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EFFECT OF LIVELIHOOD INCOME GENERATING STRATEGIES ON RURAL AND URBAN FARM HOUSEHOLD EXPENDITURE IN ABIA STATE, NIGERIA

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ABSTRACT

This study analyzed the nature and effect of livelihood income generating strategies on rural and urban farm household expenditure in Abia State, Nigeria. A multistage simple random sampling technique was used to collect data from 120 (60 rural and 60 urban) farm household heads, using a well-structured questionnaire. Data collected were analyzed using the Simpson diversification index (SDI) and Ordinary Least Square regression (OLS). The Simpson diversification index (SDI) result showed that the majority of the rural (90.80%) and urban (80.80%) farm households diversified their livelihoods into diverse income strategies. About 46.70% of the rural farm households and 13.30% of urban farm households were highly diversified with index level of ≥0.51. 15.80% and 42.50% of the rural and urban farm households were in the low level of diversification range (0.02−0.25) respectively while 28.30% and 25% of the rural and urban farm households were in moderately diversified category. This is with an index score of 0.26-0.50 respectively. The OLS regression result showed that diverse livelihood income generating activities have an important influence on household livelihood outcomes. The coefficients of Off-farm Income, Non-farm Income, and On-farm Income & Off-farm Income strategies were statistically significant and positively related only to livelihood outcome of the rural farm household at different probability levels; while Non-farm Income and On-farm Income & Non-farm Income strategies were significant and positively related only to livelihood outcome of the urban farm household at different probability levels. Non-farm Income strategies were significant and positively related to livelihood outcome of both rural and urban farm households at 10% and 1% probability levels respectively. Based on the findings, policymakers, together with rural and urban development actors are encouraged to promote diverse income generating strategies especially, the non-farm income activities in both areas in order to support a sustainable livelihood outcome and poverty reduction of farm households in the areas.

Keywords: Livelihood income, Rural, Urban, Household Expenditure.

INTRODUCTION

More than half of the world population live in urban areas with the expectation that by 2050, two-third of the population will be living in urban areas with current urban population of 53.9% outgrowing the rural population of 46.48% thus, feeding the growing population in urban areas, especially in developing countries will be a big challenge (World Bank,2024). Poverty reduction has been a major challenge faced by the development stakeholders in developing economies like Nigeria. According to FAO, (2023), Sub- Saharan Africa has the highest percentage of population of hungry people in the world (22.5%). and Nigeria has a level of hunger that is serious with a global score of 28.3% (GHI, 2023). Nigeria has over 24.9 million people in a state of hunger and poverty is said to be mainly a rural phenomenon where 72% of people are poor, compared to 42% of people in urban areas and the intensity of rural poverty is also higher in rural areas 42% compared to 37% in urban areas with agricultural sector accounting for the highest incidence over the years (IPC, 2023; Ademola and Abang, 2015 in Dial et al., 2023 & NMPI, 2022).

Amidst increasing population in Nigeria and other developing countries, agriculture remains the primary livelihood source for the majority of the people, offering options for growth, overcoming poverty, unemployment and enhancing food security, though the income generated is not sufficient to sustain the standard of living conditions in an effective manner (FAO, 2023; Okezie et al., 2021).

There has been remarkable progress to reduce poverty in a concerted efforts directed towards the promotion of well-being that requires an integrated plan which goes beyond mere agricultural development thus bringing livelihood income diversification issues to the fore. It has long been established that households tend to diversify their income sources to meet and enhance sustainable livelihood outcomes as a response to unsustainable agriculture making the study of livelihood diversification strategies on the increase (Kassegn & Abdinasir, 2023). To manage risk associated with agriculture and improve lives, Pagnani et al., (2020) and Kassegn & Abdinasir, (2023) reported that households are adopting on-farm, non-farm and off- farm diversification strategies to cope with the changing situation, reduce loss from farming activities, secure economic and environmental shocks.

Livelihood diversification is a survival strategy that has become an integral component of income generating activities among rural and urban households and can be broadly categorized into a farm(on and off farm) and non-farm activities and Non-farm employment includes self or wage employment in manufacturing, craft, artisan work, commerce, and services (Onuwa,et al, 2022). Non -farm income a share of total household income from the non-farm sector is increasingly becoming important and germane for farm households.

