



**EFFECT OF LIVELIHOOD DIVERSIFICATION ON RURAL MIGRANTS' HOUSEHOLD INCOME IN SOUTH-WEST NIGERIA**

<sup>1</sup>Ajiboye, A. J., <sup>2</sup>Ogunniyi, G., <sup>3</sup>Akinsulu, A. A. <sup>1</sup>Olarinre, A. A. and <sup>4</sup>Bamisaieye, O.

<sup>1</sup>Department of Agricultural Economics, University of Ilesa, Osun state, Nigeria.

<sup>2</sup>Department of Agriculture, University of Ilesa, Osun state, Nigeria.

<sup>3</sup>Department of Agricultural Economics and Extension,  
Tai Solarin University of Education, Ijagun Nigeria.

<sup>4</sup>Department of Agricultural Economics and Farm Management,  
Federal University Oye-Ekiti, Nigeria

**Corresponding Author's Email:** gbadebo\_ogunniyi@unilesa.edu.ng, **GSM:** 08060949676

**ABSTRACT**

The study examined the effect of income diversification on household income among rural migrant households in Southwestern Nigeria. Primary data were collected from 413 respondents selected through a combination of purposive and random sampling techniques across Ekiti, Osun, and Oyo States. Data generated through the administration structured questionnaire which is the main instrument of the study. Descriptive statistics were used to analyze respondents' socio-economic characteristics, while the Simpson's Index of Diversification measured the extent of income diversification. The Two-Stage Least Squares (2SLS) regression technique was employed to estimate the impact of income diversification on per capita household income. The results showed that 72.25% of respondents were male, indicating the predominance of male-headed households in rural areas. About 76.75% were first-generation migrants, and approximately 85% had resided in their current locations for at least 15 years, with an average duration of 29.51 years. First-stage regression results identified farm size, farm income, non-farm income, off-farm income, remittance and household asset value at 1% level of significance as strong instruments for income diversification. The study concludes that income diversification and remittance inflows significantly increase per capita household income. On this note, it is thus recommended that rural development policies should adopt a multidimensional approach that enhances access to non-farm and off-farm employment opportunities to improve migrant household welfare.

**Keywords:** Rural, Migrants, Livelihood, Diversification, Household, Income

**INTRODUCTION**

Rural-rural migration has increasingly been associated with inequalities in access to economic resources, infrastructure, and development opportunities across rural regions (Chand, 2012; Ogunniyi, *et al* 2018;). Disparities in land quality, employment prospects, and market access often compel households to relocate in search of better livelihood opportunities. Unlike rural-urban migration, intra-rural migration generally involves shorter distances and lower financial costs. As a result, it is more accessible to poorer household groups with low levels of education and limited productive assets. For many of these households, migration within rural areas is not merely a movement of residence but a crucial coping strategy to stabilize livelihoods and adapt to climatic, environmental, social, and economic changes. It also serves as an important mechanism for overcoming shortfalls in agricultural income and rural employment (Deotti and Estrus, 2016: Ajiboye *et al.*, 2025).

In recent years, migration has been increasingly endorsed as a potential tool for poverty reduction and sustainable human development. This recognition stems from the observation that impoverished rural residents may prefer migrating to larger villages and small towns rather than major urban centers. Such preference is often explained by lower migration costs, the ability to maintain social ties with origin communities, reduced job-search expenses, and a higher probability of securing employment suited to their qualifications (Christiaensen and Todo 2014: Omolehin and Ajiboye, 2025). In this context, rural-rural migration represents a pragmatic and strategic response to structural constraints within agrarian economies.



A notable characteristic of migrant households is their engagement in multiple livelihood activities instead of reliance on a single income source. Livelihood diversification refers to the process by which households and individuals construct a portfolio of activities and social support mechanisms to improve well-being and ensure survival. It also involves the deliberate pursuit of diverse income-generating activities to reduce dependence on one source of earnings (Rigg *et al.*, 2016). Households with three or more income sources are typically considered more diversified than those with only one or two (Chand, 2012). This approach has gained considerable attention because of its potential to enhance resilience, increase income, and improve overall welfare.

The motivations for livelihood diversification are often categorized into push and pull factors (Ellis, 2000). Push factors include risk reduction strategies, diminishing marginal returns to family labor under land constraints caused by population growth and land fragmentation, liquidity shortages, and rising production costs. These pressures compel households to seek alternative or supplementary income sources. Pull factors, on the other hand, arise from emerging opportunities such as higher wage rates in non-farm activities, favorable rural business environments, technological advantages, and complementarities among activities such as livestock integration, crop processing, storage, and transportation of farm produce. Together, these forces shape the livelihood strategies of migrant households.

