



# IMPACT OF MIGRANT REMITTANCE ON LABOUR SUPPLY IN NIGERIA

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## **Abstract**

Since 2014, remittances have surpassed official development assistance (ODA) and capital importation (FDI, FPI and other investments) ranking second only to oil as a major foreign exchange earner for Nigeria. However, Nigeria has suffered from labour market problems such as a shrinking labour force. While remittances often serve as an important source of income for households that stayed behind, this additional income may have negative effects on labour supply decisions. The thrust of this study is to ascertain the impact of migrant remittance inflow on labour supply in Nigeria. Specifically, the objectives are three-fold: To examine the impact of migrant remittance on labour supply across various work activities in Nigeria; to determine the impact of migrant remittance on different age brackets in Nigeria and to investigate the impact of migrant remittance based on gender distribution in Nigeria. Employing the 2019 General Household Survey and the Tobit estimation technique, the following conclusions were made. First, remittance inflow had an asymmetric effect on the different types of activities; it exerts a positive impact on farm and nonfarm activities and a negative impact on wage employment and apprenticeship. Second, remittance inflow exerts an asymmetric effect on different age groups. It raised the labour supply of the active labour force and diminished the labour supply of the elderly. Third, remittance inflow exerted an asymmetric impact on both male and female members of the labour force. However, the incremental effect on women is greater than that on men. The study recommends that appropriate policies can be implemented to integrate migratory remittances into Nigeria's development policies. The country's decision-makers can benefit more from the Nigerian migratory potential through the establishment of different means allowing Nigerian migrants to direct their transfers for investment purposes in their origin country to increase the per capita income and reduce the unemployment rate in the country.

Keywords: Remittance, Labour supply

## 1.0 Introduction

Labour supply is the total number of hours that an individual is capable and willfully supplies at a standard wage rate. Similarly, it refers to the number of hours' people are willing and able to supply at a given wage rate (Nwokoye, Igbanugo & Dimnwobi, 2020). Thus the supply of labour involves individuals seeking to be employed for a given an agreed amount of wage. Labour supply behaviour is important in terms of the government's attempt to reduce unemployment and enhance household welfare (Asiedu & Chimbar, 2020). Household labour supply has a well-defined relationship with intra household wellbeing. This argument is based on the assumption that household labour supply directly increases household production.

Apart from access to credit, marital status, educational attainment as well as income level, another major driver of labour supply in developing economies is remittance (Urama, Nwosu, Yuni & Aguegboh, 2016; Asiedu & Chimbar, 2020; Nwokoye et al, 2020). Remittance refers to the portion of migrant earnings which is sent back by a foreign worker to his or her home country (Nwokoye, et al, 2020, Fonta, Nwosu, Thiam & Ayuk, 2021). International remittances have contributed to the welfare of many developing countries by improving incomes and savings and by increasing the investments made by households in particular, and by countries in general (Nnyanzi, 2016). Remittance inflow is a non-market income transfer, and as such, can have significant impacts on the labour supply behaviour of members of remittance-receiving households. Remittances are an alternative to labour income, and may therefore affect labour force participation, reservation wages, and occupational choice, among other labour supply outcomes.

Remittances constitute an important source of funding for developing economies. During the COVID-19 crisis, remittance flows defied expectations and proved to be resilient. In 2020, remittances to lower middle-income country (LMICs) totaled \$540 billion and this is 1.6 percent less than \$548 billion in 2019 (World Bank, 2021). According to estimates, the drop was less than projected in April and October 2020. (World Bank, 2020a; World Bank, 2020b). It is significantly slower than the drop recorded during the global financial crisis in 2009.

In Sub-Saharan Africa, Nigeria is the highest recipient of remittance and the tenth-largest in the world (World Bank, 2021). Nigeria's remittance inflow stood at US\$2.3 billion in 2004 and an average of US\$17 billion in 2005-2007. Remittances flows from Nigerians in the Diasporas were US\$19 billion and US\$20 billion in 2008 and 2010 respectively. According to Nwokoye, Igbanugo and Dimnwobi (2020), the substantial increase experienced during this time was contingent on several reforms in the Nigerian banking sector which enhanced the confidence in the formal remittance channels as well as advancement in ICTs. It advanced to an average of US\$21 billion in 2011-2014 and relatively maintained the same value in 2015. Since 2014, remittances have surpassed ODA and capital importation (FDI, foreign portfolio investment and other investments) ranking second only to oil as a major foreign exchange earner for Nigeria (Nwokoye et al., 2020). Although remittance declined slightly in 2016, it grew by 11.7% from US\$19.636 billion to US\$22 billion in 2017 and increased to US\$24 billion in 2018 (World Bank, 2020c). As a result of the effects of COVID-19, which had a detrimental influence on migrant employment and earnings, it fell to US\$17 billion in 2020 before increasing to US\$19 billion in 2021. Although aggregate remittance inflow in Nigeria trails behind India, China, France and Germany, the remittance-GDP ratio of Nigeria (4%) is higher than that of all the countries highlighted above. This substantial inflow of remittance could be a source of capital augmentation for her production activities, which in turn, could enhance welfare in the country.

