UTILIZATION OF LABOUR AMONG YAM FARMERS IN OGOJA LOCAL GOVERNMENT AREA, CROSS RIVER STATE, NIGERIA

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Abstract
The study assessed the utilization of labour among yam farmers in Ogoja Local Government Area, Cross River State, Nigeria. Objectives were to; ascertain the socio-economic characteristics of respondents; identify types of labor utilized; determine the farming operations in which available labour was utilized; ascertain factors influencing labor utilization. A multi-stage sampling procedure was used to obtain data from 126 respondents and analyzed using descriptive and inferential statistics. Results revealed that majority (66.7%) of the farmers were males, 40.5% were above 50 years, majority (64.3%) were married, 46.3% had secondary education, most (53.9%) had household size of above 6 persons and a larger proportion (46%) had farm size of between 1-2 plots. The most utilized labour was family labour, with $\bar{X}$ of 3.39. The farming operations in which family labour was mostly utilized were planting (69.9%) and fertilizer application (69%). However, hired labour was mostly used in staking (65.1%) and mound making (63.5%) operations. The findings also showed that, the most perceived factor that influenced labour utilization was rural urban migration with $\bar{X}$ of 3.58. Results of the chi-square statistics revealed a statistically significant association between type of labour used and yam farming operation with tcal (145.67) > P value (21.03) at 0.05 significant level. It was therefore recommended that the government should supplement manual labour with mechanised labour to discourage rural-urban migration as well as to address the need for specialized skills and ease difficult tasks.
Keywords: Labour, utilization, yam farmers

Introduction

Yam (*Dioscorea spp*) is an annual tuber and climbing plant which according to International Institute of Tropical Agriculture (IITA, 2009) has over 600 species. Based on data from the Food and Agriculture Organisation (FAO) of the United Nations and a comparison with 44 countries in 2022, Nigeria is ranked as one of the highest yam producers in the world and contributes about 64 -69% to the global production of the produce (FAO, 2025). The importance of this plant is not only as a source of food and income but also has the potential for livestock feed and industrial starch production (Ayanwuyi *et al*., 2011). In many farm communities in Nigeria, the size of the yam enterprise that one has, reflects the person's social stature (Izekor & Olumese, 2010). Yam could also be

cultivated for the purpose of producing certain drugs and pharmaceutically active compounds; these compounds include diosgenin, saponinis, phenolic compounds and alkaloids (Pranav & Twinkle, 2022).

Labour is a primary factor of production and a key asset in Nigeria, driving the activation of other production inputs, especially among farmers where human labour is mostly utilized (Nmadu & Akinola, 2015). The inadequacy of labour in the production of crops, as opined by Kar *et al*. (2020)**,** has been linked to an ageing farmer population, rural-urban migration, and the persistent drift of rural labour to non-farm and other off-farm activities which potentially offer higher wages. This has denied the farmers the much-needed human labour, weakened the production capacity and reduced income (Ogwumike & Aromolaran, 2000)**.** Recent research shows that small-scale farmers face declining access to labour, rising wage rates and migration, especially during peak seasons when labour is needed most (Elemi *et al*., 2018). The scarcity and timeliness of labour, according to Oluyole *et al*. (2011)**,** has also impacted negatively on planting precision, weed control, timely harvesting, and crop processing. Although the following researchers: Izekor & Olumese (2010); Ayanwuyi, Akingboye & Oyetoro(2011) and Elemi, Eta & Ikann (2018) researched on determinants of yam production and profitability in Edo State; Farmers' perceived constraints of yam production in Oyo State and factors influencing labour supply in Cross River State respectively. These authors seem to work in isolation with yam production and labour supply with little or no empirically established knowledge on utilization of labour on yam farming operations. It is against this background, that this study sought to answer the following questions: what type of labour is mostly utilized, what type of yam farming operations that the available labour is being utilised and what are the perceived factors influencing labour utilisation.

The main objective of the study was therefore to determine the utilization of labour in yam farming operations among yam farmers in Ogoja Local Government in Cross River State. The study also sought to:

-Ascertain the socio-economic characteristics of yam farmers in the study area.

-Identify the labour type available in the study area

-Determine the type of yam farming operations that the available labour was being utilized in the study area.

