



## Measuring the Impact of Credit on the Welfare of Rural Farmers in Akwa Ibom State, Nigeria

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### Abstract

Majority of the poor in Nigeria lack access to basic financial services which are a sine qua non for improved livelihood. In most cases, they are often excluded from formal opportunities for financial services leaving them only with informal alternatives. But credit availability to the poor in the rural areas is critical to reducing poverty. An empirical study was conducted to measure the impact of agricultural credit of the welfare of farmers. Multistage sampling procedure was employed to select the farmers. Questionnaires were employed to collect data. Multiple regression analysis and chow test were for analyses. Results revealed that the mean age and years of education of farmers were 12 and 31 years respectively. Findings also showed that the most critical factors impacting the welfare of farmers were marital status, marriage type, educational level, farm size, off-farm income, labour, type of enterprise, labour and access to modern farming inputs. Policies to encourage human capital development of rural farmers would be a rational decision.

## Introduction

Many low-income nations neglect adequate social security laws and also lead to a vicious spiral of suffering, amid overall economic prosperity, which does not meet essential human needs. The poverty faced by the third-world countries like Nigeria was enormous and ongoing, according to Isiaka (2015). Therefore, it is important to encourage poor people to support poor development. Chronic suffering will continue, and citizens will either be removed from prosperity or add to the development of income without themselves being gained from it, without empowerment.

Diagne and Zeller (2001) observed that, due to their alleged failures to satisfy the loan terms, the disadvantaged have for many years been seen as poor credit and as a consequence excluded from credit and savings facilities. Poverty does not constitute a particular cause or circumstance. It is a collection of poverty, including a lack of financial resources, lack of goods access and a lack of speech. IMF (2019) announced that investing in financial inclusion is one route to support women and the vulnerable harness their ability to control their own economic futures.

Awotide et al., 2015 suggested that increasing production by access to credit is a quick way to improve farmers' welfare. With loans paid to farmers through the government credit programme, it is evident that the poor will use loans with increasing food and incomes to boost their health. While the importance of credit in growing agricultural production and enhancing well-being has been reported by Siddiqi et al., (2004), Saboor et al., (2009) and Ojo et al., (2019) It is essential to know how credit impacts on farmers' quality of life. Approaching how credit impacts on farmers' welfare is expected to direct policymakers in formulating

agricultural credit policies and programs which will reduce the vulnerability of farmers. This research was also carried out to assess the effect of credit on farmers' welfare.

## Methods

### Study Area

The thesis took place in the state of Akwa Ibom, Nigeria. It ranges from 4°33' to 4°53' north latitude and 7°25' to 8°25' east latitude. In the tropical climate, the state is characterized by the overwhelming green features of plants, shrubs and oil palm trees. The State borders Abia, Cross River, River States and the Atlantic Ocean to the north, east, west and south respectively. The annual precipitation varies from 2000 to 3000 mm. The region is usually agricultural and is highly dependent on precipitation. The overall state land area is 7.249 km<sup>2</sup> and the population density is 680 people per km<sup>2</sup>. It has six ADP districts, namely:- Uyo, Eket, Ikot Ekpene, Abak, Oron and Etinan, in line with the National Population Council, 2006. It has an estimated population of 3,9 million. The condition consists of two seasons: - in the dry and rainy seasons.

### Sampling and Data Collection Procedure

In this analysis, the representative farmers used multi-stage sampling techniques. First, because of the domination of beneficiaries in the integrated farmers system, the Uyo Agricultural Development Program (ADP) region is deliberately chosen (a credit scheme of the state government) Secondly, 10 households each were randomly chosen from IFS recipients and non-recipients. Finally, six farmers were randomly chosen from the Uyo farming area to make up a total of 120 farmers (each one of the beneficiaried and non-beneficiaries). Using questionnaire, primary data were obtained. Multiple regression and chow statistics were used in the computational methods used for this research.

The multiple regression analysis is expressed as

$$PCHE = F(\text{SEX, AGE, MTS, TOM, EDU, MOC, RAC, FEX, VOA, FAS, OFI, LAB, LOA, AES, AMF, } e) \dots \dots \dots (1)$$

Where PCHE= Per Capita Household Expenditure; SEX.....AMF=explanatory variables; e= error term.

The chow F-statistics was computed following Onyenweaku 1997 and Olomola 1998 and have been used in Etim, 2017

$$F = \frac{[\sum e_3^2 - \sum e_1^2 - \sum e_2^2] / [K_3 - K_1 - K_2]}{[(\sum e_1^2 + \sum e_2^2) / K_1 + K_2]} \dots \dots \dots (2)$$

Where  $\sum e_1^2$  and  $K_1$  are the error sum of square and degree of freedom respectively for the beneficiaries sample,  $\sum e_2^2$  and  $K_2$  are the error sum of square and degree of freedom respectively for the non-beneficiaries sample and  $\sum e_3^2$  and  $K_3$  are the error sum of square and degree of freedom respectively for the pooled data and;

$$F = \frac{[\sum e_3^2 - \sum e_{14}^2] / [K_3 - K_4]}{\sum e_4^2 / [K_4]} \dots \dots \dots (3)$$

Where  $\sum e_4^2$  and  $K_4$  are the error sum of square and degree of freedom respectively for the pooled data with a dummy-variables are as earlier defined.