The responses to remittance inflow could have several implications on various labour activities (farm activity, nonfarm activity, wage employment and apprenticeship); Farm activity captures supply of labour in self-owned or family-owned farm or any agricultural engagement. Here farm is broadly conceptualized to include all agricultural engagements such as crop farming, fish farming, livestock farming, horticulture, etc. Nonfarm activity refers to all other businesses (such as retail, wholesale, services, manufacturing, construction, extraction, etc.) owned by the household. Wage employment captures all labour supply for paid work, whether in farm or nonfarm engagement. Apprenticeship refers to labour supply by a servant, mentee or apprentice to a master or mentor for which wage payment does not apply. The apprentice supplies the labour supply as a way of learning form skilled or qualified person for a specified period after which the apprentice will become self-dependent, age brackets; 18-34 years, 35-64 years and 65 years and above (representing active

population and elderly population) as well as gender distribution (male and female). It is against this background that this study examines the impact of migrant remittance on labour supply in Nigeria.

### **Objectives of the study**

- (a) To examine the impact of migrant remittance on labour supply across various work activities in Nigeria
- (b) To determine the impact of migrant remittance on different age brackets in Nigeria
- (c) To investigate the impact of migrant remittance based on gender distribution in Nigeria

## **2.0 Theoretical Framework**

The theoretical framework is anchored on the neoclassical theory of labour supply. The neoclassical theory of labour supply considers income and leisure as the source of individual utility. Labour supply is conceptualized as being derived from the desire to earn income. However, an individual must also consider the opportunity cost of foregone leisure before determining the unit of labour to be supplied given that one may have to ration his time between leisure and labour. Thus, individual supply, that is to say, the number of hours of work that a household is ready to supply for a given wage rate, corresponds to the optimized use of its time. It will work until the marginal utility of its labour tends to be exceeded by its marginal disutility, meaning that until the utility, in terms of income and other rewards, of an extra hour of work becomes lower than its cost in terms of additional fatigue, rest and missed leisure time.

Quibria (2018) argues that migrant remittance could exert asymmetric effect in the labour market as well as other economic outcomes. Quibria (2018) opine that the effect of remittance is both direct and indirect. Anchored on implicit loan theory (Poirine, 1997), remittance acts as investment funding which will enable firm and households raise the wage rate for labour. That is, the wage-paying agent's factor budget bulges leading to increase in the wage rate. This triggers rise in labour supply. This effect is the direct effect. On the other hand, remittance signals successful migration away from the origin country. This immediately indicates reduction in labour supply which raises the wage rate. As wage rate rises, the labour supply rises afterwards in search of new equilibrium at a higher equilibrium quantity of labour (Van Ophem, Hartog & Vijverberg, 2015; Tummers & Woittiez, 2019).

Dealing with the issue of remittance-labour relations is more straightforward in macroeconomics than in microeconomics (Van Ophem et al 2015). For microeconomic analysis, we focus on the labour supply choices made by each household. This, as opined by McFadden (1984), will require discrete choice. Now suppose  $U(D,h)$  denotes agent's utility of real disposable income, and hours of work, then it is expected that:

$$U(D,h) = \alpha(D,h) + \beta(D,h) \tag{3.2}$$

Where  $\alpha(D,h)$  is a positive deterministic term that represents the mean utility across observationally identical agents and  $\beta(D,h)$  is a random term that is not correlated with the structural term,  $\alpha(D,h)$ , and with cumulative distribution function  $\exp(-\exp(-x))$  defined as real  $x$ . In addition, we expect that  $\beta(D,h)$  and  $\beta(D',h')$  are independent for  $\beta(D,h) \neq \beta(D',h')$ . The budget constraint is given by:

$$D = f(hw, I_R, I_o) \tag{3.3}$$

Where  $w$  refers to wage,  $I_R$  refers to non-labour income from remittance and  $I_o$  refers to other non-labour income.  $f(.)$  is the function that transforms gross income into after tax household income. Plugging Equation 3.3 into Equation 3.2 yields:

$$\tilde{U}(h) = U(f(hw, I_R, I_o), h) \tag{3.4}$$

$$\tilde{U}(h) = \alpha(f(hw, I_R, I_o), h) + \beta(hw, I_R, I_o, h) \tag{3.5}$$

$$\tilde{U}(h) = \eta(R) + \phi(R) \tag{3.6}$$

Where  $\eta(R) = \alpha(f(hw, I_R, I_o), h)$  and  $\phi(R) = \beta(hw, I_R, I_o, h)$ . Notice that in Equation 3.6, income from wages is suppressed for simplicity.

