



Livelihood Diversification among Rural Farmworker Households in Edo State, Nigeria

<https://dx.doi.org/10.4314/jae.v28i1.2>

Belonwu, N. Eunice.

Corresponding author
Department of Agricultural Science,
University of Delta, Agbor, Nigeria
Email: eunice.belonwu@unidel.edu.ng,
ego4life03@yahoo.com.
Phone no: 08126876683, 08033666969
<https://orcid.org/0000-0002-1950-5020>

Moseri H.

Department of Agricultural Science.
University of Delta, Agbor, Nigeria
Email: Hillary.moseri@unidel.edu.ng
Phone no: 08138118870,08059138901
<https://orcid.org/0000-0002-5538-405x>

Umeri, Clifford

Department of Agricultural Science,
University of Delta, Agbor, Nigeria
Email: clifford.umeri@unidel.edu.ng
Phone no: 08133771837

Nwabeze, G.O.

Research Outreach Department,
National Institute for Freshwater fisheries research,
New Bussa, Niger State

Submitted: April 2, 2023

First Request for Revision: 8th April 2023

Revisions: 26th April, 22nd August, 8th Oct, 2023, 14th Nov 2023, 8th Dec. 2023

Accepted: 16th December 2023

Published: 9th January 2024

Cite as: Belonwu, N.E, Umeri, C, Moseri H., Nwabeze, G. O. (2024). Analysis of Livelihood Diversification among Rural Farmworker Households in Edo State, Nigeria *Journal of Agricultural Extension* 28 (1). 12-18.

<https://dx.doi.org/10.4314/jae.v28i1.2>

Keywords: Diversification, food security, rural livelihood

Conflict of interest: The authors declare no potential conflict of interest.

Acknowledgement: The authors would like to acknowledge the chief and trained enumerators used from various communities to elicit information from the respondents,

Funding agency: Self Sponsored

Authors' contributions: Authors' contributions:

BBS: (25%) Conceptualization; Data curation; Formal analysis; Software; Methodology; Writing - original draft; Writing - review & editing

AP (25%): Conceptualization; Investigation; Methodology; Resources; Software; Supervision; Validation; Visualization.

CW (25%): Conceptualization; Data curation; Visualization; Writing - original draft; Writing - review & editing

PS (25%): Conceptualization; Data curation; Visualization; Writing - original draft; Writing - review & editing

Abstract

The study examined livelihood diversification among rural farmworker households in Edo State. Ninety-six respondents provided data through the questionnaires which were analysed using percentages, the mean, chi-square, and the Cochran test. A sizable portion of respondents (24.0%) fell between the ages of 24 and 35, with a mean age of 50, and were predominately male (83.3%). Farming (100.0%) and small-scale commerce (78.0%) predominate among the livelihood possibilities for farmworker households, with a high percentage having a senior secondary school diploma (48.0%). Lack of access to credit was the biggest obstacle to diversifying sources of income ($\bar{x} = 83.0$). Rural farmworker households diversified their sources of income. The findings advocate for the involvement of relevant organisations in facilitating credit and loan facilities for smallholder farmworkers to boost their output and income, which may impact their degree of diversification and raise their standard of living.

