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Family Labour Utilization among Small Scale Arable Crop Farmers: Evidence from Akoko South West Local Government Area of Ondo State, Nigeria

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Abstract

This study focused on the use of family labor by arable crop farmers in Ondo State, aiming to understand their involvement in farming and its implications for income and employment generation, particularly for the youth. The research specifically assessed the availability of family labor and its utilization level among farmers. A two-stage sampling procedure was employed to select 120 arable crop farmers across the Local Government Area of the State. Data were gathered using structured questionnaire and interviews for quantitative analysis, and Focus Group Discussions (FGD) for qualitative insights. The data were analyzed using Ordinary Least Squares (OLS) at a 0.05 significance level, and qualitative data were transcribed following standard transcription guidelines. The findings revealed that only 31.9% of the respondents utilized family labor, with 21.0% of this labour comprising the farmers' direct children. Family labor was primarily employed for activities like planting ($\overline{x}$ = 3.31), weeding ($\overline{x}$ = 2.72), processing ($\overline{x}$ = 2.13), and fertilizer application ($\overline{x}$ = 2.01). The OLS results indicated that age (t = -4.28; p < 0.000), years of experience (t = -5.96; p < 0.000), and farm size (t = 4.16; p < 0.000) significantly and positively influenced the use of family labor. The study concluded that arable crop farmers predominantly relied on hired labor, with family labor being employed for less physically demanding tasks, excluding land clearing and tree felling. It is recommended that the government should design a programme that could encourage youth to stay in the farming communities with the primary aim of making them available for family labour.

Keywords: Arable crops, Evidence, Family labour, Farmers, Small scale, Utilization

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INTRODUCTION

Agriculture employs over 60% of the Nigeria population and most of the farmers engage in the production of arable crops such as rice, yam, cassava, sorghum, maize, and soybean among other annual crops (Adebayo and Olagunju, 2015 and Ogaji et al., 2023). It is therefore a strategic crop category to combat poverty and hidden hunger (FAO, 2010).

Furthermore, it boosts the economy by turning out labour for industries, increases food production and booms domestic market for industrial goods. Apart from food production, it is a precondition for economic growth and development (Ujah and Okoro, 2009), especially in Nigeria where it engages more that 60% of the population (Onubuogu et al., 2014) as labour force either directly or indirectly. Thus, production of arable crop plays dominant role in job creation and livelihood for a major part of the society, and essentially, it creates values and wealth for the teaming population (NEPAD, 2013).

Agriculture entails essentially the production of crops and rearing of animals and among the common crops grown, arable crops are grown by almost all households in Nigeria (Onubuogu et al., 2014). These crops contribute to the share of agriculture in the country's GDP and possess a great potential comparative advantage to compete in the liberalized economy (Mohammed and Isgin, 2016). Similarly, either one arable crop or the other is grown by almost every household in Nigeria (Onubuogu et al., 2014). According to Marjanovic (2017), arable crops encompass a number of crops grown and reach gestation period within a year and these include grains, pulse, oil, forage, fiber, and tuber crops. Most common among these crops in Nigeria are, maize, rice, wheat, millet, lentil, soybean, cowpea, cotton, jute, potato, cassava and yam. Also, most arable crops, apart from being a food crop have equally become a commercial crop on which many agro-based industries depend on for raw materials (Oluwatayo et al., 2008). In crop and annual production, several resources are needed and among the resources, labour is very essential. The labour could be either hired or family. The family labour in most cases is underutilized and the cost are not usually accounted for. In recent time, in Nigeria, labour use has been an issue of concern and this may be responsible for decline in crop production. This is because Amaza and Maurice (2005) reported a sharp deterioration in the productivity of Nigeria’s agriculture and investigation revealed that lack of labour in rural areas contributed to this decline.

The role of family labor in Nigeria, particularly within its rural sectors, is a significant aspect of the country's socio-economic fabric. In these communities, family labor not only constitutes a primary source of employment but also plays a pivotal role in sustaining agricultural operations and other family-run businesses (Mohammed and Isgin, 2016). This form of labor, deeply ingrained in cultural traditions, ensures the transmission of skills and knowledge across generations, promoting a sense of ownership and responsibility among family members.