Income diversification is the norm among rural and urban households, and different income generating activities offer alternative pathways out of poverty for households as well as a mechanism for managing risk in an uncertain environment. Davis et al., (2010) and FAO, (2023) stated that households combine a diverse set of income generating activities to increase farm income or reduce income variability by exploiting new/existing market or non-market opportunities, including waged employment in the non-farm sector; the exploitation of natural resources; social activities and construct a portfolio of livelihood activities to enhance their better livelihood outcomes. In Africa, according to Musumba, et al (2022) study, pattern of income generating strategies shows that 50% of total rural households income generation are from non-farm activities and the rest comes from farming activities while Zezza and Tasciotti, (2010) reported that 30% of total urban household income originates from urban agriculture and 70% from non-farm activities.

Livelihood diversification strategies include on-farm (crop, livestock, fisheries) activities, off-farm and non-farm activities or market and non-market activities to cushion risks inherent in unpredictable agro-climatic, political, and economic circumstances (Onuwa,et al, 2022).
Studies have shown that most Nigerian households participate in agricultural activities although, large proportion of farm households have diversified their production and income-generating activities to cope with increasing vulnerability associated with agricultural production. Thus, the need to explore the transformative potentials of farm (on and off farm) and non-farm livelihood strategies of rural and urban farm households in Nigeria. Therefore, the objective of this study is to estimate the nature/level of livelihood diversification and effect of livelihood diversification strategies on the welfare of rural and urban farm households in Abia State, Nigeria.

METHODOLOGY

The Study Area

The study was conducted in Abia State, Nigeria and it has a land mass of 700 square km with 17 Local Government Areas. Abia consists of three agricultural zones, namely; Aba, Umuahia and Ohafia. The population of Abia State is 2, 833, 999 with 1, 434, 193 males and 1, 399, 806 females. This population consists of people in all walks of life with about 65 % of them engaged in agriculture (ASPC, 2008). The annual rainfall ranges from 200-250mm while the temperature ranges from 22^0c to 35^0c. The climatic condition of the state allows for favorable agrarian activities, such as cassava, maize, yam, palm produce, cocoa, rice, garden egg, plantain, poultry, goat, pigs, sheep and fishing. Other economic activities practice includes: small and medium scale businesses and jobs done by artisans and civil servants who engage in farming on part time basis like pottery, trading, carpentry, shoe making, bricklaying, hair dressing or barbing/plaiting, vulcanizing, basketry/weaving, tailoring, laundry, driving tourist and area.

Sampling Procedure

A multistage sampling technique was used for this study. The first stage involved simple random selection of two out of three Agricultural Zones in the state, Ohafia and Aba Agricultural Zones, which are majorly rural and urban areas. In the second stage, two LGAs were randomly selected from each of the two agricultural zones, given a total of four LGAs. In stage three, two autonomous communities were randomly selected from each of the local government area, given a total of eight (8) autonomous communities. The last stage involved random selection of 15 farm households (10 rural and 5 urban) from each autonomous community, giving a sample size of 120 (80 rural and 40 urban) farm household heads. With the aid of a well - structured questionnaire, cross sectional data were collected and analyzed with the use of both descriptive (frequency and percentages) and inferential statistics.

Model Specification

Livelihood Diversification Measurement (Simpson Diversification Index)

Following Ahmed (2015); Khatun et al. (2012); and Babatunde et al. (2009), Simpson index was used in this study because of its computational simplicity, robustness and wider applicability. The formula for Simpson index is given as:

$$SDI = 1 - \sum_{i=1}^{N} P_i^2 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

and

$$Pi = \frac{X_i}{\sum_i X} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where:
Xi = income from ith livelihood, i = 1, 2,… n
Pi = income proportionate of ith income source in the total income source.
SDI = Simpson Diversification Index.
N = Total number of income sources
The value of the index lies between 0 and 1. The index is zero when there is a complete specialization and approaches one as the level of diversification increases. Following Ahmed (2015), the level of livelihood diversification was classified as follows:
1. No diversification (SDI ≤ 0.01)
2. Low level of diversification (SDI = 0.01 - 0.25)
3. Medium level of diversification (SDI = 0.26 - 0.50)
4. High level of diversification (SDI ≥ 0.51).