Introduction

Nigeria has a conventional economy that is based on agriculture. In 1960, the agricultural industry made up over 63.8% of the nation's GDP; however, this contribution has considerably decreased over time, averaging just about 24% from 2013 to 2019. (Fowowe, 2020; Oyaniran, 2020). Nevertheless, agriculture remains Nigeria's second-largest contributor to GDP growth despite the substantial fall in its GDP share (Varella, 2021). About 23% of sub-Saharan Africa's GDP comes from the agricultural sector, and about 80% of jobs in underdeveloped African nations are related (Ayana et al.2021). Although sub-Saharan African rural households depend on agriculture, many are underprivileged and experience food shortages for many months. Agriculture is a vital source of revenue, employment, and food (Abera, 2021). The risks and unpredictability of agriculture as a source of increased revenue are linked to agricultural households' falling into poverty, having a poorer standard of living, and having less food security. Unexpected shocks and unforeseen natural challenges in agriculture force agricultural households to seek additional income sources (Afodu et al., 2019). Most Nigerians reside in rural regions where agriculture is the primary source of employment. Food insecurity affects both homes and people, but attempts to address it may also significantly negatively impact households if they must spend a large portion of their income on food. Rural areas often transition away from farming for a variety of reasons. Diversification can be the result of opportunity or desperation. The risk may be a factor, but it is not a requirement for people to choose to diversify (Igwe et al., 2020). When the majority of a country's population is considered poor and is starting to diversify their livelihoods into other economic pursuits as a meaningful source of income, reducing poverty is the most challenging challenge confronting most emerging countries (UNDP 2019, Egla et al., 2020).

Living is having resources and the ability to sustain life. Living, necessary skills, assets, and activities are all represented by livelihood. Increased participation in various economic activities that generate revenue for the benefit of household welfare and livelihood is what is meant by "livelihood diversification" (Belonwu, 2020). All economic activities are included except conventional agricultural cultivation and animal rearing (Agbarevo et al., 2019). Loison (2019) asserts that livelihood diversification is essential for boosting the economy and reducing poverty in emerging nations, particularly Nigeria. These livelihoods are primarily based on the deteriorating subsistence agriculture, which implies that family economies and livelihoods in rural regions are increasingly diversifying to reflect income and dietary requirements. Due to this circumstance, rural farmworker households have changed their livelihood plans, diversified their sources of income, and found other ways to avoid food insecurity. In developing nations like Nigeria, rural households' survival tactics include diversifying their sources of income from farming (Anderzén et al., 2020; Kiros et al., 2021). Rural farmworkers participate in various activities to raise their income, enhance the welfare of their families, or increase the level of living in their homes. Musumba et al. (2022) suggested livelihood diversification as a trustworthy and practical method for boosting earnings and improving the standard of living.

Most of Nigeria's agricultural production is rain-fed, making it highly susceptible to weather changes, negatively impacting rural life. Arowolo and colleagues (2012).

Farmworker households in the rural areas of Edo South Local Government Area grow crops with minimal economic yields and only rely on rain for their production (Umeri, 2022). Due to their reliance on rainfall, smallholder farmers are more susceptible to unfavourable weather circumstances, including drought and extended dry spells (Kom et al., 2022). Additionally, due to insufficient land resources and unpredictable rainfall patterns, farmworker households cannot satisfy their annual needs for food, which lowers the revenue of rain-dependent farmers and makes them vulnerable (Morris et al., 2020). Since they engage in various livelihood activities and have varying levels of access to revenue sources outside of agriculture, they have turned to other economic activities to augment their primary sources of income. This is why the study in Nigeria's Edo State explored the diversification of livelihoods among rural farmworker households. In particular, the study:

- Determine the economic diversification tactics used by respondents.
- Examine how the income of rural farmworker households is affected by livelihood diversification
- to determine the elements that restrict the effectiveness of livelihood diversification for rural farmworker households.

Methodology

The research was conducted in Edo State, with a land area of 19,794 km², The respondents were chosen using a multi-stage sampling procedure. The initial step involved selecting one (Edo South agricultural zone) of the three agricultural zones in the State because of the high agricultural and non-agricultural activity. Out of the seven blocks (LGAs) in Edo South, four blocks (LGAs) were purposefully chosen in the second stage. The third stage involved selecting two cells randomly from the blocks. The fourth and final stage activities used snowball sampling to pick 12 farm workers for each cell. Ninety-six farmworkers were included in the sample. The analytical methods used in the data analysis included Chi-square, the Cochran Q test, frequency, means, and percentages.