Following McFadden (1984) and Tummers and Woittiez (2019), the probability that an agent shall supply  $h$  hours of work, given  $D$ , the budget constraint and the wage rate, remittance inflow and other non-labour income is:

$$p(h) = P(\tilde{U}(h) = \max_{x \in D} \tilde{U}(x)) = \frac{\exp(\eta(R))}{\exp(\eta(0)) + \sum_{x \in D} \exp(\eta(x))} \tag{3.7}$$

Equation 3.7 indicates that the probability of remittance inducing labour supply lies between 1 and 0. It depends on the choices made by households after receiving the remittance. In

other words, the quantity of labour supply is not directly predictable, but implicitly contingent on choices made by remittance recipients in the origin country. In other words, it is only empirical testing that will unravel the puzzle. This leads us to the next section where we specify the model for empirical estimations.

### **Empirical Literature Review**

Mughal and Makhoulf (2013) studied the effects of foreign and internal remittances on Pakistan's labour market using the 2007-2008 Household Integrated Economic Survey, Probit as well as Propensity Score Matching (PSM) techniques to examine the impact on labour participation, the quantity of work and activities of working as well as non-active members of remittance-receiving households. The authors found that both foreign and domestic remittances tend to lower the labour supply of the recipient households. The impact is higher among women and the young. The impact is more pronounced in rural areas. In addition, foreign remittances increase the likelihood of household members attending middle school. They also examined the quantity of labour supplied by the remittance recipient households. Results showed little difference in the number of months and days worked between the households receiving and not receiving remittances.

López-Feldman and Escalona (2016) examined the effect of remittance and labour supply in Mexico using the probit regression model. The authors analyzed female and male responses separately and the authors found that the income effect of remittances dominates the labour allocation decisions made by men: the probability of participating in the labour market and the total number of hours that they work decrease with remittances. Furthermore, the study found no effect of remittances on the number of hours that women allocate to the different productive activities, the results for men suggest that remittances are contributing to a trend in which Mexican rural inhabitants increasingly move away from agriculture or nature-based activities.

Urama, Nwosu, Yuni and Aguegboh (2016) investigated the impact of remittances on labour supply in Nigeria using propensity score matching (PSM) technique and a log-linear regression model, with data from the 2013 Nigerian General Household Survey. The PSM results showed that for the entire sample, the difference between the average amount of labour supplied per week by those that receive remittances and the amount they would have supplied without remittances is insignificant. The marginal impact analysis also shows that

ceteris paribus, the average labour supply for all recipients is inelastic to remittances. The results from the sub-group analysis, however, show that receiving remittances negatively affects the labour supply of the self-employed in agriculture, teenagers and the elderly.

Salman (2016) examined the influence of remittances on self-employment status and welfare among recipient Nigerian households using data from Migration and Remittances Household Surveys conducted by the World Bank in 2009 and 2010. The study concludes that remittance inflows into Nigeria hurt self-employment decisions among recipient households during the study period; most recipients did not invest the received remittances in income-generating activities. However, recipients' welfare status improved considerably compared to non-recipient households.

Dávalos, Karymshakov, Sulaimanova and Abdieva (2017) examined whether remittances from international migration impact the occupational choice of left-behind youth in Kyrgyzstan. Labour supply was analyzed both at the extensive and intensive margins using cross-sectional data for 2011. To overcome endogeneity concerns, an instrumental variable approach was implemented. The study found that migration, rather than remittances, pushes the left-behind youth to become unpaid family workers. This is explained by the substitution effect as the youth left behind are called upon to replace migrant labour. Moreover, this effect is heterogeneous - female youth are more inclined to become unpaid family workers both at the extensive and intensive margins.

Parajuli (2017) examined the impact of receiving remittances on labour supply decisions of working-age adults (16- 60) and the elderly population (61-75) as well as its effects on child labour in Nepal using cross-sectional data from a household survey in 2011. An instrumental variable approach was used to address concerns of endogeneity in the model and the study found no significant effects of remittances on adult and elderly labour supply. However, remittances are associated with a significant reduction in instances of child labour but not the intensity of child labour, as measured by hours worked by children.

