Determinants of Farmers Welfare in Ebonyi State, Nigeria

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Abstract: This study analyzed the determinants of farmers' welfare in Ebonyi State, Nigeria using well-structured questionnaire and a sample of 120 farmers. Standard welfare function was specified and estimated using Ordinary Least Squares Regression. The results showed that microcredit and household size have significant negative effect on welfare. On the other hand, income, physical assets, level of education and age of household heads have a significant positive effect on welfare. Recommendations included policies which will reduce household size, increase farmers income and physical assets and improve their level of education.

Key words: Determinants, farmers, welfare, education, Nigeria

INTRODUCTION

Agriculture is a very important sector of the Nigerian economy, employing about 65% of the population (Ajibefun, 2004). A study of the factors affecting the welfare of farmers is therefore very important. Nigerian farmers have been described as being very poor with low agricultural production (Ijere, 1992). For this reason, they are unable to provide enough funds for agricultural activities.

Welfare, though not observable could be said to represent the people's standard of living. In theory, households consumption expenditure on food and education is used as proxy for welfare indicator (Quartey, 2005).

Some empirical studies identifying the factors which explain welfare exist. For example empirical study by Adams and Page (2003) suggest that microcredit has significant positive impact on welfare status, production, income equality and poverty alleviation. Rahman (1986), Pitt and Khadker (1995) and Kabber (2001) noted that positive impact of microcredit goes beyond economic empowerment dimension. Using other impact assessment criteria, they concluded that microcredit had positive impact on the recipients asset ownership, political awareness and joint decision making. Both the economic and non-economic positive impact of microcredit contribute to the enhancement of the welfare of the recipients.

Earlier studies on welfare have identified microcredit, human asset, household income, farm output as factors which explain household welfare (Teal, 2001; Tunali, 2000; Ravallion, 2000; Litchfield and Waddington, 2003).

Bruck (2003) identified household mean level of education as having a significant positive effect on household welfare. He argued that the level of education of the mother is likely to have a greater positive impact on household food consumption than the level of education of the male head.

According to Keyereme and Thorbeeke (1991) age composition of households, their employment status and maturity index affect their welfare. Quartey (2005) found that household size and physical asset endowment influence household's welfare. Physical asset variables identified include land, livestock, farm equipment and non-farm asset.

Location variables such as region of residence, (rural or urban) etc., explain household welfare, since they explain spatial causes of affluence or poverty. Location effects are manifest in infrastructure and unobservable geographical heterogeneity (Littchfied and Waddington, 2003).

Income is the major determinant of welfare. The positive relationship postulated by the Keynes and Friedman's permanent income hypothesis has been confirmed by empirical studies by Gupta (1987) Koskela and Viren (1982) and Avery and Kannickel (1991).

The major objective of this study is to determine the factors which influence the welfare of farmers in Ebonyi State, Nigeria and proffer policies to enhance their welfare status.

MATERIALS AND METHODS

The study was carried in Ebonyi State, because it is a major agricultural region in Nigeria. Ebonyi State is made

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up of 13 Local Government Areas and 3 agricultural zones. The agricultural zones are Ebonyi North and Central, each with 4 Local Government Areas and Ebonyi south with 5 Local Government Areas. Farming is the major occupation of the people. Farmers grow both crop and livestock enterprises extensively. The major crops cultivated include yam, cassava, rice, maize, cocoyam, melon, beans, cocoa, groundnuts, oil and rubber. The livestock raised are poultry, goats, sheep, pigs and cattle.

Multistage sampling technique with simple random selection was adopted in the study. Two agricultural zones were randomly selected from the three agricultural zones in the State. The zones are Ebonyi Central and Ebonyi North. Again 2 Local Government Areas were randomly selected from each of the two agricultural zones. The Local Governments selected were Izzi, Abakaliki, Ezza South and Ikwo Local Government Areas. Five autonomous communities were then selected from each Local Government Area to give a total of 20 communities. Three villages were randomly selected from each autonomous community. A total of 60 villages were selected for the study, for a wide coverage. Two farmers were randomly selected from each village to give a total of 120 farmers for the study. Data were collected from the farmers with the aid of a structured questionnaire.

Analytical technique: The study objective was analyzed by formulating and estimating the following welfare function (Quartey, 2005).

$$W = F (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}) \quad (1)$$

Where:

W = Welfare (expenditure on food, education and other consumer items (₦)).

X_1 = Credit (Amount of loan obtained by the farmers, (₦)).

X_2 = Household income per adult equivalent (AE), (₦), where AE = $1 + 0.7 (N_1 - 1) + 0.5N_2$ (Quartey, 2005).

N_1 = Number of adults aged 15 years or above.

N_2 = Number of children aged less than 15 years. The household income per adult equivalent was derived as total household income divided by adult equivalent (AE) (₦)).

X_3 = Physical asset (farm equipment, real value of livestock and non-farm assets (₦)).

X_4 = Farm Size (Hectare).

X_5 = Household Size (Number of persons in the household).

SX_6 = Labour cost in all farm operations (₦).

X_7 = Sex of household head ($X_7 = 1$ for male, 0 = otherwise).

X_8 = Age of household head (years), a proxy for working experience.

X_9 = Location of farm (Rural = 1 and Urban = 0).

X_{10} = Educational level (Number of years spent in school).

Four functional forms (Linear, exponential, semi-log and cobb-douglas) were fitted and the best was chosen based on the significance of the coefficients, their compliance with a prior expectations and the value of the coefficient of multiple determination (R^2).