Technological advancements have emerged as a dynamic force influencing various aspects of the Nigerian economy, particularly in rural areas. These changes are pivotal in reshaping employment patterns, enhancing productivity, and altering the functional income distribution within these communities. The adoption of new technologies in agriculture and small-scale industries can significantly boost output, improve efficiencies, and pave the way for the diversification of rural economies. However, this transition also presents challenges, particularly in terms of workforce adaptation and the potential displacement of traditional labor practices (Ujah and Okoro, 2009).

The significance of labor in any economy cannot be overstated. As Schneider (2005) points out, labor is not just an economic factor; it holds profound social implications as well. Engaging the labor force effectively can mitigate various social issues, including poverty, unemployment, and crime. Labor's multifaceted role extends beyond its economic contributions; it fosters social cohesion, enhances the quality of life, and promotes societal stability.

Moreover, labor's interplay with other factors of production—land, capital, and entrepreneurship—is crucial for economic development. As a critical factor of production, labor influences the efficiency of other resources and drives innovation and growth. In the global context, labor dynamics are evolving, influenced by factors such as globalization, technological innovation, and demographic changes. These trends underscore the importance of adapting labor policies and practices to meet contemporary challenges and harness opportunities for sustainable development.

Therefore, the nexus of family labor, technological change, and economic and social roles of labor underscores the complex interdependencies shaping Nigeria's rural economy and its broader socio-economic landscape. Addressing these dimensions holistically can contribute to more inclusive and sustainable development, leveraging labor's potential to catalyze progress across multiple domains.

Some studies of labor use patterns among farmers in Nigeria, highlights the critical reliance on human labor in agricultural production, especially for smallholder arable crop farmers who constitute a significant portion of the agricultural output in Nigeria, ranging from 50 to 60% (Olayide, 2002; Ogaji et al., 2023). The findings indicate that contract labor is predominantly used for various farming activities, with male labor being the primary workforce. There is a suggestion for increased financial support for farmers to afford contract labor and an advocacy for the adoption of machinery to reduce labor intensity. This research underlines the importance of understanding labor patterns to enhance agricultural productivity and development

In Nigeria, agriculture is commonly practiced in the rural areas and currently, the rural areas are deprived of basic amenities, which makes young people who are potential labour force for agriculture to migrate at alarming rate to urban centres where there are relatively better social amenities. This makes labour very scarce and it is a major constraint to food production in Nigeria (Anyiro et al., 2021). The scarcity of labour in agriculture in Nigeria would have resulted to the use of family labour in a situation where they available. The availability of labour has been found to have impact on planting precision, better weed control, timely harvesting and crop processing (Oluyole et al., 2007). According to Tanko et al. (2006), Nigeria’s food deficient situation has been worsened by declining farm productivity owing to inefficient production techniques, poor resource base and insufficient farm labour supply among others. Labour has been found to constitute a large proportion of cost in the food crop production process in Nigeria and inadequate supply of labour coupled with the use of crude implements which impedes farmers' ability to increase production have been attributed to poor productivity of food crops. Therefore, a study of the utilization of family labour would be very apt in determining the availability and level of utilization in food production in Nigeria.

Based on the identified research gap, the study was designed to assess the level of utilization of family labour among arable crop farmers in Akoko South Local Government Area, with a view to unraveling issue associated with family labour usage. Specifically, the study profiled the demographic characteristics of arable crop farmers, examined level of utilization of family labour and identified the variables that influence the use of family labour among respondents

MATERIALS and METHODS

The study was conducted in Akoko South West Local Government Area of Ondo State Nigeria. Akoko South-west Local Government Area is a Local Government Area with her headquarters in Oke-Oka, consisting about 15 communities with an approximately area of 226km and a population of 229,486 at the 2006 census (National population commission, 2006). Farmers in the LGA grow food crops and other cash crops for both domestic consumption and export. The common food crops common to the LGA are cassava, yam, groundnut, cocoyam, maize, tomator, pepper and many other annual crops while cash crops like cocoa, cashew, citrus, plantain, are also being cultivated alongside with these arable crops.

