variable aiding productive assets.

Table-6: Estimates of the probit model

Marginal effects after biprobit
y=pr(asset) (predict)
= 0.17251402

Variable	dy/dx	std. Err	Z	p > [z]	[95% C.I]		X
remitt~e*	0.238869	0.02973	1.15	0.249	-.016139	.064513	.334603
hhhead~s*	.0069443	.0199	0.35	0.727	-.032063	.045951	.356497
hhfule~y*	-,0129488	.02321	-.56	0.577	-.658437	.032539	.836744
educat~s	-.0499728	.01269	-3.94	0.000	-.074838	-.025108	1.7763
hhcomp~r*	-.0716628	.02118	-3.38	0.001	-.113177	-.030148	.164683
hhloca~n*	-.0926117	.01789	-5.18	0.000	-.127684	-.05754	.509757
Intoth~p	.0683051	.00793	8.61	0.000	.05276	.083851	11.5684

(*)dy/dx is for discrete change of dummy variable 0 to 1
Source: researcher's computation; stata 14

The result from the Table-6 above, show that remittances do not impact significantly on productive assets acquisition. From the result, it shows all other variables held constant, households that receive remittances have an increased probability of acquiring productive assets by 0.0238869 compared to non-remittances receiving households. Also the results obtained show a positive and insignificant impact of remittances and acquisition of productive assets due to p-value > 0.05

The significance of remittance do not in this paper conform to empirical conclusion on our a priori expectation. This could be explained that remittances received by households are being utilized by households for consumption purposes. Thus, remittances received are channeled into immediate consumption. Prior to the research, it was expected that remittances play significant impact on productive assets accumulation; as households receive remittances, they tend to acquire productive assets. From the result we reject the alternative hypothesis.

Objective 2:

To examine the type of remittances that contributes to the acquisition of productive assets in Nigeria.

To achieve this objective, we considered the research question: "what type of remittances impacted on productive assets acquisition in Nigeria?" In order to test this hypothesis, we would use equation 2 also, ($prod_{it}= \alpha_1 remit_{it} + \varkappa_1 \beta_{1it} + \mu_{1it}$) and type remittances (local and international) and the significant variables used in achieving the broad objectives. Following dummy specification the regression was made in the natural log of odds and presented below. The result as interpreted is titled Table 7 indicating the marginal effect estimates.

Table-7: Marginal effects after probit

Marginal effects after biprobit
y=pr(asset) (predict)
= 0.17166872

Variable	dy/dx	std. Err	z	p > [z]	[95% C.I		X
Int_re~t*	-.022517	.02491	-0.90	0.366	-.071344	.02631	.149453
Loc_re~t*	.0591433	0.2593	2.28	0.23	.008318	.109968	.18515
Intoth~p	.070496	.00796	8.85	0.000	.054885	.086107	11.5684
hhloca~n*	-.0913718	.01788	-5.11	0.000	-.126424	-.05632	.509757
hh.comp~r*	-0.0703229	.02123	-3.31	0.001	-.111941	-.028705	.164683
educat~s	-.0483147	.01269	-3.81	0.000	-.073184	-.023445	1.7763
hhfule~y*	-.0132302	0.232	-0.57	0.568	-.058697	.032236	.836744
hhhead~s*	.0061997	.01987	0.31	0.755	-.032739	.045138	.356497

(*)dy/dx is for discrete change of dummy variable 0 to 1
Source: researcher's computation; stata 14

Table-7 result above shows that all other variables held constant, local remittances (loc_remit) significantly impact on productive assets. From the result, it shows that households that receive local remittances have an increased probability of acquiring productive assets by 0.0591433 compared to non-remittance receiving households. While international remittance (int_remit) has a negative and insignificant impact on the propensity to acquire productive assets thus reduce households' probability of acquiring productive assets by 0.022517 compare to non-remittances receiving households. Local remittances have a positive and significant impact on the propensity to acquire productive asset due to p-value < 0.05.