Vadean, Randazzo and Piracha (2017) analyzed the role of remittances on labour supply and the activity of household members left behind, by explicitly distinguishing between different types of self-employment. The study found that remittances received by households in Tajikistan decrease the probability of wage employment and increase that of small-scale self-

employment activities of men staying behind, without affecting the number of job-specific hours worked. Any positive effect on economic development would be, however, limited, as self-employment is in rather small-scale activities that do not generate a regular income stream.

Azizi (2018) investigated the impacts of workers' remittances on human capital and labour supply by using data for 122 developing countries from 1990 to 2015. The study found that remittances raise per capita health expenditures and reduce undernourishment prevalence, depth of food deficit, the prevalence of stunting, and the child mortality rate. Remittances also raise school enrollment, school completion rate, and private school enrollment. Although there is no difference in the impact of remittances on the health outcome of boys and girls, remittances improve the educational outcome of girls more than the educational outcome of boys. Further, remittances decrease the female labour force participation rate but do not affect the male labour force participation rate.

Nwokoye, Igbanugo and Dimnwobi (2020) examined the effect of remittances inflow to Nigeria on labour force participation in the country using the propensity score matching and Heckman two-step benchmark model. With data sourced from Nigeria's 2015/16 General Household Survey, results revealed that receipt of remittances increased both labour force participation for non-farm economic activities and labour force participation in urban areas, perhaps as a result of investing received remittances in new business ventures. In addition, remittance inflows raised the economic activeness of the younger members of the labour force who constituted a greater percentage.

Asiedu and Chimbar (2020) examined how remittances, an outcome of labour mobility, affect labour market activities in Ghana using detailed household and individual-level data. First, they found a strong negative association between household remittance-receiving status and individual labour supply decisions using instrumental variable estimation techniques. Second, they found the depressing effect of remittances on labour supply decisions to be much stronger in rural areas. Rural women who reside in remittance-receiving households are less likely to be in the labour force compared with those who do not reside in such households. Remittances have very little impact on labour supply decisions in urban areas. Their findings support that remittances can exacerbate long-term poverty reduction in rural



areas through lower labour force participation, and as such rural-based and gender-based interventions may be needed to help redirect remittance income.

Dey (2021) examined the impact of remittances on the labour market decisions of left behind adult family members in rural households in India. Using both selectivity and endogeneity corrected models, the results found evidence of a dependency effect wherein individuals belonging to remittance-receiving households are less inclined to participate in the labour market. These effects are much stronger in the case of international remittances. Incidentally, the reduction in work participation was found to be larger for males than females. While, on the one hand, domestic remittances were observed to increase the intensity of labour supplied by households, international remittances, on the other hand, were found to be lowering hours of work done by left behind family members. Further, domestic remittances increase the proportion of labour supplied to self-employment activities in agriculture; international remittances, on the contrary, were found to be pushing workers into non-agricultural activities. The differences in the impact of domestic and international remittances on labour market participation and work intensity can be attributed to the differences in the absolute size of remittances available per capita from the two alternate sources while unobservable household characteristics and locational factors can explain the variations in intra-household labour allocation across activities

Habib (2022) appraised the implications of remittances on labour supply and the study concluded that an increase in remittances significantly reduces the demand for employment and therefore increases the unemployment rate. Put differently, the study found that an increase in remittances clearly reduces the labour supply and thus increases the level of unemployment in the case of an ageing population.

### **3.0 Methodology and Model Specification**

The main thrust of this work is to investigate the impact of migrant remittance on labour supply. We focused on labour supply based on activity type, gender and age distribution. Labour supply is defined to be contingent on wages and migrant remittance. However, this is a simplified representation of the labour supply model. In reality, there are several other factors that could influence the supply of labour by households. Suppose we indicate these other variables as  $X$ . Suppose we further denote worker's remittance as  $REM$  and proxy

wages with DI which is disposable income. The model of labour supply and migrant remittance nexus would be specified in the context of Tobit model as follows:

$$z_i^* = \alpha'_z x_i + \varepsilon_{zi} \tag{3.8}$$

Where  $z_i^*$  is the dependent variable which truncates household labour supply of any given category from 15 years and above. The GHS documents labour supply for persons who are 5 years and above. However, for the purpose of this study, we are only interested on those who are within the legal labour age. With the censorship, we exclude all cases of child labour in our study.  $x_i$ ,  $\alpha'_z$  and  $\varepsilon_{zi}$  are a vector of explanatory variables, vector of coefficients, and independently and normally distributed error term respectively. Now suppose R indicates the threshold that differentiates persons within legal labour age from those below the legal labour age. From Equation 3.8, the dependent variable, labour supply, is specified as:

$$z_i = z_i^* \text{ if } z_i^* \geq R \tag{3.9}$$

and

$$z_i = 0 \text{ if } z_i^* < R \tag{3.10}$$

Also, the probability density function for households that supply labour and the standard normal cumulative function for households that do not supply labour are specified in Equations 3.11 and 3.12 respectively:

$$f(z_i / z_i^* \geq R) = \frac{f(z_i)}{p(z_i^* \geq R)} = \frac{\frac{1}{\sigma} \gamma\left(\frac{z_i^* - \alpha'_z x_i}{\sigma}\right)}{\Omega\left(\frac{\alpha'_z x_i}{\sigma}\right)} \tag{3.11}$$

$$p(z_i^* < R) = \Omega\left(\frac{\alpha'_z x_i}{\sigma}\right) \tag{3.12}$$

Also the log-likelihood function is specified as:

$$Logl = \sum_{z_i^* < R} \ln\left(1 - \Omega\left(\frac{\alpha'_z x_i}{\sigma}\right)\right) + \sum_{z_i^* \geq R} \ln \frac{1}{\sigma} \gamma\left(\frac{z_i^* - \alpha'_z x_i}{\sigma}\right) \tag{3.13}$$

Notice that the Equation 3.13 is the summation of the probability functions for both households that supply labour and those that do not.

### Description of Variables

Variable	Symbol	Description	Mean Value
Remittance	Rem	The log of amount received as remittance	4.91
<b>Demography</b>			
Household size	HH_size	The number of persons per household	5.50
Marital status	mar_stat	This is a categorical variable where single takes 0, married takes 1, divorced takes 2.	0.98
Mean years of education	edu_yrs	The number of years spent in school, from nursery to tertiary school	5.5
Literacy	Literacy	Reported literacy is denoted 1 while otherwise is 0.	0.68
<b>Socio-economic</b>			
Medical expenses	med_exp	The log of amount spent on medicals	3.05
Asset ownership	owner_assets	The log of worth of assets owned by household	4.51
Access to credit	access-credit	If household accesses credit within the past 12 months preceding the survey, it is denoted 1, otherwise we assign 0	0.12
<b>Shocks</b>			
Fall in the price of agric product	price_fall	If a farmer experience fall in the price of its product, we assign 1, otherwise we assign 0	0.21
Loss of farm land	loss_land	If a farmer experience loss of farmland, we assign 1, otherwise we assign 0	0.18
Job loss	job_loss	If a member of household losses job, we assign 1, otherwise we assign 0	0.09
Failure of nonfarm business	nonfarm_failure	If an owner of a nonfarm business experiences business failure, we assign 1, otherwise we assign 0	0.17
Failure of farm business	farm_failure	If a farmer experience failure, we assign 1, otherwise we assign 0	0.24
Death of sender of remittance	death_rem_sender	If a sender of remittance dies, we assign 1, otherwise we assign 0	0.02
<b>Socio-political</b>			
Kidnapping and insecurity	kidnap_insecurity	If a respond indicates that insecurity or kidnapping is affecting their activity, we assign 1, otherwise we assign 0	0.78

Source: Researchers' Computation and Compilation (2022)

## 4.0 ANALYSIS OF RESULT

### Endogeneity Test

Null: Variables are exogenous			Remarks
	Score/coefficient	p-value	Do not reject H <sub>0</sub>
Durbin, $\chi^2$	1.3609	0.1744	
Wu-Hausman, F-stat	1.2248	0.2226	
Robust score, $\chi^2$	0.3062	0.7722	
Robust regression, F-stat	1.3293	0.1849	