## Result and Discussion

The summary of the socio-economic and farm specific characteristics of the beneficiaries of the integrated farmers scheme is shown in table 1. The minimum and maximum values of the age and the level of educational attainment of the beneficiaries of the integrated farmers'

scheme are 23,40 and 6, 18 years respectively. Tables 4.6.1 also show that the maximum value of asset was N17, 000 whereas the largest farm size was 3.50 hectares. The tables above further reveal that the highest among of loan obtained by farmers was N420, 000.

Table 1. Summary Statistics of the Socio-economic and Farm Specific Characteristics of the Beneficiaries of the Integrated Farmers Scheme in Akwa Ibom State

Description	Unit	Minimum	Maximum	Mean	Standard Deviation
PCHE	Naira	1,200.00	120,000.00	26,906.08	24,496.40
Age	Years	23	40	31.39	5.11
Education	Years	6.00	18.00	11.65	2.95
Farming experience	years	1.00	6.00	2.63	1.43
Value of Assets	Naira	1.00	171,000.00	46,509.39	40,068.24
Farm Size	Hectares	0.20	3.50	1.24	0.67
Off-farm income	Naira	1.00	380,000.00	86,356.71	62,761.46
Farm Income	Naira	1,000.00	400,000.00	71,481.47	49,956.75
Labour	Mandays	1.00	280.00	69.41	47.04
Loan	Naira	6,000.00	420,000.00	189,769.33	101,887.97

### Impact of Integrated Farmers' Scheme on the Welfare Status of Rural Farm Households

The marital status coefficient of the head of households is -0.972. This involves a reduction in the welfare status of married households by -0.972. Therefore, the benefits to single persons of 9,428 as opposed to 10,400. The explanation for this is that married couples are much bigger than smaller households and thus therefore more prone to reduce their welfare status.

The welfare standard is influenced by both polygamous or monogamous marriages. In single families, the marriage form coefficient is -0.205 indicating that in polygamous households, the welfare standard of the spouse is raised by 0.205 to 10.605, compared to 10.400. This is true since single-member houses are larger than polygamous homes, which allow the welfare level of those single-member families to increase.

The academic status coefficient is 0.121. Which means that welfare in households with a structured education of heads is increased by 0.121. The heads of households have 10.400 welfare without formal schooling. This can be due to a stronger propensity to follow better farming methods for household leaders with formal schooling than uneducated ones. This enhances agricultural production, wages and the well-being of skilled people.

The retrograde factor is 0.197 for the agricultural scale. This results in a 1.97% growth in healthcare in farm sizes in hectares. As yields are closely linked to the cultivated land, a raise in farm yield will result in income rising as poverty levels were decreased.

The multiplier of off-farm income is 0,249, which means that the levels of domestic welfare would be increased by 0,249 for each naira growth in off-farm income. This is because the rise in non-farm income offers an extra stream of family revenue and spending that eventually increases the amount of benefits. This observation is synonymous with Etim's earlier analytical results (2017).

The coefficient of regression for work in farms is 0.229 In other words, an increase in the number of people working on the farm would reduce the welfare standard by 0.229. This is because the rise in family labor, which leads to lower welfare status, is a function of bigger household sizes and greater dependence ratio. Also stated on the relevance of the usage of labor to poverty reduction were the findings by Etim et al.,(2011), Etim and Eedet (2014).

The class of business has a coefficient of 0.337 which mean that for households engaged in two or more agricultural businesses the social wellbeing of households shall be improved by 0.337 to 10.737, compared to 10.400. The explanation is that household managers working in many companies probably have additional sources of household revenue. And if a company fails, household managers involved with two or three companies are less likely than households that only have one company to lose productivity and profits. Etim and Edet (2016) findings affirm the increase in wages and reduced the rate of poverty in rural communities by embarking on multi-agriculous enterprises.

There is a 0.460 multiplier on access to new agricultural inputs. As a result, the health of households with proximity to modern agricultural inputs will rise by 0.460 to 10.860. However, the healthcare standard of households with no connection to modern agricultural inputs is 10,40. This is so since farmers' output and income would probably improve with a resulting decrease in malaise by utilizing modern agricultural inputs.