Livelihood outcomes, however, are not uniform. They may be positive, negative, or neutral (Tanle, 2015). Positive outcomes are reflected in improved food security, enhanced employment stability, asset accumulation, and increased per capita income. Negative outcomes indicate declining household income, while neutral outcomes suggest no significant change in welfare. Evaluating these outcomes is essential to determine whether diversification genuinely improves migrants' living conditions.

Examining the activities of rural migrants also challenges the common misconception that rural households are homogenous and solely dependent on farming. Rural populations display significant heterogeneity in income sources and livelihood strategies (Ajiboye *et al.*, 2025). Despite growing scholarly attention to rural livelihoods, limited empirical evidence exists on how engagement in multiple livelihood activities specifically affects the per capita income of rural migrant households. Policy interventions have largely focused on national averages and broadly defined rural groups, often overlooking migrant households who face additional challenges of social and economic integration in host communities.

Although there is consensus that most rural migrants participate in diverse livelihood activities (Tanle, 2015), there remains limited evidence on whether such diversification translates into improved income levels. In particular, scanty attention has been given to the issue of livelihood income activities among rural migrant households in Southwestern Nigeria. This study therefore seeks to provide empirical evidence on the relationship between livelihood diversification and per capita household income among rural migrants in the region.

## **METHODOLOGY**

### **Study Area**

The research was conducted in Nigeria's southwestern geopolitical zone, which spreads between latitudes 6°21' and 8°37' N and longitude 2°31' E and 2°31' (NBS, 2017). It has a land area of 114,271 square kilometers, representing 12% of the country's land mass. The zone which comprises 6 states, namely; Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo is made up of four different sub-ecologies, namely; derived savannah, moist and dry lowland, mangrove forests, and swamps. It comprises six states, namely; Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo. A large portion of Osun, Oyo, and Ekiti are covered with derived savannah while Lagos, Ondo, and Ogun states have a sizeable portion of their lands covered with tropical rainforests with swamps along the coastline zone.

The main source of income for the people living in this zone is rainfed agriculture which is characterized by arable cropping with cassava, maize, and yam as the main crops. Tree crops like cocoa, cashew, oil palm, and kolanut are commonly grown. The zone is also well-known for business and trade in addition to farming, which is the main economic activity in rural villages. There are many micro,



small, and medium-sized businesses in the area that are involved in production, manufacture, and agro-allied enterprises.

**Sampling Procedure and Sample Size**

A multistage random sampling technique was used to select the respondents for the study. Ekiti, Osun and Oyo states were purposively selected from the six states of the South-west, Nigeria. Twenty percent of the rural LGAs were selected in the respective states. Ten percent of wards in each LGA were randomly selected where sampling frame was created for migrant households from which 40% of households on the sampling frames were selected to arrive at 413 respondents. The descriptive statistics and two-stage least square regression were used to analyse the data collected.

**Data Collection**

Structured questionnaire was used to collect data on respondents’ generational status, duration of stay, household assets, livelihood activities, income from various activities, constraints to livelihood diversification and other important variables relevant to the study.

**Data Analysis**

Data for the study were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequency, percentage and were used while the inferential statistic used were Simpsons index of diversity and expenditure simultaneous equation.

**Measurement of overall income diversity.**

**Simpsons Index of Diversity**

The index encompasses both the count of income sources and the significance or uniformity of these sources, as articulated by Minot, Epprecht and Trung (2006). It is calculated using the following formula:

$$d = 1 - \sum^n P_i^2 \tag{1}$$

where  $d$  = Simpson’s index of diversification.

$n$  = number of livelihood activities.

$P_i$  = proportion of income generated from each activity.

$i$  = number of income sources indexed by  $i$ .

This metric of income diversification ( $d$ ) quantifies the variety of income sources numerically and ranges between zero and one. A value closer to one indicates greater diversity in household income, with a diversification index of one signifying extreme diversification. The index is formulated by evaluating each income source, weighted by its proportionate contribution to the total income.