International remittances not being significant could be (perhaps) as a result of high interest rate charged by commercial banks and other formal channels through which remittances are sent to households. Interest rates charged on remittances sent internationally are estimated to be about 10%. Local remittance is utilized for productive assets acquisition due to little or small interest rate charged on remittances inflow to households. From the result we reject the null hypothesis and accept the alternative.

Objective 3:
To determine if, remittances significantly alleviate financial constraint of household.

To achieve this objective, we would consider the research question: "Do remittances significantly alleviate household financial constraint?"
$Remit_{it} = \varkappa_2\beta_{2it} + \mu_{2it}$
H_o: Remittances do not significantly alleviate household financial constraints.
H_1: Remittances significantly alleviate household financial constraints.

In order to test this hypothesis, we used equation 3 ($Remit_{it} = \varkappa_2\beta_{2it} + \mu_{2it}$)
$\varkappa_2\beta_{2i}$ represents other latent variable aiding remittance. These variables are the significant variable in Appendix A and shown in Table-8.

Table-8: Remittances and household financial constraint

Marginal effects after biprobit
y=pr(remittance) (predict)
= 0.30054091

Variables	dy/dx	std. Err	Z	P>[z]	[95% C. I.]	X
Intoth~p	0.0740474	0.01028	7.20	0.000	.53904 .094191	11.5684
hhloca~n*	-.0338292	.02333	-1.45	0.147	-.079552 .011893	.509757
hhcomp~r*	.0152493	.03248	0.47	0.639	-.048505 .078904	.164683
educat~s	-.0354957	.01621	-2.19	0.029	-.06726 -.003732	1.7763
hhfule~y*	-.1245503	.03149	-3.96	0.000	-.186263 -.062837	.836744
hhead~s*	.4575978	.02099	21.80	0.000	.416452 .498744	.356497

(*)dy/dx is for discrete change of dummy variable 0 to 1
Source: researcher's computation; stata 14

The result from Table-8, show that all other variables held constant, lntothexp is positive and statistically significant on remittance received by households. From the result, it also shows that households with an increased total household expenditure have a probability of receiving remittance by 0.074074 compared to non-remittance receiving households. lntothexp is positive and statistically significant due to p-value < 0.05. From the result we reject the null hypothesis. Household location is not significant could be as a result of households location being urban and the remittances received international are small since the inflow of remittances are expected to be vertical, hence urban dwellers are expected to receive remittances abroad.

DISCUSSION OF RESULT

This study analyzed the impact of remittances on productive assets acquisition from a household survey in 2009. The result shows those households that receive remittances within the last one year are more likely to utilize the remittances received for consumptive purpose and payment of utilities such as food, health care, electricity bills etc. which is in line with the view that remittances cause household members to reduce their labour supply and spend remittance income on consumption substituting for labour income. Studies that support this perception include Adams & Cuecuecha [49], Chami et al., [50], and Durand et al., [51] contrary to the view that remittances are transitory and as such channeled into productive investment that spurs economic growth and development [47, 52, 53]. Usefulness of remittances is assumed to be mainly for consumption purpose. The null hypothesis is not rejected while the alternative hypothesis is rejected.

The result also depict that local remittances significantly impact more on acquiring productive assets by households while international remittances are not significant and are channeled towards consumption goods.

Remittances from the result obtained, increased household expenditure, thus alleviates financial constraint of household thereby smoothing their expenditure pattern. The research showed that remittances reduces households members' labour supply making them to spend remittance income on consumption substituting for labour income as opined by Chami et al., [50] and Adams and Cuecuecha [49].

APPENDIX A
VARIABLES SPECIFICATION
1. assets: if household acquire productive assets within the last one year (1), otherwise (0).
2. Remittances: total amount sent by migrant
3. hhsize: total household size
4. lntothexp: total household expenditure
5. hheadage: age at last birthday
6. hhhmaritalstatu: 1 if married, 0 otherwise.
7. hhfulemploy:1 if full employed, 0 otherwise.