Farmers who produce arable crop and that cultivated less than two (2) hectares of farm land formed the population of this study. Simple random sampling techniques were used for this study. The appropriateness of this techniques was due to the fact that there is no prior information about the target population as no proper registered was found at the LG secretariat for arable crop farmers. Therefore, six out of the fifteen communities within the local government area were randomly selected. Secondly, twenty arable crop farmers were randomly selected in each of the selected six communities to form a total of one twenty (120) farmers used as the total sample size for this study. However, one (1) of the questionnaire used was expunged as it was not properly filled. This makes the total sample size used to be 119 arable crop farmers. Primary data were used for this study and they were collected with the use of questionnaire and interview schedule while Focus Group Discussion was used to collect qualitative data. Data collected were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequencies, percentages and mean while inferential statistics such as multiple regression analysis was used to make inferences.

RESULTS and DISCUSSION

Socio-economic profile of farmers

Evidence in Table 1 shows that 58.0% and 42.0% of the sampled farmers were male and female respectively. This shows that both male and female arable crop farmers in the study area were involved in the cultivation of arable crops in the study area. It is observed that almost equal proportion of both sexes participated in the production of arable crops. The implication of this finding is that arable crop production may not have any gender barrier in the study area. This finding is against the finding of Bassey and Okon (2008) who established that females were more involved in the arable crop production in the study area. The result shows that most of the farmers were found between 40 and 49 years while reasonable proportion (22.7%) of them were found as 50 years and above. The means age of 49.63 years shows that most of the sampled farmers are still within their productive ages.

The implication of this finding is that farmers sampled for this study seem to be at their productive and active ages, which are useful as farmers' productive ages. This contradicts the study of Alao et al. (2013) that says most of the respondents are 58 years.

Furthermore**,** results show that 86.6% of the respondents were married and 13.4% were single. This means that majority of the respondents were married. The implication of this study is that respondents who were married work together with their spouse to support optimal production of their arable crops and to promote their livelihood. It also means that they contribute more to farming in terms of labor. This could reduce the need for hired labour. It was also shown that 27.7% of the respondents has no formal education, 24.4% has primary school education, 39.5% has secondary school education while 8.4% has tertiary school education. The finding shows that most of the respondents were found having secondary school education. This study rejects the notion by Alao et al. (2013) that an average proportion of the respondents had no formal education.

In addition, results show that the mean number of years spent in school was approximately 14 years with a standard deviation of approximately 4 years. The implication of this finding is that on average, sampled respondent had primary education. At the same time, the difference between the respondents' educational status does not differ significantly with the low standard deviation, which is the interpretation of the deviation from the mean. The finding is in consonant with the study of Alao et al. (2013) that states that majority of the farmers were illiterate without any form of schooling experience in terms of the numbers of years spent in formal education. Also, it was revealed that respondents were experienced with average experience of 23 years approximately with a standard deviation of approximately 9 years. The implication of this finding is that on average, respondents had much arable arable farming experience. This is likely to impact positively on arable crop production as experienced have been found to enhance the use of improved technology. Experienced people are believed to have learned through several years of trials and errors. This is in line with the study of Bassey and Okon (2008)

Similarly, results show that the mean size of sampled farmers' farm was 1.3 hectares of land with a standard deviation of 0.13 hectares. The implication of this finding is that farmer's farm size are small which also makes the standard deviation low. Small farm size of the respondents influenced the choice of family labour. This is in line with an expectation of farmers opting for family labour to meet their small-scale farm requirements. This study is against the study of Alao et al. (2013) that states that farm size of the respondents is 9.12 hectares.