**Model specification**

The most comprehensive structural form of the income function for household  $i$  can be articulated as (Ersado 2006):

$$Y_i = D\beta_1 + X_i \beta_2 + \mu_i \tag{2}$$

Where:

$Y_i$  = per capita income

$D$  = income diversification index

$X_i$  = vector of explanatory variables

$\beta$  = vector of respective parameters

$\mu_i$  = error term

The potential endogeneity of  $D$  in equation (2) was addressed by employing 2SLS. Subsequently, the actual problematic  $D$  variable in the equation was replaced by a counterpart variable, which was purged of its stochastic or random component. This ensured the application of the ordinary least square’s procedure. To achieve this, a reduced form equation was specified as a function of all the exogenous variables in equation (3) and a set of instrumental variables.

$$D_i = X_i\delta_1 + Z_i\delta_2 + \varepsilon_i \tag{3}$$

Where  $Z_i$  is a vector of instrumental variables, having impacts on income diversification but not on household expenditures. The predicted values from this OLS-estimated reduced form equation (8).



$$Y_i = \beta_0 + \beta_1 X_i + Z_i \delta_2 + \omega_i \quad (4)$$

The explanatory variables  $X_i$  are as previously defined, while the vector of instruments is denoted as  $Z_i$ .

## RESULTS AND DISCUSSION

### Socio-Economic Characteristics of Rural Migrant Households

The results of socio-economic characteristics of the respondents (Table 1) showed that majority (72.25%) were male, whereas 27.25% were female. This indicates a higher occurrence of male-headed households in rural settings. Consequently, this gender imbalance is likely to affect the respondents' choices regarding diversifying their livelihoods. As men are frequently perceived as more active and motivated to improve the wellbeing of their household members, they may be more inclined to pursue additional income-generating activities. The average age of household heads, which is 49.97 years indicates that the age range of migrant household heads falls within the productive years. This aligns with previous research conducted by Fabusoro *et al.* (2010) who reported that rural labour forces in the southwestern region of Nigeria generally range from 20 to 55 years old. Consequently, the household heads in this study are more likely to seek additional avenues for income generation.

The results also revealed that majority (85.25%) of the respondents were married while 84.5% had access to formal education with the average year of formal education estimated at 7.81 years. The literature widely acknowledges a positive relationship between access to education and involvement in income-generating activities. Babatunde and Quaim (2009) emphasized that education significantly and positively influence the diversification into non-farm income. The level of literacy within rural farm households is vital for improving productivity, enhancing production efficiency, and ultimately increasing income, leading to a more diverse range of income sources for improved well-being. As household heads are typically responsible for decision-making within the household, their educational background greatly influences their choice of livelihood strategies.

The result further indicated that majority (73.50%) of respondents had a household size of 4 to 8 individuals, with an average household size of 8. This suggests a relatively large family size within migrant households. These results align with the research conducted by Fabusoro *et al.* (2010), which also found that relatively large household sizes are prevalent in rural areas. Consequently, in the study area, a larger household size implies that there is a higher likelihood of diversified income sources if all members of the household contribute to the overall welfare of the household (Omolehin and Ajiboye, 2025).

The results also showed that most (91.25%) of household heads were physically fit just as about 76.75% of them were first generation migrants while about 85% of the respondents have spent at least 15 years as migrants in their respective locations with the mean duration of stay estimated to be 29.51 years. Length of stay in location is an important determinant of migrants' welfare. Hendriks *et al.* (2018) is of the opinion that migration is often considered a long-term investment in one's future and that standard of living is expected to gradually improve over time after the initial challenges such as culture and environmental-related issues are overcome. Demivera (2019) also found out that most migrants experience more positive and significant impact of migration over time than negative ones. Some results have emerged from literature that length of stay of migrants is positively related to acquisition of assets and social integration (Mara and Landesmann, 2013).

The results further reveal that about 95.5% had access to electricity from the national grid less than 36 hours in a week while about 78.75% had at least one livestock unit. Power is a crucial element of rural infrastructure that plays a significant role in expanding non-farm opportunities in rural areas. It contributes to the establishment of rural enterprises, reduces operational costs, minimizes labor requirements for time-consuming tasks, and enables individuals to allocate more hours towards selected rural non-farm activities. Access to electricity and its reliability directly impact the income-generating activities of rural migrant households and encourage them to diversify their livelihood strategies.

