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**LABOUR UTILIZATION IN PEASANT AGRICULTURE: A
SURVEY OF FOUR LOCAL GOVERNMENT AREAS OF
KWARA STATE, NIGERIA**

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ABSTRACT

Given the low level of involvement of rural labour force in achieving a sufficient level of output in Nigerian agriculture, this study explores the factors affecting labour utilization in four Local Government Areas of Kwara State during the 1990 farming season. A total of 120 farming households were interviewed.

Results indicate that about 73 percent of rural farmers were young (≤ 50 years) but the family were large (average of 13). With a low literacy level and small average farm holdings, the mean annual farm income was low (N4,217). Four major factors; family size, land area cultivated, household income of the farmer in the preceeding year and health status of the farmers were significant variables explaining about 63.7% of the variability in labour utilization. Policy aimed at improving labour productivity in the study area and other areas having similar experiences should focus on these four factors.

Introduction

Nigerian agriculture has not divorced itself from most of the characteristic of a peasant economy that were prominent in the pre-independence period. Peasant farming constitutes the nucleus of Nigerian agriculture, producing about 90 percent of food and fibre for the Nigerian population. In addition it offers employment to about 80 percent of the population.

Farmers employ the traditional hoe-cutlass technology. This is combined with little capital in the form of small land area, tool

⁺⁺ For future correspondence.

and operating cost to finance the farming activities. This traditional technology is labour intensive and irksome. It is also characterized by fragmented holdings. These holdings are too small (average of 4 Ha per family) to give adequate support for the use of farm machinery (ODA, 1994).

In traditional agriculture, the main sources of farm labour are the household and the labour market. The small holder farmer transforms his available time into labour work. This labour is either consumed on the farm or sold for money or traded for goods and services or allocated to leisure (Cleave, 1967). Despite the concentration of people in the rural areas that are capable of producing enough to feed the nation in terms of providing the man-power needed to produce it, food production in the country presently is far from reaching its full potential. It is a general consensus that there exist large labour force in the rural areas (Upton 1987). Since Nigerian agriculture is labour intensive with little or no hope of technological innovations in terms of farm mechanization on a large scale in the nearest future, the development, management and upkeep of its human labour resources is of imperative importance (Nwoko, 1984).

The relevance of this study to the present farmers is borne out of the fact that these peasants are the nerve centre of the Nigerian agricultural economy, they are collectively responsible for a greater percentage of the food consumed in the country (Olayide et al, 1980). Increasing growth is being recorded in the rural population and their potentiality for agricultural production is very high.

The low involvement of the rural force in achieving a sufficient level of output is a cause for concern, because the low level of involvement of labour constitutes a major setback in the Nigerian agricultural development.

This study attempts to:

- (a) explore the factors affecting labour utilization in the study area;
- (b) examine the pattern of labour use for various farm activities; and
- (c) identify other sectors of production that compete for farm labour apart from farming activities.

Methodology

(a) Area of Study

The area covered by this study are Ilorin, Asa, Moro and Ifelodun Local Government Areas of Kwara State, Nigeria. The area has an estimated population of 979,403 (1991, Provisional Census). Major occupation of the people in the area is farming and most are peasant farmers. Major crops grown in the area are Yam, Sorghum, Cassava, Maize, Melon, Cowpea and vegetables.

Field survey was the major source of information for this study. Primary data were obtained from the field by the use of structured questionnaires administered on 120 farming Households (30 from each LGA) randomly selected from the four Local Government Areas covered. These were supplemented with secondary data collected from relevant publications.

(b) Methods of Analysis

Data collected were subjected to simple statistical analysis. Regression analysis was used to assess the farmers age (X_1), farmers' household size (X_2) which was measured as the total number of people living in the farmers' household and eating

from the same pot, total hectarage cultivated by the household in 1990 production year (X_3), Household Income of the respondents in the preceeding production year (1989) in Naira (X_4), Health status of the farmers in 1990 production year which assumed for this study to be the total number of days of absence of the farmers from the farm for the 1990 production year (X_5) and mechanization level of the farm (which is a dummy variable with mechanized farming scoring 1 and non mechanized farming, zero) on total hours of labour utilized in 1990 production year in man-days (TLHU).