Source: Estimated Using Stata 16

**(a) Objective One: Impact of Diaspora Remittance on Labour Supply across Various work Activities**

**Table 4.10: Remittance and Labour Supply Across work Activity Types**

	Farm		Nonfarm		Wage		Apprenticeship	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
remittance	0.011	0.002	0.007	0.004	-0.014	0.006	-0.024	0.007
<b>Demographics</b>								
HH_size	0.200	0.040	-0.132	0.020	0.079	0.046	0.029	0.007
mar_stat	0.056	0.024	0.037	0.022	0.086	0.043	-0.013	0.006
edu_yrs	-0.365	0.068	0.241	0.035	0.136	0.017	-0.052	0.011
Literacy	-0.285	0.044	0.188	0.022	0.087	0.009	-0.039	0.007
<b>Economic Factors</b>								
med_exp	-0.021	0.011	-0.014	0.006	0.022	0.013	0.004	0.003
owner_assets	-0.032	0.016	0.061	0.024	-0.042	0.014	-0.006	0.004
access-credit	0.197	0.023	0.130	0.012	-0.045	0.003	-0.025	0.003
<b>Shocks</b>								
price_fall	-0.007	0.002	0.005	0.002	0.007	0.009	0.001	0.001
loss_land	-0.383	0.059	0.253	0.030	0.117	0.012	0.052	0.009
job_loss	0.028	0.008	0.019	0.017	0.035	0.014	0.011	0.004
nonfarm_failure	0.139	0.015	-0.092	0.007	0.029	0.002	0.018	0.002
farm_failure	-0.034	0.010	0.022	0.006	0.052	0.017	0.008	0.007
death_rem_sender	0.377	0.073	-0.249	0.037	0.145	0.018	0.054	0.012
<b>Socio-political</b>								
kidnap_insecuroty	-0.052	0.021	-0.034	0.011	-0.041	0.011	-0.009	0.004
C	0.197	0.023	0.130	0.012	0.045	0.003	0.025	0.003

Source: Estimated Using Stata 16

**(b) Objective Two: Impact of Remittance on Labour Supply of Different Age Brackets**

**Table 4.11: Summary of Estimates of Impact of Remittance on Labour Supply Based on Age**

Age	18-34 Years		35-64 Years		65 Years +	
Explanatory Variables	Coef	Std. Err	Coef	Std. Err	Coef	Std. Err
remittance	0.616	0.131	0.281	0.073	-0.025	0.008
<b>Demographics</b>						
HH_size	0.404	0.075	0.148	0.033	0.028	0.008
Mar_Stat	0.133	0.112	0.044	0.035	0.111	0.101
Edu_yrs	0.057	0.005	0.078	0.008	-0.060	0.008
Literacy	0.050	0.018	0.242	0.105	-0.015	0.008
<b>Economic Factors</b>						
Med_exp	-0.067	0.016	-0.184	0.055	-0.922	0.362
Owner_assets	0.869	0.361	0.060	0.026	-0.002	0.001
access_credit	0.309	0.029	0.083	0.010	-0.056	0.008
<b>Shocks</b>						
price_fall	0.109	0.009	0.074	0.008	0.063	0.008
loss_land	-0.003	0.000	-0.193	0.025	0.049	0.013
job_loss	0.082	0.074	-0.522	0.206	-0.016	0.008

Age	18-34 Years		35-64 Years		65 Years +	
Explanatory Variables	Coef	Std. Err	Coef	Std. Err	Coef	Std. Err
nonfarm_failure	0.063	0.028	-0.281	0.099	0.012	0.008
farm_failure	0.236	0.028	-0.042	0.006	-0.045	0.008
death_rem_sender	0.048	0.005	-0.093	0.012	0.049	0.008
<b>Socio-political</b>						
kidnap_insecurity	-0.056	0.006	-0.096	0.013	-0.047	0.008
C	1.875	1.094	0.334	0.239	.009	.008

Source: Estimated Using Stata 16

**(c) Objective Three: Impact of Remittance on Labour Supply based on Gender Distribution**

**Table 4.12: Summary of Estimates of Impact of Remittance on Labour Supply Based on Gender**

Gender	Male		Female	
	Coef	Std. Err	Coef	Std. Err
Remittance	0.048	0.007	0.162	0.019
<b>Demographics</b>				
HH_size	0.065	0.017	0.063	0.007
mar_stat	0.113	0.019	-0.050	0.010
edu_yrs	0.261	0.022	0.151	0.030
Literacy	0.151	0.017	0.056	0.009
<b>Economic Factors</b>				
med_exp	0.024	0.064	-0.053	0.010
owner_assets	0.067	0.001	0.151	0.029
access_credit	0.072	0.024	0.251	0.049
<b>Shocks</b>				
price_fall	0.027	0.045	-0.045	0.012
loss_land	-0.026	-0.050	-0.045	0.012
job_loss	0.040	0.071	-0.146	0.035
nonfarm_failure	-0.031	0.005	-0.061	0.007
farm_failure	0.033	0.094	0.050	0.010
death_rem_sender	0.052	0.019	-0.051	0.010
<b>Socio-political</b>				
kidnap_insecurity	-0.080	0.018	-0.050	0.010
C	-0.078	-0.182	0.050	0.010