Livestock provide income and employment for producers (Herrero *et al.*, 2012). The respondents had various categories of livestock such as goat, sheep, cow, rabbits and chickens that are at various stages of development. The Tropical Livestock Unit (TLU) conversion index was used,



depending on the type of livestock. About 73% of the respondents were membership of one or more social organizations. The level of participation in social organizations and decision-making of such organisations largely affects access to networks, credit information of cooperatives and other forms of social assets that enhance the economic strengths of rural dwellers for livelihood diversification.

Regarding the size of land holdings of respondents, 86.5% had at least 2ha with a mean of 11.29ha. About 92.25% of respondents covered at least 15km from their locations to urban center with mean distance of 18.37km. The household disposable asset of the majority (51%) was in the range of ₦ 1,000,000 to ₦ 2,000,000 while only 43% had access to credit. Disposable assets are those that can be used to pay off debts in a hurry and reduce the impact of income shocks. Having disposable assets also gives households freedom quick access to cash when there is need to dabble into new business ventures. It is key to taking care of current requirements as well as making long-term plans. By implication, the more the household's disposable assets, the more likely they are able to diversify their income sources.

Access to credit by households or individuals residing in rural areas is important because it helps to break the vicious circle of low capital, low productivity and low level of savings that usually characterize rural economy. Access to credit plays a crucial role in rural households as it aids in mitigating the negative effects of income fluctuations and enables the diversification of livelihood activities (Abraham, 2018). The rural economy can grow only if it has adequate flow of finance. Provision of credit facilities has been discovered to enable rural dwellers buy farm inputs and expand their businesses. Access to credit helps alleviate financial constraints and enhances the ability of households to initiate off-farm and non-farm enterprises (Omolehin & Ajiboye, 2025).



**Table 1: Socio-Economic Characteristics of Rural Migrant Households.**

Variables	Frequency	Percentage	Mean	Standard Deviation
<b>Sex of Household Head</b>				
Female	109	27.25		
Male	291	72.75		
<b>Age of Household Head</b>				
<30 years	6	1.50	49.97	10.25
30-40 years	80	20.00		
41-50 years	134	33.50		
51-60 years	102	25.50		
Above 60 years	78	19.50		
<b>Marital Status</b>				
Married	341	85.25		
Widow/Widower	37	9.25		
Divorced/Separated	22	5.50		
<b>Years of formal education</b>				
0 year	62	15.50	7.81	4.86
1-6 years	157	39.25		
7-12 years	129	32.25		
Above 12 years	52	13.00		
<b>Household Size</b>				
<4 persons	29	7.25	8	2.69
4-8 persons	294	73.50		
9-12 persons	59	14.75		
Above 12 persons	18	4.50		
<b>Generation of migrant</b>				
First generation	307	76.75		
Second generation	93	23.25		
<b>Duration of stay of household head</b>				
<15 years	60	15.00	29.51	14.71
15-25 years	140	35.00		
26-35 years	67	16.75		
Above 35 years	133	33.25		
<b>Access to electricity from the grid per week</b>				
0	111	27.75		
<15 hours	23	5.75		
15-25 hours	132	33.00		
26-35 hours	116	29.00		
Above 35 hours	18	4.50		
<b>Total Livestock Unit</b>				
< 1	85	21.25	12.95	27.77
1 – 2.5	156	39.00		
2.6 – 3.5	43	10.75		
Above 3.5	116	29.00		
<b>Number of Social organizations</b>				
0	106	26.50		

**Disaggregation of Simpson’s Income Index of Diversity (SID)**

Results of respondents’ level of livelihood diversification presented in Table 2 presents the diversity of livelihood among households using Simpson’s Index of Diversity (SID). Results revealed that less than 1% of the respondents had SID of less than 0.20 while 16.25%, 47% and 36% of migrant households had SID ranging between 0.20 and 0.40, 0.41-0.60 above 0.60, respectively.



On the average, the livelihood diversification index stood at 0.53. This is an indication that livelihood activities of the respondents are moderately diversified. The findings are similar to that of Oni and Fashogbon (2012), who asserted that households in rural areas including that of migrants are risk neutral with SID of 0.53. The estimated moderate level of livelihood diversification could be attributed to significant challenges encountered by the participants, such as low level of assets, inadequate rural infrastructural facilities, erratic power supply, inadequate credit facilities, poor marketing facilities and conservatism among others that which militate against suitable environment for venturing into many livelihood activities.