8.educationstatus:(1)primary,(2)secondary,(3)tertiary
9 hhcomputer: 1yes, 0 otherwise.
10. hhcar:1yes, 0 otherwise.
11. hhfridge:1 yes, 0 otherwise.
12. hhlocation:1 urban, 0 otherwise.
13. hheadsex:total household size
14. int_remit: international remittances received
15. loc_remit: local remittances received

APPENDIX B

Table-1

Bivariate probit regression — Number of obs = 2,087; Wald chi2(22) = 692.46; Log likelihood = -1925.7118; Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
asset						
lntothhexp	.3478303	.0360415	9.65	0.000	.2771902	.4184705
hheadsex	-.0478344	.09978	-0.48	0.632	-.2433997	.1477308
hhlocation	-.3664155	.0723618	-5.06	0.000	-.508242	-.2245891
hhfridge	-.1915999	.0827127	-2.32	0.021	-.3537138	-.029486
hhcar	-.2144386	.0961139	-2.23	0.026	-.4028183	-.0260589
hhcomputer	-.1990347	.1099177	-1.81	0.070	-.4144693	.0164
educationstatus	-.2040495	.0540422	-3.78	0.000	-.3099704	-.0981287
hhfulemploy	-.195459	.09438	-2.07	0.038	-.3804403	-.0104776
hhheadmaritalstatus	.1344115	.0724114	1.86	0.063	-.0075123	.2763353
hhheadage	-.0110496	.0027959	-3.95	0.000	-.0165295	-.0055697
hhsize	.0144312	.0110255	1.31	0.191	-.0071784	.0360407
_cons	-3.636233	.4009042	-9.07	0.000	-4.421991	-2.850475
remittance						
lntothhexp	.1795725	.0337313	5.32	0.000	.1134603	.2456846
hheadsex	-.2436686	.0931718	-2.62	0.009	-.426282	-.0610553
hhlocation	-.0325293	.0699192	-0.47	0.642	-.1695684	.1045098
hhfridge	.0689233	.0803784	0.86	0.391	-.0886155	.226462
hhcar	.1783106	.088474	2.02	0.044	.0049048	.3517164
hhcomputer	-.0708611	.0987105	-0.72	0.473	-.2643301	.1226079
educationstatus	-.0706443	.0511191	-1.38	0.167	-.1708359	.0295473
hhfulemploy	-.1220232	.0902955	-1.35	0.177	-.2989991	.0549527
hhheadmaritalstatus	1.222708	.0660244	18.52	0.000	1.093303	1.352114
hhheadage	.0182558	.002676	6.82	0.000	.013011	.0235006
hhsize	-.0284997	.0111149	-2.56	0.010	-.0502846	-.0067148
_cons	-3.403758	.3923296	-8.68	0.000	-4.17271	-2.634806
/athrho	.1046699	.0479513	2.18	0.029	.0106872	.1986527
rho	.1042894	.0474297			.0106868	.1960801

Likelihood-ratio test of rho=0: chi2(1) = 4.78493 Prob > chi2 = 0.0287

Source: Researcher's computation; stata 14

Marginal effects after probit

y = Pr(asset) (predict)

= .17166872

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
int_re~t*	-.022517	.02491	-0.90	0.366	-.071344	.02631	.149453
loc_re~t*	.0591433	.02593	2.28	0.023	.008318	.109968	.18515
lntoth~p	.070496	.00796	8.85	0.000	.054885	.086107	11.5684
hhloca~n*	-.0913718	.01788	-5.11	0.000	-.126424	-.05632	.509757
hhcomp~r*	-.0703229	.02123	-3.31	0.001	-.111941	-.028705	.164683
educat~s	-.0483147	.01269	-3.81	0.000	-.073184	-.023445	1.7763
hhfule~y*	-.0132302	.0232	-0.57	0.568	-.058697	.032236	.836744
hhhead~s*	.0061997	.01987	0.31	0.755	-.032739	.045138	.356497

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Source: Researcher's computation; stata 14