Source: Estimated Using Stata 16

**Discussion of Result/ Findings**

One of our findings shows that diaspora remittance could boost labour supply for farm and nonfarm activities on one hand and reduce labour supply for wage employment and apprenticeship. Remittance inflow is a non-market income transfer, and as such, can have significant impacts on the labor supply behavior of members of remittance receiving households. Remittances are an alternative to labor income, and may therefore affect labor force

participation, reservation wages, and occupational choice, among other labor supply outcomes. Particularly, the income transfer from remittance inflow could serve as a source of funding for both farm and nonfarm activities. Households that receive remittance could invest it in purchasing more farmlands and in procuring more planting seeds. This, no doubt, would lead to supply of more labour hours to farm operations. One of the most limiting factor in farm activity is access to land. As noted by Echebiri and Mbanasor (2018), farmer's labour supply may depend on the extent of land he can access. Remittance inflow could empower a farmer to acquire more lands and this will naturally increase the supply of labour since more labour hours are needed to farm on larger farmlands.

In addition, increased access to funding could imply increase access to farm inputs such as seedlings. If a farmer procures more seedlings, then it is expected that he will supply more labour both for planting, farm care and farm harvest. With more funding, farmers who will be idle during off-season could afford investment in irrigation which will empower them to supply more labour during off seasons. Fakayode, Babatunde and Ajao (2018) identify seasonality and lack of access to irrigation facilities as major constraints for farm engagement. Irrigation provides opportunity for all-year-round farming which implies that farmers will supply more labour to meet up with the more-labour opportunity that irrigation provides.

In the same vein, labour supply for nonfarm activities received a boost from diaspora remittance. Most farmers see nonfarm engagement as a buffer to farming. Farming is susceptible to shocks arising from farm failures, price shocks, boom shocks, climate vagaries, and a host of other factors that could be external to the farming community. Shilpi and Emran (2016) also noted that nonfarm businesses are established to have the farmer engaged during off-seasons. They further explain that nonfarm activity provides income support to farmers at the time that farm income is lean, especially, during planting season when a farmer does not earn. Thus, remittance inflow could embolden a household to establish nonfarm businesses to support their farming venture. Buera and Kaboski (2020) also emphasized that there is a recognition that structural change favouring shift from farm to nonfarm activities is multidimensional and supporting the current attempt in literature to incorporate many faces of dualism and their interactions: home production-market exchange, formal-informal, tradable-nontradable, skilled-unskilled, low productivity, high productivity etc. as part of the process of structural change. Thus, there is ongoing shift of emphasizes that seems to be in favour of nonfarm activities. Ranis and Stewart

(2017) noted that there is expansion of nonfarm activities in rural communities which is reflective of a wider shift from agriculture to manufacturing and service. Increase in remittance receipts could embolden economic agents to inadvertently reinforce this shift which will increase labour supply.

On the other hand, our findings show that the effect of remittance inflow on wage employment and apprenticeship is asymmetric to that of farm and nonfarm. Increase in diaspora remittance reduces labour supply for wage employment and apprenticeship. King (2012) observes that non-market transfer income supports capital accumulation drive of employees which in turn could bolster emergence of entrepreneurial ventures. When persons who are in paid employment receive remittances, they have two broad spending choices to make, whether to spend the money on consumption or investment, or what proportion to spend on consumption and investment. The investment option entails either financial investment on stocks and bonds, or using the money for startups. The decision to invest in startups implies that they may quit from paid jobs while increasing labour supply in nonfarm ventures. In the same vein, wage-leisure literature also demonstrates increasing income and wages will naturally raise the demand for leisure thereby depressing labour supply. Remittance inflow acts as an implicit wage and could precipitate substitution effect. As remittance increases, persons in paid employment may substitute labour supply with more leisure.

Another important factor is reservation wage. This is the benchmark wage that a worker expects for paid employment. If a worker is offered a wage that is less than the reservation wage, he will reject the offer. Remittance inflow will raise the reservation wage of low-income earners. This may reduce the number of new entrants into paid employment. It will also increase the number of exits from paid labour. The exit will be seen among low-income earners who due to remittance receipt have adjusted their reservation wage upwardly. In the same vein, increase in remittance inflow may reduce entry into apprenticeship as well as exit from apprenticeship. Most apprentices go into apprenticeship due to lack of funding. Thus, the expectation is that at the end of the agreed number of years, the master will “settle” the apprentice with startup capital. Remittance inflow could reduce labour supply for apprenticeship through two channels. First, it reduces the number of persons that enter into apprenticeship. Instead of going into apprenticeship for an average period of four years, persons who receive remittance may prefer to either startup a business via “learn by doing”, or learn the business for a few months through attachments and

then float one's venture with the received fund. Second channel is through exit or quit. Apprenticeship is riddled with uncertainties with over 40% of apprentices experiencing non-settlement. Receipt of remittance could trigger apprentices to shorten their contract period and break away to start their own venture. Once they have mastered the business craft, they can start up with their capital raised through remittance receipt, instead of waiting for several years of unknown outcome.