The implicit functional form estimated is

$$TLHU = f(X_1, X_2, X_3, X_4, X_5, X_6, U)$$

Where U = stochastic error term and other variables are as defined above.

Various functional forms: linear, semilog, and Cobb Douglas functions were tested and based on the magnitude of the co-efficient of multiple determination, the F-ratio, t-statistics and theoretical expectations based on the nature of function considered, the equation that best fits the model was selected.

For least squares estimates of the regression co-efficients to be unbiased and of minimum variance, the error term being a stochastic variable is assumed to be normally, identically and independently distributed with a mean zero and a constant variance.

The independent variables are also assumed to be truly exogenous variables i.e. independent of the error term. It is further assumed that there is no exact linear relationship between the explanatory variables.

EMPIRICAL RESULT

Age

The age of the farmer is very important to his production activities as older farmers are not likely to be able to work as much as younger ones. Older farmers are also less likely to try new ideas. Analysis showed that the average age of farmers in the sample was 43.8 percent. About 72.5 percent of the respondents were less than 50 years. With the provision of adequate incentives and effective planning of labour, most of the respondents can still increase their productivity. The modal age class is 31 - 40 years consisting of 46 percent of the respondent (Table 1).

Table 1: Age Distribution of Respondents

Age Class	Frequency	Percentage
21 - 30	5	4.16
31 - 40	46	38.33
41 - 50	36	30.00
51 - 60	30	25.00
61 - 70	3	2.50
Total	120	100

Source: Field Survey (1991)

Household Size

Majority of the farmers have fairly large family sizes which is essential for successful farm operations. Family labour is the cheapest source of labour. It constitutes a prime importance in

the rural farming sector. Analysis revealed that the mean family size of the respondents is 13.

About fifty-eight percent of the farmers used both hired and family labour, while only 16.8 percent of the respondents hired labour. Twenty-five percent of the respondents rely on family labour for their farm operations.

Educational Level

The respondents are highly illiterate with 52.5 percent of the respondents having no form of education. About 19 percent of the farmers went through adult literacy class, 18.3 percent had primary school leaving certificate; only 8.3 percent had secondary school education and the remaining 1.67 percent had post secondary education (Table 2). This low level of literacy may lead to the inability of the farmers to adopt various policies that might improve efficiency of labour use on their farms and also adoption of innovations by these group of farmers will be slow if not impossible.

Table 2: Educational Background of Farmers

Educational Level	Frequency	Percentage
None	63.0	52.50
Adult Education	23.0	19.16
Primary School	22.0	18.33
Secondary School	10.0	8.33
Others	2.0	1.67
Total	120.0	100.0

Source: Field Survey (1991)

Farm Size

Analysis revealed further that the average household farm size in the area was 2.1 hectares. About 60 percent of the respondents had farm sizes between 1.0 and 2 hectares (Table 3). This confirms the peasant nature of the farmers with small farm holdings which they can manage effectively with their limited resources. Only 2.5 percent of the respondents had fairly big farm of between 5 - 6 hectares.

Table 3: Distribution of Respondents by Size of Household Farm Holdings

Size (Hectares)	Frequency	Percentage
0.1 - 1.0	2	1.67
1.1 - 2.0	68	56.66
2.1 - 3.0	37	30.83
3.1 - 4.0	8	6.67
4.1 - 5.0	2	1.67
5.1 - 6.0	3	2.50
Total	120	100

Source: Field Survey (1991)

The farmers obtained their farm land through family inheritance, purchasing and rent. About 73.3 percent of the farmers acquired their farming land through inheritance. This may be a limiting factor to expansion of farm size since the land belongs to the family upon which no single individual can claim. Only six (5 percent) of the farmers bought their farm land. Twenty-six (21.67 percent) respondents hired their farm land.