Family labour utilization and level of use

This finding shows where farmers make use of family labour the more, which are; planting, weeding, and fertilizer application. Specifically, labour was mostly used for planting ($\bar{x}$=3.31), weeding ($\bar{x}$=2.72), food processing ($\bar{x}$- 2.13) and fertilizer application ($\bar{x}$=2.01) based on the results in Table 2. The implication of the result is that, to get maximum yield in arable crop production, there will have to be maximum labour in land clearing, weeding and food processing. This study is in support of the study of Albert et al. (2020) which states that farmers use family labour more in weeding, planting, application of fertilizer, unity in task execution, safe guard for food security and traditional practices in agriculture.

This study elucidates the predominant utilization of family labor in agricultural activities such as planting, weeding, and fertilizer application. It highlights that the intensity of labor usage varies across different tasks, with planting receiving the highest labor input, followed by weeding and fertilizer application. The results underscore the critical role of labor in enhancing productivity in arable crop farming. Echoing Albert et al. (2020), the findings reaffirm that strategic employment of family labor in these key activities not only promotes efficiency and yield but also aligns with traditional agricultural practices and contributes to food security. This comprehensive understanding underscores the importance of optimized labor allocation in farming operations to ensure sustainable agricultural outcomes.

Availability of family labour for farm work

The finding in Table 3 shows that the farmers' children, extended family are not really available for farm work than their husband/wife. The implication of the study is that children may not have any interest in farm work, some may not have the ability to be involved in such tedious work and they leave their parents alone doing the work. It also implied that extended family does not really have any contribution to farmers' farm because some may also have their own farm to work on and having no or limited time to work on another person's farm. The findings reveal the unavailability of family labour for farm work. This conforms to the findings of Yusuf (2018), which supported the unavailability of family labour for most farm practices in Nigeria. The non-availability of family labour for farm work was attributed to lack of social amenities based on the excerpt from the FGD conducted in Supare Akoko as transcribed thus: …many of our children leave the community for urban cities because of lack of social amenities such as school, roads, electricity, portable water and even health centre. Many of them are in the state capital using motorcycle to work as transporters. They hardly come home as they believe that leaving in the cities make them better…Excerpt from FGD at Supare in Akoko South West Local Government Area.

The above analysis that indicates limited availability of children and extended family members for farm work suggests a potential shift in family labor dynamics within agricultural practices. This shift may reflect broader socio-economic trends, such as the lack of interest among younger family members in farming, possibly due to the arduous nature of farm work or more attractive opportunities elsewhere. The limited involvement of extended family could be attributed to their own agricultural commitments or the allure of better infrastructural facilities in urban areas, leading to rural-urban migration, especially among the youth. These patterns support Yusuf's (2018) findings and highlight a pressing challenge in sustaining family labor within the agricultural sector, underscoring the need for strategies to engage younger family members or compensate for this labor shift to maintain farm productivity.

Determinants of family labour utilization

Result in Table 3 shows the relationship between selected socio-economics characteristics and utilization of family labour. It was observed that age ($t=4.28$; $p<0.000$), years of experience ($t=5.96$; $p<0.000$) and farm size ($t=4.16$; $p<0.000$) were the significant variable that had positive influence on the utilization of family labour in arable crop production in the study area. The implication of this finding may be connected to the fact that farmers who are still economically active, having large farm size with long time experience in farming would probably use family labour more than those farmers who are aged. The findings underscore the significant correlation between certain socio-economic factors—namely, age, years of

experience, and farm size—and the utilization of family labor in arable crop production. The data suggests that younger, more experienced farmers with larger farm holdings are more inclined to employ family labor. This could be interpreted as a reflection of more extensive operational needs and a greater capacity for mentorship and task delegation within larger family-run farms. Additionally, experienced farmers likely have a deeper understanding of the efficiencies family labor can bring, optimizing the blend of tradition and expertise to enhance productivity and sustainability in their farming practices (Yusuf, 2018). Such insights offer valuable implications for agricultural policy and family labor management strategies, emphasizing the need to consider demographic and experiential dynamics in agricultural development planning.