The results we obtained also show that remittance receipts increase the labour supply of active population (persons within the age bracket of 18 -64 years) while diminishing the labour supply of persons above the age of 64 years. The transmission effect channels for this dichotomy follow the earlier discussions. However, Posso (2012) identified Joneses effect as another factor driving labour supply of those within active population. The Joneses effect is triggered by the testimonies of those who migrated. When the left-behind persons in the community sees that the migrant households are enjoying remittance receipts, there is tendency for such persons to increase their labour supply, in other to raise money to be able to migrate and starting sending money as well. This desire to be like others is called Joneses effect. However, the response of the elderly is asymmetric to that of the active population. The elderly sees remittance inflow as social security. Thus, elders who have consistent remittance inflow would prioritize rest and leisure to working. Also, some persons send their children abroad in other to guarantee remittance receipt at their old age. In addition, the estimates suggest that the labour supply of youth labour force in response to remittance inflow is higher than that of non-youths labour force.

Contrary to Rodriguez and Tiongson (2001) findings that migrant remittances reduce the labour supply of women relative to men. Our findings show that remittance inflow increases labour supply of both men and women. However, the incremental change in labour supply is higher for women than men. The difference between Rodriguez and Tiongson (2001) and our findings could stem from two fronts. First, Rodriguez and Tiongson work was carried out in Philippine where the cultural relatives do not narrow out. Second, Rodriguez and Tiongson work was done in 2001 which is more than two decades ago. There have been a lot of structural changes in labour market participations, especially, as relates to women. Essentially, our finding shows that it pays to finance women since women are more likely to start new businesses with smaller capital than men (Ezenekwe et al, 2016). Overall, remittance inflow supports labour supply for



both men and women and could be key source of development finance for developing economies.

#### **4.0 Conclusion**

The thrust of this study was to ascertain the impact of migrant remittance inflow on labour supply in Nigeria. The study estimated Tobit models using Nigerian household survey of 2019 with 4976 sample size. The Tobit estimation censored labour supply by nonmembers of labour force and obtained estimates for only members of the labour force. From the results obtained and analyzed, the following conclusions could be made. First, remittance inflow has asymmetric effect on the different types of activities; it exerts positive impact on farm and nonfarm activities and exerts negative impact on wage employment and apprenticeship. Second, remittance inflow exerts asymmetric effect on different the active labour force and the elderly; it raises labour supply of the active labour force and diminishes the labour supply of the elderly. Third, remittance inflow exerts symmetric impact on both male and female members of the labour force. However, the incremental effect on women is greater than that of men.

#### **Recommendations**

1. Our study established that remittances exert positive impact on farm and nonfarm activities in Nigeria. This would mean that policies and agencies seeking to promote farm and non-farm employment will have to be more pro-active. Thus, a stimulating package of rural re-generation combined with policies of technical guidance regarding product choice, design and marketing are necessary to fructify the goal of employment diversification in Nigeria particularly in rural areas which for so many years has failed to take off in a substantive way.
2. Our study found that a remittance stimulates male and female labour force participation. We recommend that gender-based interventions may be needed to empower households to deepen their efforts and redirect remittances to productivity activities.
3. **Integrate migratory remittances into Nigeria's development policies:** The country's decision-makers can benefit more from the Nigerian migratory potential through the establishment of different means allowing Nigerian migrants to direct their transfers for investment purposes in their origin country to increase the per capita income and reduce the unemployment rate in the country.

4. **Rule-Based Policy Thrust:** The Nigerian government may consider the Philippine approach or the Korean formula. One way Nigeria may increase inflows is to require mandatory remittances by those working abroad, as in the case of Philippines. The Philippine government, for example, through Executive Order No. 857 (1982), required workers employed overseas to remit at least seventy percent of their monthly salaries through national banks. Proof of compliance with this order was required before the worker's annual passport could be renewed. Korea, however, sought to achieve the same result using a more liberal but high committal approach. The Korean government works closely with Korean companies through its program called “project package”, whereby the government assists Korean companies in winning job contracts abroad. In return, the companies directly deposit a portion of their workers' salaries into Korean banks. Furthermore, the Korean government usually does not recruit workers to stay abroad for periods exceeding one year and, therefore, is able to keep worker ties to the country strong, further promoting maximum remittance inflows.

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