

Economic activity status of the Nigerian Rural Population

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Abstract

This study investigates and identifies important variables determining economic activity status of rural dwellers in Nigeria. The result shows that the household size, literacy rate and unemployment rate are statistically significant variables determining participation rate.

Based upon the findings of the study, and in view of the fact that majority of Nigerians reside in the rural areas, the paper suggests policy measures that will enhance participation rate in the rural economy of Nigeria.

Introduction

The vast majority of Nigerians are located in the rural areas and a good number of them are engaged in farming (F.O.S. 1985a). In addition, the remaining few engage in other non-farm small-scale economic activities such as barbing, shoe-making, hunting, tailoring, blacksmithing and so on. These activities are carried on at a subsistence level and in most cases they are combined with agricultural pursuits.

Therefore, most rural households are poor as about 86 per cent of them earn less than ₦200.00 per month (F.O.S., 1985a). One explanation for this state of affair is the nature of agriculture which is the single most important occupation of the rural dwellers. Agricultural activities are highly dependent on nature and this affects the level of production — good harvests when the weather conditions are favourable, and poor harvests otherwise. Even bumper harvests do not automatically guarantee higher incomes due to low price elasticity of demand for farm products on the one hand, and the fact that “farmers sell at cost or at wholesale prices while they pay retail prices for farming inputs and other consumer goods”, on the other (Anker, 1973).

Furthermore, agriculture is an occupation that is governed by diminishing returns as increased use of variable factors (labour or materials e.g. fertilizer) on a given piece of land will, in the long run, lead to decreasing returns. Other economic activities carried on either mainly or together with agriculture are carried on at subsistence level due to low level of capital, the use of obsolete technology, low skill level, low accessibility to credit facilities, among others. All these have resulted in low level of productivity, and low income per capita in the rural, as compared to the urban sector. Thus, gross underemployment and low living conditions prevail in the rural sector.

In spite of the observed poor living conditions of the rural populace, the natural rate of growth of population in the sector is high, leading to more poverty. Describ-

ing the sorry state of the working poor in Asia, Visaria P. (1980 p. 219) observes that:

“... at a very rough level of generalization the poor are characterised by larger households, with a higher proportion of children aged less than 15 years and therefore higher dependency ratios, lower ‘crude’ labour force participation..., low endowment of human capital or education, less access to white-collar job, and more concentration in agriculture...”

The high fertility rate results from high social values placed on children. Investment in child rearing is, to them, a form of procuring additional work force as well as making provision for old age security. Moreover, the village culture permits and encourages large families and this worsens the situation of the rural poor (Caldwell, J.C. 1980; Kotter, H. 1985).

The high rate of population growth increases pressure on land; and given the land tenure system in Nigeria, most rural dwellers become landless, or at best, tenant farmers eking out a meagre and often inadequate existence on a small piece of land belonging in most cases, to an absentee landlord.

Thus conditioned by “Malthusian” forces (Redford, 1968) on one hand, and attracted by the magnetic “pull” of city infrastructural facilities on the other, most rural dwellers (especially the young and educated ones) move to the urban areas in search of better income opportunities.

Since migration is sex and age-selective, rural-urban migration in Nigeria has adversely affected the demographic balance of rural population as revealed by the sex-ratio and the age structure of rural dwellers. The 1983 labour force sample survey shows that sex ratio (the proportion of males to females) is 106.54 in the urban sector and 98.35 in the rural sector. This means that there are more females than males in the rural sector and vice versa in the urban sector. Similarly, the dependency ratio is 100 and 103.9 in the urban and rural sectors respectively. This indicates that there are fewer economically active people in the rural areas as compared to the urban areas.

Given the socio-demographic features of the rural population therefore, efforts aimed at raising the level of participation in economic activities in the rural areas is beneficial to the economy. Apart from increasing output, employment thereby generated, is a process through which learning experiences are gained and these serve as a means of relieving the growing frustration which is associated with prolonged unemployment. Also, the wage payments that go with gainful employment help in promoting a fair distribution of income and contribute to the eradication of poverty. It will also promote an improved quality of life in the rural areas.