Income

The mean household income (in 1989) of the farmers in the area of study was N4,217.70. The modal household income bears a significant prove of the smallness of the farm size.

The use of commual labour was practised by the farmers. The study showed that 55.8 percent of the respondents practiced commual labour. This is usually a form of group work among friends who agree to work on each member of the group's farm in rotation. Food is provided by the owner of the farm on the days his companions work for him. The commual labour is reverted to because of lack of money to hire labour.

Level of Mechanization

The study showed that 65.83 percent of the respondents did not have any of their farm operations mechanized. The low level of mechanization shows the peasantry of agricultural practice in the area of study and their heavy reliance on human muscle for their agricultural activities. Mechanization has been shown by Nwoko (1984 Op cit) to improve the farm situation by increasing tillage, reducing drudgery on farm and increasing output. This low level of mechanization of the farmers is not only due to the low level of income of these farmers but also due to their mixed cropping pattern. Mixed cropping will not make easy the introduction of mechanized farming on the farms as some activities in some crop mixes do not lend themselves to mechanization.

Health Status

The health of the farmer or the farm workers bears a direct relationship to their ability to work and consequently the hours of labour use. Analysis revealed that 65 percent of the farmers

had access to adequate health facilities like clinics, dispensaries and hospitals.

Competing Enterprises:

The study revealed that other sectors compete with farm labour usage. Such sectors include trading with 55 percent of the respondents utilizing part of their time on trading (Table 4). About 23 percent of the farmers engaged their labour in small scale industries while about 22 percent engaged in crafts. Fifty-five percent of the farmers responded that labour drifted to these other sectors mainly for better wage rate paid to non-farm labour. This finding supports Ogunfowora et al (1975) that the existence of abundant labour in the rural area is extremely illusory.

Table 4: Non-Farm Activities in the Study Area

Activities	No.	Percentage
Crafts	26	21.7
Small Scale Industries	28	23.3
Trading	66	55.0
Total	120	100.0

Source: Field Survey (1991)

Farming Activities

The predominant work done by adult male in the area are land clearing and cultivation. All land clearing, and mould making for farming are done by adult male. About 83 percent of weeding is done by the adult males; 50 percent of planting is also done by them. Children participation include activities like

planting (25%); fertilizer application (25%); weeding (13%); harvesting (18%); and threshing/dehusking (22%). Major role played by the female adult are threshing dehusking (55.6%); harvesting (54.5%) and planting (50%).

Regression Result

Three functional forms of regression: labour, Cobb Douglas, and semi log functions were fitted to the data. The Cobb Douglas form was selected as the lead equation based on econometric and statistical considerations as well as a prior expectations. The Cobb Douglas function selected is given as

$$TLHU = AX_1^{b_1} X_2^{b_2} X_3^{b_3} X_4^{b_4} X_5^{b_5} X_6^{b_6}$$

$$\ln = A + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + b_4 \ln X_4 + b_5 \ln X_5 + b_6 \ln X_6 + U$$

The Cobb Douglas equation has the highest R^2 of 0.64. This implies that 63.7% of the variability in the dependent variable (TLHU) is explained by the include variable (Table 6).