**Table 2:** Distribution of Households according to Simpson's Income Diversity Index

Simpsons Income index)	Frequency	Percentage	Mean
<0.20	3	0.75	0.53
0.20-0.40	65	16.25	
0.41-0.60	188	47.00	
Above 0.60	143	36.00	
Total	400	100.00	

Table 2 displays the outcome of using the two-stage least square (2SLS) method to analyze how diversification of livelihood strategies affects the well-being of migrant households in the research location. The first stage of the analysis demonstrates the impact of the variables on the diversification index, while the second stage regression illustrates the effect of income diversification on the per capita household expenditure.

The analysis tested for the existence of causality effect with the aid of instrumental variables. For this study, to verify the endogeneity effect of diversification index, seven variables were used as instruments, they include access to credit, land access, health status of household head, vocational training acquired, number of social organizations, value of household disposable assets and migrant's generation.

#### **Test of Endogeneity**

The endogeneity test reveals that there was endogeneity at 5% level of significance in the model and it is justifiable to use instrumental variable regression model. Since both the robust  $\chi^2$  ( $P= 0.0318$ ) and robust regression statistic ( $P= 0.0241$ ) tests were significant, the null hypothesis of exogeneity was rejected, Simpson's income diversification index was then considered endogenous.

Tests of endogeneity

Ho: variables are exogenous

Robust score  $\chi^2$  (1) = 0.00041 ( $P = 0.0318$ )

Robust regression F (1,387) = 0.000397 ( $P = 0.0241$ )

#### **Test for Weak Instrument**

This involved testing for joint significance of the instruments and the results showed that the model has strong instruments because the F-value = 26.45 is greater than 10, the rule of thumb value for strong instruments. Therefore, access to credit, land access, health status of household head, vocational training acquired, number of social organization, value of household assets and migrants' generation are strong instruments for Simpson's income diversification index. Also, on the first-stage regression summary statistics, partial  $R^2$  which explained the proportion of the variance explained by the addition of the instrumental variables to the model was 0.2205 and  $F(7,382) = 26.4469$ , which was greater than 10 suggests strong instruments.

#### **Test of Over-identifying Restriction**

The examination for over-identification restriction aimed to determine whether there were more instruments than necessary for estimating the parameter values. The null hypothesis, affirming the validity of the instruments, was accepted as it demonstrated significance at the 1% level ( $P= 0.0062$ ). Consequently, there is no over-identification restriction.

To sum up, this research identified the instruments for the Simpson income diversification index as access to credit, land access, health status of the household head, acquired vocational training,



the number of social organizations to which the household head belongs, the value of household disposable assets, and migrant generation. This conclusion is drawn from the satisfaction of all diagnostic tests pertaining to endogeneity, weak instruments, and over-identification restrictions.

#### **Factors Affecting Livelihood Diversification Index**

The first stage regression model estimates presented in Table 4 indicate that several variables, including farm size, farm income, non-farm income, off-farm income, remittances, and the value of disposable assets, significantly affect the income diversification index.

The coefficient associated with land size is negative ( $\beta = -0.0016$ ) and statistically significant at the 5% level. This suggests that an increase in farm size by one unit corresponds to a reduction in the income diversification index by 0.0016 unit. Consequently, households with small and medium-sized land holdings are more prone to diversify their income sources compared to those with large farm holdings, aligning with the findings of Ahmed *et al.* (2018).

Similarly, the coefficient of farm income is negative ( $-9.61e-08$ ) and significant at the 1% level. This negative association implies that a unit increase in farm income results in a reduction of the diversification index by  $9.61e-08$  unit. Essentially, an increase in farm income enhances the likelihood of specializing in farm activities only, corroborating the observations made by Ellis and Bahigwa (2003), who noted that greater income aids in the timely purchase of farm inputs, leading to increased productivity.

Conversely, the coefficient of non-farm income is positive ( $5.23e-08$ ) and significant at the 1% level. This suggests that increasing non-farm income by one unit enhances the income diversification index by  $5.23e-08$  unit. Additionally, the coefficient of off-farm income is positive ( $1.28e-07$ ) and significantly associated with the income diversification index at the 1% level. This indicates that an increase in off-farm income by one unit raises the income diversification index by  $1.28e-07$  unit.

The coefficient representing the amount of remittances received is positively associated with the income diversification index and significant at the 1% level. Thus, a unit increase in the amount of remittances enhances the income diversification index by  $1.83e-07$  unit. This finding contradicts the conclusions of Ahmed *et al.*, (2018), which suggested that households receiving transfers like remittances may not seek alternative income sources, resulting in low levels of income diversification. However, it aligns with the findings of Mohammed, Vaughan, and Peter (2017), indicating that remittances are used by rural households in Bangladesh to make strategic decisions and invest in various income-generating activities.