The purpose of this paper, therefore, is to examine those factors that influence the level of participation in economic activities among the rural dwellers and discuss the measures that can strengthen those factors that foster the growth of participation.

This paper is divided into four parts. The basic model used and its results are discussed in parts II and III respectively, while the last part gives the conclusion.

The Basic Model

Labour force participation rate is the ratio of the economically active population (whether currently employed or not) to the total population. It can be taken to be the probability that a person of a certain age and sex, usually in the economically active

population will be in the labour force.

In measuring the participation rate, micro- or macro-variables can be used. With individual cross-section data (micro-variables) various economic and socio-cultural factors affecting participation can be observed. Such variables include age, educational level, income, number of children and so on. In such individual analysis, participation rate is taken as a binary variable taking value 1 for participant and zero for non-participant.

Aggregate measure of participation makes use of labour market characteristics (macro-variables) such as the average level of income, percentage of the work force that is literate, the level of industrialisation, the degree of urbanisation, unemployment level, population density, and so on.

Literature is replete with studies of participation rate based on sex (male/female), race (black/white) and marital status (married/unmarried). Using cross-section individual data, Okojie (1983) identifies those factors affecting participation rate of women in Nigeria. Her basic model takes the form:

$$LFP_w = f(PC, HC) \dots \dots \dots (1)$$

where LFP_w = Labour force participation rate for women, take 1 for participants and 0, otherwise.

PC = Personal characteristics of respondents

HC = Household characteristics of respondents

Stating (1) more explicitly:

$$LFP_w = f(X_1, X_2, X_3, \dots, X_N; Y_1, Y_2, Y_3, \dots, Y_k) \dots \dots (2)$$

Where X_i ($i = 1, 2, \dots, N$) are variables measuring personal characteristics and Y_i ($i = 1, 2, \dots, k$) are household characteristic measures.

However, the result of this study cannot be generalised for all women in Nigeria as her data are drawn from the urban area of Benin. Rural women working under different labour market conditions may exhibit certain other characteristics having significant impact on labour market participation.

The study by Farouq (1973) on labour force participation by sex in Pakistan uses an aggregative model. Effects of several labour market variables were examined on participation — both 'crude' and 'refined' (p. 269). His study covers the whole country — East and West Pakistan — and highlights those factors explaining both crude and refined activity rates of the population, disaggregated by sex.

In general, economic theory suggests that:

$$P = a_0 + a_1 W_o + a_2 B + \sum_{i=3}^K a_i X_i \dots \dots (3)$$

Where P = Participation rate

W_o = Wages

B = Non-labour Income

X = Vector of other independent variables

K = number of other variables
(Joll, 1983).

For this study, aggregate cross-section data for rural areas of Nigeria are used. We begin with the hypothesis that participation rate in any given state (P_i) in Nigeria is a function of the rate of unemployment in that state (U_i); Population density (D_i), Literacy rate (L_i), Income (Y_i) and average household size (H_i).

Thus, the general form of our model is :

$$P_i = P_i(U_i, D_i, L_i, Y_i, H_i) \quad \text{..... (4)}$$

$$(i = 1, 2, \dots, 19)$$

Taking after Joll et al (1983), Okojie (1983) and Farouq (1973), we shall assume linear relationship between the dependent and independent variables. Thus, the explicit form of our model is given as:

$$P_i = a_0 + a_1U_i + a_2D_i + a_3L_i + a_4H_i + a_5Y + v \quad \text{..... (5)}$$

where a_j ($j = 0, 1, 2, \dots, 5$) are parameters and v is the error term. All other variables are as defined above.

Our *a priori* expectation in that participation in economic activity (P) will be negatively related to unemployment (u) and population density (D), while it will be positively related to Literacy rate (L) and income (Y). The direction of impact of household size (H) on participation (P) may not be easy to determine *a priori*. This depends on the age-structure of other members of the household apart from the head and spouse(s). Where the other members are children in the 0—14 age bracket, H is more likely to be negatively related to P , while the association between the two variables is likely to be positive if other members of the household are adults (Joll et al, 1983; Farouq, 1973). The data for estimating the model specified above are derived from the publications of the Federal Office of Statistics (F.O.S. 1984 and 1985a,b). Each state of the federation is taken as an observation unit and thus, we have nineteen observations for each of the variables specified in equation (5) above.