Table-2

Probit regression — Number of obs = 2,087; LR chi2(12) = 157.50; Prob > chi2 = 0.0000; Log likelihood = -923.51582; Pseudo R2 = 0.0786

asset	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
remittance	.1788893	.0819363	2.18	0.029	.0182971	.3394815
lntothhexp	.3397249	.0362885	9.36	0.000	.2686007	.4108491
hhheadmaritalstatus	.0591488	.080167	0.74	0.461	-.0979757	.2162732
hhfulemploy	-.1884765	.0945992	-1.99	0.046	-.3738875	-.0030655
educationstatus	-.2002557	.0541739	-3.70	0.000	-.3064346	-.0940768
hhcomputer	-.1973613	.1101011	-1.79	0.073	-.4131555	.018433
hhlocation	-.3648421	.0724681	-5.03	0.000	-.506877	-.2228072
hhsize	.0160926	.0110668	1.45	0.146	-.005598	.0377833
hheadsex	-.0355867	.1001052	-0.36	0.722	-.2317894	.1606159
hhfridge	-.1953691	.0828877	-2.36	0.018	-.3578259	-.0329122
hhheadage	-.0120005	.0028343	-4.23	0.000	-.0175555	-.0064455
hhcar	-.2248028	.0963347	-2.33	0.020	-.4136153	-.0359903
_cons	-3.560421	.4027933	-8.84	0.000	-4.349881	-2.77096

Source: Researcher's computation; stata 14

Table-3

Probit regression — Number of obs = 2,101; LR chi2(7) = 120.86; Prob > chi2 = 0.0000; Log likelihood = -950.61627; Pseudo R2 = 0.0598

asset	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
remittance	.0921912	.0788901	1.17	0.243	-.0624305	.2468129
lntothhexp	.2674018	.0314186	8.51	0.000	.2058226	.3289811
hhlocation	-.3615856	.0700122	-5.16	0.000	-.4988069	-.2243643
hhcomputer	-.3111633	.1032557	-3.01	0.003	-.5135408	-.1087858
educationstatus	-.1956343	.049806	-3.93	0.000	-.2932522	-.0980164
hhfulemploy	-.049902	.0880755	-0.57	0.571	-.2225267	.1227228
hhheadmaritalstatus	.0270862	.0773521	0.35	0.726	-.1245211	.1786935
_cons	-3.45337	.3473636	-9.94	0.000	-4.13419	-2.772549

Source: Researcher's computation; stata 14

Table-4

Marginal effects after probit
y = Pr(asset) (predict)
= .17251402

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
remitt~e*	.0238869	.02073	1.15	0.249	-.016739	.064513	.334603
hhhead~s*	.0069443	.0199	0.35	0.727	-.032063	.045951	.356497
hhfule~y*	-.0129488	.02321	-0.56	0.577	-.058437	.032539	.836744
educat~s	-.0499728	.01269	-3.94	0.000	-.074838	-.025108	1.7763
hhcomp~r*	-.0716628	.02118	-3.38	0.001	-.113177	-.030148	.164683
hhloca~n*	-.0926117	.01789	-5.18	0.000	-.127684	-.05754	.509757
lntoth~p	.0683051	.00793	8.61	0.000	.05276	.083851	11.5684

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Table-5

Probit regression — Number of obs = 2,101; LR chi2(8) = 128.62; Prob > chi2 = 0.0000; Log likelihood = -946.73867; Pseudo R2 = 0.0636

asset	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
int_remit	-.091194	.1041869	-0.88	0.381	-.2953966	.1130085
loc_remit	.2182344	.0903638	2.42	0.016	.0411247	.3953441
lntothhexp	.2768455	.0316842	8.74	0.000	.2147456	.3389454
hhlocation	-.3578561	.0701793	-5.10	0.000	-.495405	-.2203071
hhcomputer	-.3058353	.1034885	-2.96	0.003	-.508669	-.1030016
educationstatus	-.1897369	.0499579	-3.80	0.000	-.2876526	-.0918213
hhfulemploy	-.0511239	.088237	-0.58	0.562	-.2240651	.1218174
hhheadmaritalstatus	.0242668	.0775135	0.31	0.754	-.1276568	.1761903
_cons	-3.573088	.3508774	-10.18	0.000	-4.260795	-2.885381