Table 1. Socio-economic characteristics of arable crop farmers

Sex	**Freq. n = 119**	**%**	**Mean**	**Std. Dev.**
Male	69	58.0		
Female	50	42.0		
Age (in years)				
<30	13	10.9		
30 – 39	24	20.2		
40-49	55	46.2	49.63	
50 and above	27	22.7		
Marital Status				
Married	103	86.6		
Single	16	13.4		
Level of education				
No formal education	33	27.7		
Primary school education	29	24.4		
Secondary school education	47	39.5		
Tertiary school education	10	8.4		
Number of years spent in school			13.76	3.69
Years of farming experience			22.11	8.45
Farm size (hectares)			1.25	0.13
Members of Co-operative/association	41	34.5		
Access to subsidy from government	11	9.2		
Major sources of capital for farming				
Personal savings	66	55.5		
Credit borrowed	13	10.9		
Family	40	33.6		
Access to credit	9	7.6		
If yes, number of times in last one year			1.41	0.09
Visited by an extension agent	5	4.2		
If yes, no of times in the last one year?			1.98	0.18

Source: Computed from field survey, 2022.

Table 2. Family labour utilization and level of use among arable crop farmers

	Utilize family labour		**Level of utilization**	
Farming activities	**Freq.**	**%**	**Mean**	**Std. Dev.**
Land clearing	31	26.1	101	0.04
Tree felling	12	10.1	0.61	0.12
Burning	29	24.4	1.16	0.19
Making of ridges	12	10.1	1.12	0.35
Planting	67	56.3	3.31*	0.14
Weeding	75	63.0	2.72*	0.27
Mulching	55	46.2	1.81	0.21
Staking of crops	31	26.1	1.18	0.12
Application of herbicides	27	22.7	1.13	0.08
Application of fertilizers	72	60.5	2.01*	0.88
Planting of crops	47	39.5	1.27	0.32
Application of fertilizers	43	36.1	1.27	0.71
Harvesting	59	49.6	1.87	0.24
Food processing	72	60.5	2.13	0.24

*Source: Computed from field survey, 2022 *Mean > 2.00 = High level of use*

Table 3. Availability of family labour for farm work

Major sources of your labour	**Freq.**	**%**	**Mean**	**Std. Dev.**
Is family member the major labour used?	38	31.9		
Is hired the major labour used?	111	93.3		
Are your children available for farm work?	25	21.0		
Do you have extended family available for farme work?	16	13.4		
Is your wife /husband available for farm work?	39	32.8		
Do you live in the farm house within the farm?	14	11.8		
Are you happy living in the farm house?	14	11.8		
How many hours do you work per day?			6.19	1.36

Source: Computed from field survey, 2022.

Table 4. Determinants of utilization of family labour

Variables	**B. coeff.**	**Std. Err.**	**t-stat**	**Sig.**
Age	2.78	0.65	4.28**	0.000
Number of years spent in school	0.29	0.19	1.53	0.671
Years of experience	1.55	0.26	5.96**	0.000
Farm size	3.16	0.76	4.16**	0.000

Source: Computed from field survey, 2022. R- Squared value = 0.691, Adjusted R-squared value = -0.163
***Significant at 0.01 level of significance*

CONCLUSION and RECOMMENDATIONS

Labour is one of the most limiting resources in crop production. Given that the dominant structures for agricultural production are family farms, this paper investigates the use of family labour in Akoko South West Local Government Area of Ondo State, Nigeria as a case study. The study shows that family labour was not seriously used for most agricultural practices and the non-use of family labour would imply that cost of production would be high among the respondents, although the findings establish that family labour was not also available but the available ones were used for the none tedious agricultural practices like planting, wedding and fertilizer application. The findings recommend that farmers should make use of the available family labour in order to reduce cost of production. Also, government should provide basic amenities to the rural communities in order to encourage the stability of labour with a view to enhancing their utilization.

Labor scarcity is a critical constraint in crop production, particularly in settings where family farms predominate, such as in Akoko South West Local Government Area of Ondo State, Nigeria. This study highlights a paradox: while family labor is a vital resource, it is underutilized for intensive agricultural activities. The tendency to employ family labor for less demanding tasks like planting, weeding, and fertilizer application suggests an opportunity to optimize this resource for greater economic efficiency. To address labor underutilization and high production costs, the study advocates for strategic engagement of available family labor.

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