Results and Discussions

We have applied the ordinary least-squares estimating technique on our basic equation as given in (5) above. At the preliminary stage of the estimation, we examined the extent to which the explanatory variables are collinear. Some of the explanatory variables are found to be strongly collinear. As a result, we have adopted a stepwise regression procedure in order to get rid of superfluous variables.

The estimated form of our basic equation is:

$$P = 70.89 - 4.33 H - 1.818 U + 0.92 L. \quad \text{..... (6)}$$

$$(2.515) \quad (0.73) \quad (0.25)$$

$$R^2 = 0.62 \quad n = 19$$

$$F_c = 8.16$$

$$d = 2.61$$

The observed *t*-statistic, computed elasticity, and beta-coefficients for each of variables H, U, and L are as shown below.

TABLE 1: ELASTICITY AND BETA-COEFFICIENTS OF VARIABLES.

<i>Variable</i>	<i>t-statistic</i>	<i>Elasticity</i>	<i>Beta-Coefficients*</i>
H	1.72	0.30	0.295 (3)
U	2.49	0.13	0.691 (2)
L	3.66	0.33	1.028 (1)

* Note that the rank of (absolute value of) each independent variable in terms of its contribution to the dependent variable is shown in bracket beside the independent variable concerned.

Equation (6) among others gives a better result in terms of economic and statistical criteria. The standard errors of the parameter estimates are in parentheses beneath their corresponding coefficients. For our model, R^2 is 0.62; and this means that the explanatory variables in the equation explain 62 per cent of the variation in rural participation rate.

Comparing the observed *t*-statistics with the theoretical *t*-Statistic, each of the variables U and L is significantly different from zero at 95 per cent confidence level while H is significant at 90 per cent confidence level. Using the *F* - test, at (3,15) degrees of freedom it is observed that a significant association exists between the dependent and explanatory variables.

The Durbin-Watson *d*-statistic for this model is 2.61 and since this is greater than $D_u = 1.68$ in the Durbin-Watson table, the data series used in this model is serially independent.

Using Theil's (1966) inequality coefficient, our observed U - statistic is 0.0158. Since this value is closer to zero than to unity; by Theil's criterion therefore, the predictive power of the model is fairly high.

In considering the economic activity status of the rural population in Nigeria, the result of our analysis shows that participation rate is negatively related to the size of the household and the level of unemployment, while it is positively related to literacy level. Taking the first partial differential of equation (6) with respect to each of the variables gives the marginal regression coefficient of participation with respect to each variable. Thus, a unit increase in household size results in 4.33 units diminution in participation rate; a unit increase in unemployment rate leads to 1.8 units decline in participation rate; and a unit increase in Literacy rate increases participation rate by about 0.9 units.

It is a well-known fact that the size of a regression coefficient in the classical ordinary least squares model does not give a perfect measure of its relative importance. This is because regression coefficients are affected by their units of measurement.

However, the beta-coefficients which are regression coefficients of standardised variables do not suffer from this defect (Goldberger, A.S. 1964). Thus, the beta-coefficients as presented in table 1 above show that Literacy rate is the most important contributor to participation rate. Unemployment level and Household size take the second and third positions respectively.

Apart from being the most important in terms of relative contribution to participation rate, Literacy rate is also the statistically most powerful and has the highest (through inelastic) partial elasticity with respect to participation. This shows that although the proportion of the employed that are literate in the rural area is low compared to those in urban area (table 2), yet the few ones in the rural sector participate more actively in the rural economic activity.

As shown in the table below, while only about 30 per cent of rural workers are educated, about 60 per cent of urban workers are literate.

TABLE 2: EMPLOYED PERSONS BY LEVEL OF EDUCATION AND BY SECTOR, DECEMBER, 1983

<i>Education Level</i>	<i>Rural (%)</i>	<i>Urban (%)</i>
No schooling	69.5	41.3
Primary	24.1	31.9
Secondary	5.4	16.6
Post Secondary	1.0	10.2
<i>Total</i>	<i>100.0</i>	<i>100.0</i>

Source: F.O.S. (1985a) "The Nigerian Household, 1983/84.