Source: Researcher's computation; stata 14

Table-6

Marginal effects after probit
y = Pr(asset) (predict)
= .17166872

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
int_re~t*	-.022517	.02491	-0.90	0.366	-.071344	.02631	.149453
loc_re~t*	.0591433	.02593	2.28	0.023	.008318	.109968	.18515
lntoth~p	.070496	.00796	8.85	0.000	.054885	.086107	11.5684
hhloca~n*	-.0913718	.01788	-5.11	0.000	-.126424	-.05632	.509757
hhcomp~r*	-.0703229	.02123	-3.31	0.001	-.111941	-.028705	.164683
educat~s	-.0483147	.01269	-3.81	0.000	-.073184	-.023445	1.7763
hhfule~y*	-.0132302	.0232	-0.57	0.568	-.058697	.032236	.836744
hhhead~s*	.0061997	.01987	0.31	0.755	-.032739	.045138	.356497

Source: Researcher's computation; stata 14

Table-7

Probit regression — Number of obs = 2,101; LR chi2(6) = 582.39; Prob > chi2 = 0.0000; Log likelihood = -1047.9624; Pseudo R2 = 0.2174

remittance	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lntothhexp	.2127947	.0297018	7.16	0.000	.1545802	.2710092
hhlocation	-.0971967	.067042	-1.45	0.147	-.2285967	.0342032
hhcomputer	.043497	.0919639	0.47	0.636	-.1367489	.2237429
educationstatus	-.1020062	.046577	-2.19	0.029	-.1932954	-.0107169
hhfulemploy	-.3406838	.0829312	-4.11	0.000	-.5032259	-.1781416
hhheadmaritalstatus	1.289358	.0637634	20.22	0.000	1.164384	1.414332
_cons	-2.935551	.3315796	-8.85	0.000	-3.585436	-2.285667

Source: Researcher's computation; stata 14

Table-8

Marginal effects after probit

y = Pr(remittance) (predict)

= .30054091

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
lntoth~p	.0740474	.01028	7.20	0.000	.053904	.094191	11.5684
hhloca~n*	-.0338292	.02333	-1.45	0.147	-.079552	.011893	.509757
hhcomp~r*	.0152493	.03248	0.47	0.639	-.048405	.078904	.164683
educat~s	-.0354957	.01621	-2.19	0.029	-.06726	-.003732	1.7763
hhfule~y*	-.1245503	.03149	-3.96	0.000	-.186263	-.062837	.836744
hhhead~s*	.4575978	.02099	21.80	0.000	.416452	.498744	.356497

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Source: Researcher's computation; stata 14

CONCLUSION

The main objective of this study is to examine the impact of remittances on productive assets acquisition and a micro cross-sectional data was used in the estimation of the model. Specifically, the study is aimed at examining whether remittances impact significantly on productive assets acquisition, examining the type of remittances that contributes to the acquisition of productive assets and to determine if remittances significantly alleviate financial constraint of households in Nigeria. We concluded that there is a positive and insignificant effect of migrant remittances on propensity to acquire productive assets among Nigeria's households. Thus, remittances alleviate financial constraint. The model estimated was based on bivariate probit regression equation which saw remittances and productive assets as endogenous variables determined by some observed variables.

Diaspora incomes are fluid and require a targeted system by a well-meaning strategy to harness. Government must not allow remittances to diffuse in the economy or else its intended result will be hindered. Idea through Non-Governmental Organizations (NGOs) or a ministry to mobilize and galvanize the various groups in different countries to educate them on the usefulness of their remittances and also how it could be put to proper use. Nigerian government cannot sit back home at the destination to guide how the remittances could be used but can enhance usefulness by synergies at the country of origin. By so doing recipients of remittances could be guided on how best to allocate their income to productive purchases.

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