Furthermore, the value of household disposable assets positively influences the income diversification index and is significant at the 1% level. This implies that an increase in the value of household assets enhances the income diversification index by  $4.05e-09$  unit. This result is consistent with the findings of Jing *et al.* (2022), reporting that credit has a positive and significant influence on income diversification in Kwara State, Nigeria. The outcome suggests that higher values of disposable assets in households are linked to increased income from diversifying into various economic activities. On the other hand, variables such as credit access, health status, vocational training, number of social organizations involved in, and migrant generation were found to be insignificant. While these variables did not contribute significantly to determining the income diversification index, the sign on the coefficients indicated that they lack explanatory power in this context. Therefore, the results of the first stage regression affirm that the income diversification index is an endogenous variable, dependent on factors such as the value of assets, credit access, health status, vocational training, number of social organizations, and migrant generation.

#### **Effect of Income Diversification on Migrant Household Income**

The effect of income diversification on migrant household income was analyzed using the results from the second stage regression in the 2SLS model, presented in Table 4. Eleven variables were tested in the model, with five found to be statistically significant at different levels. As per the 2SLS regression estimates from the second stage, the coefficient of the household income diversification index (0.1156) was positive and statistically significant at the 1% level. This suggests that an increase in the household income diversification index by one unit would enhance migrant household income by 11.56%, holding all other variables constant. These findings align with the conclusions of Adepoju



& Obayelu in 2013. The coefficient of age was positive (0.1468) and significant at the 10% level, indicating that a unit increase in the age of the household head is associated with a 14.68% increase in income of sampled migrant households in the study area. This finding contradicts the research by Omolehin & Ajiboye in 2019, which reported that age and gender of household heads have no connection with household income.

On the other hand, the coefficient of household size was negative (-0.1093) and statistically significant at the 1% level. This negative relationship with household income implies that an increase in the size of the migrant household by one unit would result in a 10.93% reduction in household income for the studied respondent in the study area. Essentially, an increase in household size increases the likelihood of experiencing poverty. This observation is consistent with the findings of Adepoju & Obayelu in 2013. Consistent with a priori expectations, the coefficient of the dependency ratio (-10224.46) is negative and significant at the 5% level of statistical significance. This negative relationship with household welfare suggests that a unit increase in the household dependency ratio would lead to a 10224.46 unit decline in the income of migrant households in the study area. This aligns with the findings of Iram and Butt (2004), indicating that a higher dependency ratio has a significant negative effect on rural household income, likely due to increased constraints on economic activities within the household.

Furthermore, adhering to a priori expectations, the coefficient of remittances is positive (0.1274) and statistically significant at the 5% level. This positive association implies that remittances have a direct link with household income, signifying that a unit increase in the amount of remittances would enhance migrant household income by 12.74%, while holding all other variables constant. This result aligns with the findings of Tanle (2015), using evidence from China, where additional income through remittances was shown to contribute positively to sustainable household income and assets.

**Table 3: Determinant of Livelihood Strategies Diversification on Migrant Household Income**

Simpson's income index	Coefficient	Robust Std. Err	t-value	P>  t
<b>Sex</b>	0.0111	0.0087	1.27	0.204
<b>Age</b>	-0.0001	0.0004	-0.28	0.778
<b>Household size</b>	-0.0002	0.0021	-0.07	0.942
<b>Education years</b>	-0.0009	0.0007	-1.19	0.236
<b>Farm size</b>	-0.0016**	0.0006	-2.47	0.014
<b>Dependency ratio</b>	-0.0090	0.0090	-1.00	0.316
<b>Farm income</b>	-9.61e-08***	5.41e-09	-17.77	0.000
<b>Non-farm income</b>	5.23e-08***	1.60e-08	3.28	0.000
<b>Off-farm income</b>	1.28e-07***	1.78e-08	7.18	0.000
<b>Remittances</b>	1.83e-07***	6.05e-08	3.03	0.003
<b>Credit access</b>	0.0028	0.0070	0.41	0.685
<b>Land access</b>	-0.0056	0.0091	-0.62	0.538
<b>Health status</b>	0.0088	0.0144	0.61	0.544
<b>Vocation training</b>	0.0014	0.0079	0.18	0.860
<b>Number of social</b>	0.0039	0.0034	1.16	0.245
<b>Assets value</b>	4.05e-09***	1.53e-09	2.64	0.009
<b>Migrant generation</b>	0.0103	0.0093	1.10	0.272
<b>Constant</b>	0.5712	0.0264	21.57	0.000