Results and Discussion

Economic diversification tactics of the Respondents

The income-generating activities of the respondents are presented in Table 1. All (100%) respondents engaged in crop farming, while more than half (72.8%) engaged in trading. Few of the respondents indicated their engagement in other income-generating activities such as oil processing (29.1%), artisan (27.7%), pottery (13.5%) and hunting (10.4%). This implies that crop farming is the primary occupation of the respondents. They also engaged in one or more livelihood income-generating activities to argue their income from crop farming to cater to their household needs. The finding is similar to the reports of Iraoya et al. (2022), that most rural farm households have increasing sources of farm income diversification or alternative non-farm income-generating activities in Nigeria.

Table 1: Economic diversification tactics of the respondents

Activities	Percentage *
Farming	100
Petty trading	72.8
Oil processing	29.1
Artisan	27.7
Pottery	13.5
Hunting	9.3
Hired labours	8.3
Firewood gathering	8.3
Okada	7.2
Cloth making	7.2
Civil savant	6.2
Grading mill operation	6.2
Gathering of forest products	4.1

Source: Field survey, 2022. *Multiple responses

Elements Restricting the Effectiveness of Livelihood Diversification

The distribution of the respondents based on the problem affecting their livelihood diversification is presented in Table 2. Most of the respondents indicated that they were constrained by a lack of access to loans (80%), poor access to the market (75.0%), price of the commodity (73.9%), unstable electricity supply (72.9%) and appreciation in task rate (70.8%). This implies that respondents faced low financial capability, which is one of the significant determinants of livelihood diversification and sustainability. This corresponds with the findings of Adem et al. (2020), that total finance of farmworker households positively and considerably influences diversification. Lack of access to the market and poor commodity pricing were other problems for the respondents, which can negatively affect production as a return on investment is not guaranteed. Lack of access to loans and market access ranked 1st and 2nd, respectively, as a leading problem affecting livelihood diversification. In contrast, the high cost of business premises and insufficient market ranked 7th and 8th respectively as the most minor problem.

Table 2: Elements restricting the effectiveness of livelihood diversification

Problems	%	Ranking
Lack of access to a loan	83.3	1 st
Lack of access to market	75.0	2 nd
Price of commodity	73.9	3 rd
Unstable electricity	72.9	4 th
Appreciation in the tax rate	70.8	5 th
Lack of unskilled labour supply	25.0	6 th
High cost of business premises	22.9	7 th
Insufficient market	20.8	8 th

Source: Field survey 2022 *Multiple responses

Relationship between Respondent's Socioeconomic Characteristics and Diversification of Income Sources.

Table 3 reveals that there was significant relationship between the farmer's sex ($\chi^2 = 107.06$), marital status ($\chi^2 = 179.33$), education ($\chi^2 = 44.58$), household size ($\chi^2 = 59.52$), farming experience ($\chi^2 = 220.58$), farm size ($\chi^2 = 24.00$), household income ($\chi^2 = 10.36$), average monthly income ($\chi^2 = 38.04$) and diversification of income sources. This implies that the variables mentioned above have something to do with the diversification of income sources of the respondents. Age ($\chi^2 = 5.77$) did not have a significant relationship with the income source diversification of the respondents. This implies that the respondents' age does not significantly determine the diversification to other sources of income. Hence, other factors might have influenced the diversification, as mentioned above. A study by (Gebru et al., 2019) indicated a negative relationship between age and the use of innovations.

Table 3: Relationship between farmer's socioeconomic characteristics and diversification of income sources.