Multiple Regression Technique

Koutsoyiannis (2001) identified the Ordinary Least Square estimator (OLS) involving multiple regression analysis as a way of analyzing the joint causal relationship between some defined explanatory variables (independent variables) and exogenous variable (dependent variable). In the implicit form of this model, we have:

$Y = f(X_1, X_2 \ldots\ldots\ldots\ldots\ldots Xn)\ e$ - - - - - - - (3)

Where;

Y = Welfare (Household's per capita total expenditure)

$X_1 - X_n$ = Independent, explanatory or response variables.

$b_0 - b_n$ = Parameter estimates of regression

e = Stochastic term, random variable or error term.

The model is explicitly specified as follows;

$Y = \beta_0 + \beta_1 (X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + \beta_5(X_5)$ - - - - - - - - - (4)

Where

Y_1 = Urban farm household's per capita total expenditure (₦)

Y_2 = Rural farm household's per capita total expenditure (₦)

X_1 = On-farm Income (₦)

X_2 = Off-farm Income (₦)

X_3 = Non-farm Income (₦)

X_4= On-farm Income & Off-farm Income (₦)

X_5 = On-farm Income & Non-farm Income (₦)

RESULTS AND DISCUSSION

The result in Table 1 shows the analysis of the farm household level of Diversification using Simpson Diversification Index.

The result showed that majority of the rural (90.80%) and urban (80.80%) farm households diversified their livelihoods into diverse income strategies and earned significant amount of income from each strategy. From Table 1, 46.70% of the rural farm households and 13.30% of urban farm households were highly diversified with index level of ≥0.51 indicating an evenly spread of income sources while only 9.20% rural farm households and 19.20% urban farm households didn't diversify, implying 100% source of their income is from a single source. For low level of diversification range (0.02−0.25), 15.80% and 42.50% of the rural and urban farm households were in this category respectively. The implication is that about 75% of the farmers' income came from a single source while 25% came from different income strategies. Also, the result indicates that 28.30% and 25% of the rural and urban farm households were in moderately diversified category respectively showing an index score of 0.26-0.50 meaning that up to 50% of households' income came from a diversified income source.

Table 1: Distribution of Households by level of Diversification

	Rural		Urban		
SDI Range	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Level of Diversification**
≤0.01	11	9.20	23	19.20	No Diversification
0.02−0.25	19	15.80	51	42.50	Low
0.26 −0.50	34	28.30	30	25.00	Moderately
≥0.51	56	46.70	16	13.30	High
Total	**120**	**100**	**120**	**100**	

Source: Field Survey Data 2021

Effect of Livelihood Income-Generating Strategies on Rural and Urban Agribusiness Household Expenditure

The F-ratios value of 31.897 for rural and 40.159 for urban areas were highly significant at 1% level of probability respectively indicating goodness of fit of the regression line (Table 2). The coefficient of multiple determination (R^2) was 0.667 and 0.880 for rural and urban farm households respectively. This implied that 66.7% and 88% of the total expenditure was explained by the livelihood income-generating activities for the rural and urban areas respondents respectively.

Households per capita total expenditure comprising of expense on food, clothing, education, health, transport, fuel, and festival was used as a household-level indicator of welfare in this study.

From Table 2, the coefficient of off-farm Income generating activities was significant and positively related to the expenditure of the rural farm household at a 1% probability level. Off-farm activities of the farmers were agricultural activities that took place outside their own farms like processing, hunting, firewood/charcoal production, etc. The result implied an increase in income from number of different Off-farm income generating activities involved by rural farmers will lead to increase in farm household's per capita expenditure. Furthermore, Non-farm Income generating activities were significantly and positively related to the household per capita expenditure of the rural and urban farm households at 10% and 1% probability levels respectively, this implies that an increase in different non-farm income-generating activities