RESULTS AND DISCUSSION

Determinants of farmers welfare: The regression result of the welfare function is presented on Table 1. In all the equations, the coefficient of multiple determination R^2 was statistically significant at 1% level. The exponential function was chosen as the lead equation because its coefficient of multiple determination is fairly high (0.61) and the model has more significant explanatory variables than other models.

Microcredit has a significant negative effect on the welfare of farmers. This result is consistent with the findings of Burger (1989), Bucekley (1997) and Coleman (1999). Burger (1989) had noted that microcredit tends to stabilize rather than increase welfare and tends to preserve rather than create jobs, hence the negative impact of microcredit on welfare. Bucekley (1997) had argued that microcredit does not have a significant effect on welfare of the farmers in terms of higher income or creation of employment opportunities. Similarly Coleman (1999) concluded that microcredit does not have a significant effect on welfare improvement (as measured by asset accumulation, increased production and expenditure on education) among the farmers.

Household income has a significant positive effect (at 1% significance level) on the welfare of farmers. This is consistent with the Keynesian consumption function and the permanent income hypothesis of Friedman. These posit a positive relationship between welfare and income. According to the permanent income hypothesis, which distinguishes between permanent and transitory components of income, households will spend mainly the permanent income while the transitory income is channeled into savings with marginal propensity to save from the income approaching unity. This positive relationship has been confirmed by empirical studies (Avery and Kannickel, 1991).

Table 1: Welfare functions of farmers

Explanatory variable	Exponential function+	Linear function	Cobb-douglas function	Semi-log function
X_1 (Microcredit)	-0.0000205**	-0.601	-0.05653	1265.240
	(-2.292)	(2.234)	(-0.637)	(-0.237)
X_2 (Household income)	0.0000697***	0.358***	0.997**	51953.688***
	(7.834	*7.420)	(12.169)	(10.551)
X_3 (Physical assets)	0.0000000014	-0.0006112	0.005121	-1817.393
	(0.083	(0.066)	(-0.075)	(-0.441)
X_4 (Farm Size)	-0.0360	-2071.245	-0.186	-7342.639
	(-0.539)	(-0.562)	(-.446	(-0.951)
X_5 (Household Size)	-0.0109**	487.679	6.298**	17035.018**
	(-2.137)	(0.563)	(2.436)	(2.318)
X_6 (labour cost of all	0.000000003	-0.002747	-0.04878	-3616.162
farm operations)	(-0.032)	(-0.052)	(-0.981)	(-1.210)
X_7 (Sex of household head)	0.07209	6275.050	0.215	12263.103
	(0.467)	(0.764)	(1.608)	(1.528)
X_8 (Age of household head)	0.01993***	661.981	0.230	7540.437
	(2.985)	(1.501)	(0.747)	(0.408
X_9 (Location of farm)	-0.187	-8658.579	-0.140	-7583.495
	(-262)	(-1.687)	(-1.230)	(-1.112)
X_{10} (Education Level)	-0.01283	-680.864	-0.178	-6514.961
	(-1.011)	(-1.001)	(-1.411)	(-0.859)
	9.883***	5751.587	-0.494	-5099021.30***
Constant	(24.253)	(0.265)	(-0.280)	(4.806)
R^2	0.608	0.582	0.815	0.765
F-Value	7.588***	6.810***	16.692***	12.391***

Source: Computed from Field Data, 2005, ***, ** and * mean significant at 1, 5 and 10% levels, respectively, + = Lead equation, The numbers in parentheses are t-ratios

Household size has a significant negative effect (at 5% significance level) on welfare of farmers. This suggests that households; that have larger household size are more likely to have reduced welfare, which is consistent with economic theory. The larger the household size, the more difficult it may be for the household to meet the basic requirements such as education for children, proper nutrition and adequate housing, all of which tend to reinforce poverty. This also means that consumption synergies expected from larger household size may be absent.

Age of household head has a significant positive effect (at 1% significance level) on welfare of farmers. This is consistent with life-cycle hypothesis, which postulates that demographic variables affect consumption or welfare (Ando and Modigliani, 1963). The dependency ratio is the most common demographic variable. The young and the elderly ones consume out of their past saving while those within the working age accumulate savings for use at old age.

CONCLUSION

The results of this study indicate that microcredit and household size have a negative effect on farmers' welfare. On the other hand, household income and age of household head have a significant positive effect on household welfare.

- Since microcredit has a significant negative effect on farmers welfare, measures to improve farmers' welfare in the study area should focus on non-credit policies.
- Policies which reduce household size will improve farmers welfare. Specifically, fertility control measures which the farmers can understand and adopt should be the focus.
- The positive relationship between household income and farmers welfare implies that policies which remove constraints in agricultural production and increase farmers income will improve their welfare. The policy makers should therefore intervene in real terms in key areas of agricultural production where farmers need assistance both collectively and individually to overcome constraints in production.
- Farmer's age has a significant positive effect on his welfare. The older a farmer is, everything being equal, the more experienced he is. To improve farmers welfare therefore, agricultural extension service should be intensified for relatively younger and less experienced farmers. Furthermore, other government policies aimed at improving farmers welfare should focus on relatively younger farmers because this category of farmers have lower welfare status than the aged ones.

In conclusion, agriculture is an important occupation in Nigeria in terms of the percentage of the population

employed in the sector. A study of the factors affecting the welfare of farmers in Nigeria is therefore very important. This study is very revealing and it is hoped that the recommendations will go a long way in raising the welfare of the farmers in the country.

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