Variable	Chi-square	Df
Age	5.771	4
Sex	107.063*	2
Marital status	179.232*	3
Education	44.579*	3
Household size	59.521*	4
Farming experience	220.579*	5
Farm size	24.000*	1
Household income	10.362*	2
Average monthly expenditure	38.042*	5

- $P \leq 0.05$

Source: Field survey data, (2022)

Differences in the Elements Restricting the Effectiveness of Livelihood Diversification

The Cochran Q test result *Cochran's Q* ($\chi^2 = 15.51$; $df=8$; $p < 0.05$) revealed significant differences among the problems affecting respondents' income diversification. (Table 4) The post-hoc test shows that the most significant challenge affecting livelihood diversification was lack of access to loans ($\bar{x} = 83.3$), and this was statistically different from poor access to the market ($\bar{x} = 75.0$) and other problems. There was no significant difference between poor market access ($\bar{x} = 75.0$), price of a commodity ($\bar{x} = 73.9$) and unstable electricity (mean = 72.9). However, these were statistically different from the lack of unskilled labourer ($\bar{x} = 25.0$) and high cost of business premises ($\bar{x} = 22.9$)

Table 4: Difference in the elements restricting the effectiveness of livelihood diversification

Problem	Mean rank*
Lack of access to a loan	83.3 ^a
Lack of access to the market	75.0 ^a ^b
Price of commodity	73.9 ^b
Unstable electricity	72.9 ^b
Appreciation in the tax rate	70.8 ^b
Lack of unskilled labour supply	25.0 ^c
High cost of business premises	22.9 ^c

Chi-square value = 15.51; df = 8 p < 0.05

**Means with same letters are not significantly different*

Source: Field survey, 2022

Conclusion and Recommendations

Rural farm households in Edo state diversified their sources of income, received income from several sources, with farming accounting for most of the farmworker households' primary source of income. They were challenged by, lack of access to credit, bad market conditions, low commodity prices, and inconsistent electrical supply led to livelihood diversification. Sex, married status, education, family size, farming experience, farm size, household income, and average monthly income were essential and favourable drivers of the diversification of livelihood activities in the research region, but age had adverse impacts. To boost output and income for smallholder farmers, which may impact their degree of diversification and raise their standard of life, the results call for the participation of relevant agencies.

Reference

- Abera, A., Yirgu, T., & Uncha, A. (2021). Determinants of rural livelihood diversification strategies among Chewaka resettlers' communities of southwestern Ethiopia. *Agriculture & Food Security*, 10(1), 1-19.
- Adem, M., & Tesafa, F. (2020). Intensity of income diversification among smallholder farmers in Asayita Woreda, Afar Region, Ethiopia. *Cogent Economics & Finance*, 8(1) .[https:// doi.org/10.1080/23322039.2020.1759394](https://doi.org/10.1080/23322039.2020.1759394)
- Afodu, O. J., Afolami, C.A., Akinboye, O., Ndubuisi-Ogbonna, L., Ayodeji, A.T., Shobo, B., & Ogunnowo M.D., (2019). Livelihood diversification and its determinants on rice farming households in Ogun State, Nigeria. *African Journal of Agricultural Research*, 14 (35): 2104-2111
- Agbarevo, M.N.B. & Nmeragini, D.C (2019). Effect of non-farm income-generating activities on poverty reduction among rural households in Abia State, Nigeria. *International Journal of Agriculture and Research*, 2(1): 15 -25.
- Anderzén, J., Luna, A.G., Luna-González, D.V., Merrill, S.C., Caswell, M., Méndez, V.E.; Jonapá, R.H., & Cacho, M.M.Y.T.G. (2020). Effects of on-farm diversification strategies on smallholder coffee farmer food security and income sufficiency in Chiapas, Mexico. *Journal of Rural Stud.* , 77, 33–46.
- Arowolo, A. O., Ibrahim, S. B., Aminu, R. O., Olanrewaju A. E., Ashimiu, S. M. & Kadiri, O. J. (2022). Effect of Financial Inclusion on Livelihood Diversification among Smallholder Farming Households in Oyo State.
- Ayana, G. F., Megento, T. L., & Kussa, F. G. (2021). The extent of livelihood diversification on the determinants of livelihood diversification in Assosa Woreda, Western Ethiopia. *GeoJournal*. <https://doi.org/10.1007/s10708-021-10379-5>