for both rural and urban areas increase the expenditure pattern of farm households. Also, the result shows that Participating in additional activities that took place outside the agricultural sector (non-farm) contributes to an increase of 54.5% and 77.1% per capita expenditures respectively with an increase of 100% of the incomes generated holding other conditions as constant. The result implies that the majority of rural and urban farm households were probably involved in a number of different non-farm income-generating activities, like wage employment, Artisans, Remittances/pensions, Renting properties, and trading to cope with increasing vulnerability associated with agricultural production which ensured significantly higher per capita household expenditure and improve their livelihoods. This result is in-line with Salam et al., (2019) who opined that income from a combination of farming and various form of non-farm activities influenced welfare positively compare to only agricultural activities and ensured significantly higher per capita household expenditure. Again, Adepoju and Obayelu, (2013) stated that rural households are forced to develop strategies to cope with increasing vulnerability associated with agricultural production through moving into non-farm income generating activities. Also, these findings are in line with Mitlin (2010) who observed that both rural and urban economy depends on income from off-farm wage/self-employment and Agriculture and self-employment, as people have to pay for food, fuel, and transport to and from work, water, shelter, and essential health services.

The coefficient of on-farm and off-farm Income generating activities were significant and positively related only to an expenditure of the rural farm household at a 5% probability level, this implies that a unit increase in income from agricultural and off-farm activities will lead to a 10.095 unit increase in the expenditure pattern of the rural farm household. While on-farm and non-farm Income-generating activities were significantly and positively related to expenditure of the urban farm household at a 10% probability level which indicates that an increase in income from agricultural and non-farm activities will lead to an increase in the per capita expenditure of rural farm household. This is expected and in accordance with a prior expectation that farm households' participation in nonfarm activities would very likely have a significant effect on household's food consumption and non-food expenditure (ultimately their welfare) and this is in line with Salam et al., (2019). This result is also in consonance with Adepoju and Obayelu, (2013) who opined that households that earn income from non-farm activities or a combination of non-farm and farming activities can emphasize their welfare more positively than only farming groups. Satterthwaite (2012) reported that the most direct form of poverty reduction in most rural areas is raising incomes and creating room for new employment opportunities, as higher incomes will allow low-income households to meet their consumption needs, increase their assets, and afford better-quality housing and basic services.

Table 2: OLS results on the effect of livelihood income-generating strategies on rural and urban agribusiness household expenditure

Variables	Rural Coefficient	Z-ratio	Urban Coefficient	Z-ratio
Intercept	10.625	22.983***	10.263	19.534***
On-farm Income(X_1)	-0.031	-1.130	-0.095	-0.095
Off-farm Income (X_2)	0.491	6.548***	1.895E-005	0.253
Non-farm Income (X_3)	0.545	7.005***	0.771	2.829***
On-farm Income & Off-farm Income (X_4)	10.095	2.240**	-3.331E-006	-0.156
On-farm Income & Non-farm Income (X_5)	0.001	1.469	0.000	1.644*
R^2	0.667		0.880	
R^{-2}	0.621		0.858	
F-ratio	31.897***		40.159***	

Source: Field Survey Data 2021 + lead equation, *** Significant at 1%, ** Significant at 5%,*significant at 10%.

CONCLUSION AND RECOMMENDATIONS

This study estimated different livelihood income-generating strategies among rural and urban farm households and their effect on their total expenditure. The result showed that majority of the rural (90.80%) and urban (80.80%) farm households diversified their livelihoods into several income strategies ranging from on farm, off farm, to non-farm incomes and earned significant amount of income from each strategy. Also, 46.70% of the rural farm households were highly diversified, while 42.50% of the urban farm households were lowly diversified. The regression result showed that participating in diverse livelihood income generating activities have an important influence on household total expenditures. The coefficients of Off-farm Income, Non-farm Income, and On-farm Income and Off-farm Income strategies were statistically significant and positively related only to the expenditure of the rural farm household at different probability levels. Non & On-farm Incomes and Non-farm Income strategies were significant and positively related only to an expenditure of the urban farm household at different probability levels. Non-farm Income strategies were significant and positively related to expenditure of both rural and urban farm households at 10% and 1% probability levels respectively. Based on the findings, policymakers together with rural and urban development actors should promote different income-generating strategies by giving soft loans with preference to diversified farmers, and training especially, the non-farm income activities in both areas to support a sustainable livelihood outcome and poverty reduction of farm households in the areas.

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