-Ascertain the perceived factors influencing the use of labour in the study area

Hypothesis of the study

H_o: there is no significant relationship between yam farming operation and the type of labour utilised

Materials and method

This study was carried out in Ogoja Local Government Area of Cross River State, Nigeria. Geographically, the area lies approximately between latitude**;** 6° 39' 17.4132" N and longitude**;** 8° 47' 51.6984" E. Ogoja Local Government Area is located in the northern agro- ecological zone of Cross River State. It shares boundary with Bekwarra L.G. A in the southeast, Yala L.G.A in the west, Ikom L.G.A in the south

and Obudu L.G.A in the East. The Local Government Areas comprises ten wards, namely: Ekajuk I, Ekajuk II, Mbube East I, Mbube East II, Mbube West I, Mbube West II, Nkum Iborr, Nkum Irede, Ogoja Urban I and Ogoja Urban II. The local government area occupies an area of about 912 square kilometers and has a population of 171,901. This area is characterized by fertile sandy loam soil and rainfall is annually (April-October) distributed over a period of 6-7 months, a climatic condition suitable for the cultivation of yam and other food crops such as cassava, maize and plantain among others. The area is rich in cultural heritage with traditional festivals playing an important role in the lives of the people (National Population Commission [NPC], 2006).

This study adopted the multi-stage sampling procedure to select respondents for the study. In stage one a purposive sampling technique was used to select five (5) wards where yams are produced in large quantity. These wards were; Ekajuk I, Ekajuk II, Mbube East I, Mbube East II and Nkum. In the second stage two communities were selected from each of the wards using simple random sampling thus a total of ten communities were randomly selected. These communities were: Egbung, Mfom, Ekpugrinya, Esham, Nkim, Ojerim, Ntara, Benkpe, Ukpe and Aburumbede. In the third stage, 10 % was used to proportionately select farmers in each community involved in yam farming, thus a total of 126 respondents were used for the study. Data were obtained using a set of structured questionnaires. Both descriptive and inferential statistics were used for the analysis of data collected. The descriptive statistics included frequency counts, percentages and means while the inferential statistics used to test the research hypothesis was Chi square(X^2)

Model specification

The Chi square(X^2) test was specified as follows:

$X^2 = \sum(O_i-E_i)^2/E_i$

Where X^2= Chi square test

O_i = Observed frequency (Observed frequency counts of labour type utilized in a particular yam farming operation)

E_i = Expected frequency (column total × row total ÷ grand total)

$\sum$ = summation

Df = (r-1) (c-1)

Where r= row (3) {family labour, hired labour and exchange labour}

c=column (7) {land clearing, mound making, planting, weeding, staking, fertilizing and harvesting}

thus df= (3-1) (7-1) =12

Significant level =0.05%

Results and Discussion

Distribution of Respondents based on Socio-economic Characteristics

Table 1 shows the distribution of respondents based on their socio- economic characteristics. The findings showed that most (66.7%) were males, a larger proportion (40.5%) were above 51 years and above, majority (64.3%) were married, more than one third (46.3%) had secondary education, 53.9% had household size of

above 6 persons, and 46% had farm size of between 1-2 plots. These findings show that yam farming in the study area is dominated by males, a larger number among the respondents are married and can read and write with a sizeable family labour available to be used. The implication of this result is that most of the young ones are not involved in yam farming may be as a result of migrating to urban areas to seek for greener pastures thereby resulting to the dwindling availability of active labour to be utilized in rural areas. This result is similar with the study carried out by Kalu, Nnabue, Edemodu, Agre, Adebola, Asfaw & Obidiegwu (2023) which reported that cultivation of yam was dominated by males, majority (70%) had access to both primary and secondary education and the mean age of those involved in yam cultivation in south east and south south, Nigeria were 49.7 years and 48.6 years respectively.

Table 1: Socio-Economic Characteristics of Respondents

Variables	Category	Frequency	Percentage (%)
Sex	Male	84	66.7
	Female	42	33.3
Age(years)	21-30	20	15.9
	31-40	22	17.5
	41-50	33	26.1
	>51	51	40.5
Marital status	Single	17	13.5
	Married	81	64.5
	Divorced	7	5.6
	Widowed	21	16.7
Educational qualification	Non-formal education	23	18.3
	Primary education	27	21.4
	Secondary education	59	46.3
	Tertiary education	17	13.5
Household size	1-3	11	8.7
	4-6	47	37.3
	>6	68	53.9
Farm size(plot)	1-2	58	46.0
	3-4	37	29.4
	>4	31	24.6

n=126

Field survey, 2024

The results on Table 2 reveal that family and hired labour were the most common types of labour utilized in the study area for yam production with mean score values of 3.39 and 3.19 respectively. The least utilized type of labour was exchange labour with a mean score of 2.63. This indicates that family labour plays a central role in yam cultivation. These findings align with Takane (2018), who, in his study on labour use among smallholder farmers reported that family and hired labour were the

predominant sources of labor. The author further emphasized the importance of family labour stating that with the lack of mechanization in agricultural production especially in the rural areas, the availability of family labour is a prerequisite for households aiming to expand their farm sizes.