Four variables: farmers' household size (X_2), total hectareage cultivated by household in 1990 production year (X_3), farmers household income in preceeding year (1989) (X_4) and health status of the farmers in 1990 production year (X_5), were found to be significant at 5% level. The remaining two variables: age of respondents and level of mechanization were not significant at any reasonable confidence level. All the coefficients of the four significant variable are positively signed. The correlation matrix produced, the low standard error of estimates gave no serious sign of multicollinearity (Table 5). The positive sign of X_2 revealed the higher household size leads to more hours utilized on farming activities. Larger family size therefore tend to support farming. All the four variables have significant impact on the variability of the total labour utilized on the farm. In the

Table 5: Correlation Matrix

	TLHU	X ₁	X ₂	X ₃	X ₄	X ₅
TLHU	1.00					
X ₁	0.40	1.00				
X ₂	0.61	0.37	1.00			
X ₃	0.73	0.39	0.31	1.00		
X ₄	0.51	0.24	0.30	0.41	1.00	
X ₅	0.10	-0.18	0.10	0.05	-0.05	1.00

Source: Computer Printout.

Table 6: Regression Estimate

Functional Forms	Constant	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	R ²	F
Linear	51.34	4.58 (3.05)	11.02* (5.40)	18.58* (8.80)	7.4* (2.18)	12.76 (6.75)	-4.07 (2.54)	0.61	29.45 ⁺⁺
Semi Log	72.20	13.7 (9.12)	96.94* (47.50)	154.8* (77.09)	63.16* (20.59)	131.66 (71.17)	1.86 (1.16)	0.53	21.24 ⁺⁺
Double Log	0.828	0.059 (0.307)	0.44* (0.156)	0.667* (0.107)	0.272* (0.072)	0.567 (0.281)	-0.008 (0.123)	0.637	32.90 ⁺⁺

$$\ln Y = 0.828 + 0.059 \ln X_1 + 0.44 \ln X_2 + 0.667 \ln X_3 + 0.272 \ln X_4 + 0.567 \ln X_5 - 0.08 \ln X_6$$

OR

$$Y = 0.828 X_1^{0.059} X_2^{0.44} X_3^{0.667} X_4^{0.272} X_5^{0.567} X_6^{-0.08}$$

+ Significant at 5% Figures in parentheses are the standard error of the estimates

++ F value significant at 5%

X₁ = Age in Years

X₂ = Farmers' household in size

X₃ = Total hectarage cultivated by household in 1990

X₄ = Household income of respondents in 1989

X₅ = Health status of farmers

X₆ = Mechanization level on the respondents farms.

selected function, the regression coefficient are elasticities for the respective explanatory variables. The magnitude of these individual elasticities indicates the percentage change in total hours of labour utilized in 1990 (TLHU) in response to a one percentage change in the variable concerned, holding the other factors constant. A one percent change in farmers' household size for example will lead to a 0.667 percentage change in total labour hours utilized in the farm in 1990.

It can be concluded that the determinants of labour utilization within the scope of this study and given the level of technology are farmers' household size, total hectareage cultivated by household farmers' income in the year preceeding the year of production and health status of the farmers. All these factors have their varying effects on labour utilization in peasant agriculture.

Policy implication and Conclusions

Based on inferences from this study the following suggestions are made if productivity of labour in peasant farming is to be increased not only in the study area but in other areas having similar method of production.

Steps should be taken by government to introduce locally adaptable technology on the peasant farms at affordable prices to ease the tension of farm labour with human muscle. Mechanization reduces drudgery and increases farm productivity. This should be made available to farmers at reasonable prices.

Various reforms should also be introduced to stem down the movement of labour from agriculture. To induce the necessary stay on the farm, reforms should include: farm settlement,

efficient marketing facilities, effective farm management to ensure effective plans for labour.

Most farmers as revealed by this study have low average income. There is the need to develop an appropriate rural financial system that will support these peasants whose contribution on a national basis to GDP is consistently declining. Rural credit could be granted at low interest and appropriate time in order to attract farmers.

Since most farmers in the area of study complained of lack of health facilities, establishment of health centres in the rural area should be a priority in the national development plan, this will go a long way in improving their health status which will subsequently increase their ability to work better on the farm.

Finally having established the various factors that affect labour utilization in the study area, concrete efforts should be made to ameliorate the farm labour situation. The inferences here are however indicative and not affirmative.

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