Per capita expenditure	2nd stage regression			
<b>Income diversification index</b>	<b>Coefficient</b>	<b>Robust Std. Err</b>	<b>Z</b>	<b>p&gt; z </b>
<b>Sex</b>	-0.0224	0.0280	-0.80	0.424
<b>Age</b>	0.1468*	0.0812	1.81	0.071
<b>Household size</b>	-0.10931***	0.0446	-14.77	0.000
<b>Education years</b>	0.0071	0.0156	0.45	0.650
<b>Land size</b>	0.03657	0.0256	1.37	0.170
<b>Dependency ratio</b>	-10224.46**	5553.765	-2.07	0.038
<b>Farm income</b>	9.98e-08	1.15e-07	0.87	0.387
<b>Non-farm income</b>	3.46e-08	6.62e-08	0.52	0.602
<b>Off-farm income</b>	9.31e-08	1.58e-07	0.33	0.742
<b>Remittances</b>	0.1274***	0.0641	1.99	0.047
<b>Constant</b>	12.0611	0.7656	15.75	0.000

Observation = **400**

Wald chi2(11) = **449.19**

Prob > chi2= **0.0000**

R-squared= **0.5035**

Note: \*\*\*, \*\* and \* represent level of significance at 1%, 5% and 10% respectively

### CONCLUSION AND RECOMMENDATION

This study offers insight into the effect of income diversification on household income among rural migrant households in Southwestern part of Nigeria. The study area is characterized by predominantly active first-generation male migrants with limited education. Econometric analysis confirmed that volume of remittances received, value of disposable assets, non-farm income increases the level of income diversification. The study also revealed that respondents participate in farm, on-farm and off-farm activities. Although farming is the primary occupation for most households, the majority have moderately diversified income sources, suggesting that sole reliance on farming may not sustain their desired livelihood. The coefficient of income diversification index and remittances inflow



were positive and statistically significant. This suggests that an increase in diversification index and remittances inflow would enhance rural migrants' household income.

## REFERENCES

- Abraham, T.W. (2018). Estimating the effect of financial access on poor farmers in rural northern Nigeria. *Financial Innovation*. **4**(1): 112-122.
- Adepoju, O. A. & Obayelu O. O. (2013). Livelihood diversification and welfare of rural households in Ondo State, Nigeria. *Journal of Development and Agricultural Economics*. **5**(2): 482-489.
- Ajiboye, A.J., Ogunniyi, G., Faleye, O.O., Aruleba, S.A., & Oladepo, D. (2025). Socioeconomic Determinants of Income shares of rural migrants' households in southwestern Nigeria. *Asian Journal of agricultural extension, economics and Sociology*. **43**(7): 39-54. doi: 10.9734/ajaees/2025/v43i72786
- Ahmed, M. T., Bhandari, H., Gordoncillo, P. O., Quicoy, C. B. (2018). Factors affecting extent of rural livelihood diversification in selected areas of Bangladesh. *SAARC Journal of Agriculture*, **43**(1): 99-110.
- Babatunde, R. O. & Quaim, O. (2009). Patterns of income diversification in rural Nigeria: Determinants and impacts. *Quarterly Journal of International Agriculture*. **48**(4): 305-320.
- Bissaleua, Herve, Latifou Idrissou, Adebayo Ogunniyi and Kwesi Atta-Krah. (2018). Diversification and livelihood strategies in the cocoa belt of West Africa. The need for fundamental change. *World Development Perspectives*. **10**: 73-79.
- Chand, M. (2012). Diaspora, migration and trade: the Indian diaspora in North America. *Journal of Enterprising Communities: People and Places in the Global Economy*. **6**: 383=96.
- Christiaensen, L., & Todo, E. (2014). Poverty reduction during the rural-urban transformation: The of the missing middle. *World Development*. **63**(c): 43-58.
- Demivera, N. (2019). Receiving country investments and acquisitions: How migrants negotiate the adaptation to their destination. *Social Inclusion*. **7**: 28-27.
- Deotti, L., & Estruch, E. (2016). Addressing Rural Youth Migration at its Root cause: A conceptual Framework. Available at <https://www.fao.org/3/a-i5718e.pdf>
- Ellis, F. (2000). *Rural Livelihood and Diversification in Developing Countries*. Oxford: *Oxford University Press*.
- Ellis, F., & Bahiigwa, G. (2003). Liveihood and rural poverty reductionin Uganda. *World Development*. **31**: 997-1031.
- Ersado, L (2006). Income diversification in Zimbabwe: Welfare implication for Urban and Rural areas, *Policy Research working paper*. No 3954@ World Bank. <https://doi.org/10.1596/18139450-3954>
- Fabusoro, E., Omotayo, A.M., Apantaku, S.O. & Okuneye, P.A. (2010). Forms and determinants of rural livelihood diversification in Ogun State, Nigeria. *Journal of Sustainable Agriculture*. **34**(4): 417-438.
- Hendriks, M., Martinj, B., Julie, R., Espinova, N. (2018). *Do international migrants increase their happiness and that of their families by migrating?* In World Happiness Report 2018. Edited by John Helliwell, Richard Layard and Jeffrey Sachs. New York. UN Sustainable Development Solutions Network, 44-66
- Herrero, M., Grace, D., Njoki, J., & Johnson, N. (2012). The roles of livestock in developing countries. *Animal*. **7**(1): 1-16.
- Iram, U. & Butt, M.S. (2004). Determinants of household food security: an empirical analysis for Pakistan. *International Journal of Social Economics*. **31**(8): 753-766.
- Jing, L. Ding, J. Zhou, X. Huang, A. Degen R. and Long, (2022): The adaptive strategies of yarks to live in the Asia highlands: *Global Ecology and Conservation*.
- Mara, I., & Landesmaan, M. (2013). The steadiness of migration plans and expected length of stay based on a recent survey of Romanian migrants in Italy, Norface Migration Dicussion Paper Series 7.