The results on Table 3 show the various farming operations associated with yam production and the types of labour used in performing each of the operations. The results reveal that 41.3% of the farmers used family labour for land clearing. Hired labour was used by 63.5% of farmers for mound making, 69.9% and 69% used family labour for planting and fertilizer application respectively. Furthermore, 37.3% employed hired labour for weeding, the majority (65.1%) used hired labour for staking, and 45.2% used family labour for harvesting. Only a few respondents used exchange labour for the following farm operations: land clearing (23%), mound making (23%), weeding (30.1%) and harvesting (14.3%). The implication of this result is that respondents in the study area utilized different types of labour in performing a given farming operation. The general trend in the results shows that the most widely used labour was family labour followed by hired labour. This could be associated with the fact that majority of the respondents were peasant farmers who cultivated small portions of land where family labour can be effectively used. It could also be assumed that different farmers use different types of labour to perform different farming operations depending on what is available and the farmer's economics status. This result agrees with that of Oluyole (2011), which noted that yam production involved a range of operations with varying labour requirements, but farmers generally utilized labour that suited their economics ability, cost of the labour and its availability.

Table 4 is a summary of the result of chi square test of association between farming operation and labour type utilized. From the table, the chi square value calculated (145.87) with degree of freedom (12) at 0.05 significant level is greater than the P-value 21.03; this shows that there is a statistically significant association between farming operation and labour type. This implies that the choice of farm labour by a respondent in the study area is not at random across yam farming operations but varies significantly depending on the farming operation. The implication of this result reveals that physically demanding farming operations requires physical strength as well as specialized skill for efficiency. The results are in line with the study carried out by Adejobi *et al*. (2021) which reported that labour utilization varies by tasks, with hired labour primarily engaged when physical strength and specialized skills are required.

Table 2: Distribution of respondents according to type of labour used

Types of labour	Total sore	Mean score	Rank
Family labour	428	3.39	1st
Hired labour	403	3.19	2nd
Exchange labour	332	2.63	3rd

Field survey, 2024

Table 3: Distribution of respondents based on labour type utilized across different yam farming operations

Variables	Family Labour		Hired Labour		Exchange Labour		Row Total	
Farming Operations	F	%	F	%	F	%	F	%
Land clearing	52	41.3	45	35.7	29	23.0	126	100
Mound making	17	13.5	80	63.5	29	23.0	126	100
Planting	88	69.9	38	30.2	0	0.00	126	100
Weeding	41	32.5	47	37.3	38	30.1	126	100
Staking	44	34.9	82	65.1	0	0.00	126	100
Fertilizing	87	69.0	39	30.9	0	0.00	126	100
Harvesting	57	45.2	51	40.5	18	14.3	126	100

Field survey, 2024

Table 4: Summary table of chi square (X^2) test of association between farming operation and labour type utilized

Statistics	**Value**
Chi square (X^2)	145.87
Degree of freedom(df)	12
P-value	21.03
Significance level(α)	0.05
Decision	Reject H_o

Source: Result from data analysis

The results on Table 5 show the distribution of respondents according to perceived factors influencing labour utilization in the study area. From the results, it was found that labour availability in the area was perceived to be influenced by high cost of labour ($\bar{X}$ =3.34), household size ($\bar{X}$=3.04), small farm size ($\bar{X}$=2.75) and rural urban migration ($\bar{X}$=3.58). The implication of these results is that labour availability for yam production is majorly influenced by rural urban migration as it ranked 1st with mean score of 3.58, followed by high cost of labour with mean score of 3.34. The high cost of labour for yam farming could be as a result of limited labour supply especially at the peak of the season when most of the youths migrate to urban areas to seek for white collar jobs. This result is similar to the study carried out by Adesiyan *et al.* (2024) which reported that increase in demand for farm labor especially during peak seasons result to high

cost due to the law of demand and supply ceteris paribus.

Table 5: Perceived factors influencing labour utilization in yam farming

Factors	Total score	Mean score	Rank
High cost of labour	421	3.34	2nd
Household size	383	3.04	3rd
Farm size	346	2.75	4th
Rural urban migration	451	3.58	1st

*Mean score ≥ 2.5 benchmark
Field survey, 2024

Conclusion

The study showed that yam farming in the study area was dominated by males, most of the respondents were married, had some level of primary and secondary education, were not in their youthful age as well as involved in small scale farming. Most of the farming operations used family labour and less of hired labour. This could have a serious implication on yam production as some tasks may be too tedious to execute by the older ones, as well inability to hire labour because of high cost. The result of the hypothesis showed a statistically significant association between yam farming operation and labour type utilized in the study area. It therefore concludes that the choice of labour in yam farming operation is not done randomly but varies significantly depending on the operation involved.

Recommendations

Since rural urban migration and high cost of labour were perceived as the major factors influencing labour utilization in the study area, government should supplement manual labour by distributing tractors to rural farming communities especially those involved in yam production as well as engage the services of tractor operators so as to address the problem of yam farming operations that is physically demanding, thereby making yam farming a lucrative enterprise as well as discourage the migration of the young ones from rural to urban areas.

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