- Belonwu, N. E., Onemolease, E.A., & Igene, C.A. (2020). Determinants of household's livelihood among rural women in Delta North Local Government Area of Delta State, Nigeria. *Agricultural Economics and Extension Research Studies (AGEERS)* University of Port Harcourt, Nigeria. 8(1), Pp: 1-9
- Egla, M., Eglantina H., Mirela, P. & Marian C. V. (2020). Poverty—A Challenge for Economic Development? Evidences from Western Balkan Countries and the European Union. *Sustainability of Global Economy and Governance*, 12 (18), 1-24
- Federal Republic of Nigeria (2007). *The 2006 Nigerian Census*. Abuja: National Population Commission
- Fowowe, B. (2020). The effects of financial inclusion on agricultural productivity in Nigeria. *Journal of Economics and Development*, 22(1): 61-79. doi:10.1108/JED-11-2019-0059
- Gebru, B. M., Wang, S. W., Kim, S. J., & Lee, W. K. (2019). Socio-ecological niche and factors affecting agroforestry practice adoption in different agroecologies of southern Tigray, Ethiopia. *Sustainability (Switzerland)*, 11(13), 1-19. <https://doi.org/10.3390/su11133729>
- Igwe, P. A., Rahman, M., Odunukan, K., Ochinanwata, N., Egbo P.O., & Ochinanwata, C. (2020) Drivers of Diversification and Pluriactivity among Smallholder Farmers— Evidence from Nigeria. *Green Finance*, 2, 263-283.
- Iraoya, A. O., & Isinika, A. C. (2022). Income diversification and agricultural intensification of rural households in Nigeria: Synergies and tradeoffs. *Journal of African Development*, 23(1), 112– 131.
- Kiros, A.Y., Mohammed, J.N., Assefa, M., Woldesemayate, T. & Caracciolo, F. (2021). Wheat varietal diversification increases Ethiopian smallholders' food security: Evidence from a participatory development initiative. *Sustainability (Switzerland)*, Vol. 13, 1–17. <https://doi.org/10.3390/su13031029>
- Kom, Z., Nethengwe, N. S., Mpandeli, N. S., & Chikoore, H. (2022). Determinants of small-scale farmers' choice and adaptive strategies in response to climatic shocks in Vhembe District, South Africa. *Geo Journal*, 87(2), 677-700. <https://doi.org/10.1007/s10708-020-10272-7>
- Loison, S. A. (2019). Household livelihood diversification and gender: Panel evidence from rural Kenya. *Journal of Rural Studies*, 69, 156–172. <https://doi.org/10.1016/j.jrurstud.2019.03.001>
- Morris, M. M., Charles, W. R. & Kennedy, N. O. (2020). Assessment of Livelihood Vulnerability to Rainfall Variability among Crop Farming Households in Kitui South Sub-County, Kenya. *Open access Library*.
- Musumba, M., Palm, C.A., Komarek, A.M., Mutuo, P. K., & Kaya, B. (2022). Household livelihood diversification in rural Africa. In *Agricultural economics*, 53(2), 246-256. *Journal*, Vol 7(6)
- National Bureau of Statistics. (2019). Selected Banking Sector Data Q3 2019, National Bureau of Statistics, Abuja.
- National Population Commission. (2006). Nigerian Population Figures. NPC, Abuja
- Oyaniran, T. (2020). *State of Agriculture in Nigeria. Report presented at AfCFTA Workshop on Current State of Nigeria Agriculture*. <https://www.pwc.com/ng/en/assets/pdf/afcftaagribusiness-current-state-nigeria-agriculturesector.pdf>
- Umeri, C., Moseri, H. Belonwu, E.N & Efoma, A. (2022). Evaluation of some maize (Zea mays L) Varieties on the growth and yield performance in Delta State, Nigeria. *International Journal of Agriculture and rural Development*. 25 (1); 6223-6229.
- Varella, S. (2021). Distribution of GDP in Nigeria 2020, by sector <https://www.statista.com/statistics/1207951/gdpdistribution-across-sectors-in-Nigeria>