The fewness of the educated among the employed in the rural areas can be attributed to the massive rural—urban drift of educated youths in search of better income opportunities. A host of other factors such as urban-biased type of development in Nigeria; rural-urban wage differential; the Western-educational system that creates aversion for rural, manual and all forms of 'dirty' jobs; among others, explain the observed high rate of rural-urban movement.

The second most important variable "Unemployment rate" has a negative impact on participation. This conforms to our a priori expectation.

Household size is also negatively related to participation rate. This result might be due to the observed high fertility rate among the rural dwellers and the resultant high dependency ratio. And since children are both net consumers and are highly intensive of their parents time, it is not surprising however that increase in household size results in declining participation rate.

Another important consideration is that the impact of improved communication especially through the radio has accelerated the schooling rate of rural children. Parents are aware of the fact that education equips their wards with skills with which they can compete favourably for highly paid urban jobs. This leads to social mobility and as such schooling rate (that is, the percentage of males and females 6 years

and over attending schools) in the rural area is fast increasing. Addition to membership of the household, therefore, may not necessarily increase the level of participation in economic activity due to the 'schooling culture' This is because, as observed by Caldwell (1980):

"Schooling creates dependency, both within the family and within the society. In the absence of schooling, all members of the family are clearly producers. ... With schooling it becomes clear that the society regards the child as a future rather than a present producer".

Conclusions

This study has identified a number of important variables determining participation rate in the rural sector of the Nigerian economy. These variables are the household size, unemployment rate and the literacy rate.

An important implication of the result of our analysis is that efforts to reduce both the level of unemployment and household size; (that is, the fertility level and hence, the dependency burden) and increase literacy rate will enhance rural labour force participation.

Literacy, in our analysis, relates to the percentage of rural labour force that are literate and are not in school. Since migration is selective of age and education, policies aimed at increasing the literacy rate should be geared towards retaining the educated ones on one hand, and increasing the school enrolment ratio of school-age children in the rural areas, on the other hand. Such increase will, as our analysis shows, inflate the participation rate of the rural populace.

It should be realised that the past urban-biased developmental policies in Nigeria have not produced the expected 'trickle-down effect' on the rural areas. Instead, it has led to economic and geographic dualism/polarisation manifesting itself in the observed rural-urban continuum. Thus, the miserable employment condition, low income and poor living condition in the rural areas force people to leave.

As shown by Todaro migration model efforts at creating more urban jobs is self-defeating as it will draw more people from the rural areas. Instead, a policy of rural development that will improve the living condition of rural dwellers and enhance their economic opportunities could retain educated youths in the rural areas.

In this regard the setting up of the Directorate of Foods, Roads and Rural Infrastructure is a step in the right direction. However, this Directorate should be closely monitored to achieve its major aim of developing rural infrastructures, and should not degenerate into mere government propaganda. The proper functioning of the Directorate will increase the linkage between the rural and urban markets, and by making it easy for farmers to sell their products, it will create incentives for increased participation.

Furthermore, improved infrastructural facilities will serve as a good incentive for would-be rural entrepreneurs; while government investment in rural agro-based and cottage labour-intensive industries will increase the employment opportunities of educated youths. This will further increase the participation rate.

Increasing the living standard and the education level of the rural work force could reduce the fertility level of rural dwellers, thereby reducing the household size, with the result of increasing the participation rate. Writing on the impact of education on fertility level Caldwell (1980) argued that:

“the change resulting from education in terms of the increased cost of a child and decreased lifetime return are sufficient to cause falling fertility from the onset of mass education”.

Moreover, the educated ones are able to make use of the family planning centres which the uneducated may see as “anti-tradition” while the intention to maintain a high living standard will also influence the reduced family size. Thus, the overall impact of increased literacy rate of the rural population, low average household size and increased employment opportunities will help to increase the participation rate of the rural dwellers.

All these can be achieved if the government actively pursues integrated rural development which will ultimately influence those variables affecting participation rate.

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