- Minot, N., Epprecht, M. T. & Trung, Q. L. (2006). Income diversification and poverty in the Northern upland of Vietnam. *Research Report* No. 145. Washington, D. C. International Food Research Institute.
- Mohammad, J. U. S., Vaughan, H., & Peter, H. B. (2017). Remittances and livelihood diversification: Building resilient household economies. In: *Remittances income and social resilience among migrant household in rural Bangladesh*. Palmgrave Macmillan, New York. 163-190.
- National Bureau of statistics (NBS) (2017). *Social statistics report 2017*. <https://www.nigerianstat.gov.ng>
- Ogunniyi, I. A., Mavrotas, G., Olagunju, K., Fadare, O., Rufai, M. A. (2018). The paradigm of governance quality, migration and its implication on food and nutritional security in Sub-Saharan Africa. What does dynamic generalized method of moments estimation reveal? *Paper presented at 2018 Conference of International Association of Agricultural Economists*, Vancouver, BC, Canada, July 28-August 2.
- Omolehin, O. A. R. & Ajiboye, A. J. (2025). Factors influencing rural migrant households' participation in livelihood activities and income diversification strategies in South-western Nigeria. *Asian Journal of Agriculture and Rural Development*, **15**(2): 145-155. <https://doi.org/10.55493/5005.v15i2.5401>
- Oni, O. A., & Fashogbon, A. E. (2012). Food poverty and livelihood issues in rural Nigeria. *African Journal of Agricultural and Resource Economics*. **8**(2): 108-135.
- Rigg, J., Salamanca, A., & Thompson, E. C. (2016). The puzzle of East and Southeast Asia's persistent smallholder: Livelihood Diversification, Rural-Urban Linkages and Vulnerability to Poverty in Southeast Asia. *Journal of Rural Studies*, **43**(2): 118-133. DOI: 10.1016/j.jrurstud.2015.11.003.
- Tanle, A. (2015). Towards an integrated framework for analyzing the links between migration and livelihoods. *NorskGeografiskTidsskrift-Journal of Geography*, **69**(5):257-.264
- Wenjia, P., Brian, E. R., Hua, Z., Cong, L., Fengchun, W., & Ruonan, L. (2022). The limits of livelihood diversification and sustainable household well-being, evidence from China. *Environmental Development*.
- Wu, Z. (2004). Wage curve for Urban China: A panel data approach, *Applied Economics letter, Taylor and Francis Journal*. **11**(7): 425-428.