Table 2. Poverty equations for the impact of integrated farmers' scheme on the welfare of beneficiary farmers

Variable	Linear	+ exponential	Double-log	Semi-log
Constant	43962.604 (2.363)**	10.400 (14.824)***	31.528 (5.512)***	141292.7 (2.131)**
Sex	-526.908 (-0.090)	6.275E-02 (0.286)	1.236E-03 (0.006)	-1832.37 (-0.305)
Age	-543.203 (-1.855)*	-0.101 (-5.315)***	-0.279 (-0.493)	-1832.37 (-0.305)
Marital status	-5451.1 (-1.684)*	-0972 (-1.041)	-0869 (-0.928)	-15310.1 (-0.605)
Type of marriage	1517.205 (0.063)	-0.205 (2.225)**	0.102 ) (0.111)	365.529 (0.015)
Education	-352.451 (-0.512)	0121 (4.654)***	-0.118 (-0.440)	-2924.059 (-0.402)
Membership of cooperative	-850.542 (-0.166)	-0.109 (-0.563)	-8.33E-02 (-0.423)	230.656 (0.043)
Remittance Access	-5.95E-02 (0.977)	-2.48E-06 (-1.077)	-0.101 (-2.622)**	-2267.190 (-0.403)
Farming experience	4126.714 (2.554)**	6.382E-06 (-4.048)	0.281 (2.022)**	5250.547 (-2.138)**
Value of asset	-0.127 (-2.495)**	6.382E-02 (1.677)	-5.95E-02 (-1.782)*	-1928.988 (-2.138)**
Farm size	-645.402 (-0.523)	-0.197 (1.664)*	-0.286 (-2.624)	-948.222 (-0.273)
Off-farm income	4.673E-02 (4.534)***	2.490 (2.067)***	-0.199 (-0.527)***	487.909 (0.505)
Farm income	-3.43E-02 (-0.822)	-1.52E-02 (-0.965)	-4.26E-002 (0.503)	245.809 (0.107)

Labour	113.063 (2.597)***	0.229 (1.781)*	0.142 (2.185)**	3463.433 (1.973)**
Loan	-7.75E-03 (-0.335)	-0.104 (-2.476)	-9.32E-02 (-0.803)	-1623.553 (-0.518)
Type of enterprise	5321.607 (2.326)**	0.337 (2.080)**	0.287 (1.799)	6767.081 (2.043)**
Access to extension services	1580.513 (0.249)	0.411 (2.045)**	1.803E-02 (0.075)	523.669 (-0.080)
Access to modern farming inputs	-1501.573 (-0.207)	-0.460 (-1.683)*	-8.33E-02 (-0.423)	-276.931 (-0.037)
	R <sup>2</sup> =0.604 F- value – 2.981***	R <sup>2</sup> = 0.787 F-value = 3.156***	R <sup>2</sup> = 0.638 F-value = 3.071***	R <sup>2</sup> = 0.509 F – value = 2.510***

\*\*\*, \*\*, \* significant @ 1%, 5% and 10% levels respectively with t-values in parenthesis while + indicate the lead equation

Table 3. Poverty equations for the impact of integrated farmers' scheme on the welfare of non-beneficiary farmers

Variable	Linear	+ Exponential	Double-log	Semi-log
Constant	32720.821 (2.195)**	9.715 (12.468)***	6.819 (2.151)**	-29267.4 (-0.469)
Sex	-2533.418 (-0.582)	-0.429 (-1883)*	-0.399 (-1.747)*	-1977.696 (0.440)
Age	-181.736 (-0.598)	-5.67E-03 (-0.357)	-0.206 (-0.282)	-3332.696 (-0.231)
Marital status	-14900.4 (-1.654)*	-0.714 (-2.496)*	-0.800 (-1.986)**	-17392.4 (-1.755)*
Types of marriage	0.7567.36 7 (9-0.950)	0.911 (2.189)**	0.148 (0.356)	-9483.697 (-1.159)
Education	-634.628 (1-1.403)	-1.85E-02 (-0.781)	3.465E-03 (0.026)	-2063.221 (0.778)
Members of cooperative	649.843 (0.150)	-0.433 (-3.520)***	-6.47E-02 (-0.2.79)	77.167 (0.017)
Remittance Access	2.585E-02 (0.579)	0.268 (16.750)***	0.114 (1.686)*	871.676 (0.653)
Farming Experience	-193.053 (-0.633)	-2.83E-02 (-1.771)*	-0.484 (-2.384)**	-5068.390 (-0.850)
Value of asset	3.762E-03 (0.561)	0.321 (3.566)***	2.360E-02 (0.241)	875.123 (0.454)
Farm size	4338.476 (3.875)***	0.195 (1.680)*	-0.470 (-2.716)***	1558.094 (0.458)
Off-farm income	0.552 (1.840)*	2.300E-02 (2.555)**	0.351 (2.485)**	608.713 (0.220)
Farm income	6.915E-02 (2.832)***	1.433E-02 (2.383)**	1.745E-02 (0.108)	4631.001 (1.457)

Labour	57.560 (1.130)	5.056E-02 (1.899)*	0.301 (2.711)***	3219.747 0.859
Loan	3.277E-02 (1.584)	8.986E-07 (0.831)	1.259E-02	599.053 (1.306)
Type of enterprise	1.060.466 (0.304)	0.131 (0.720)	0.163 (0.879)	2239.174 0.612
Access to extension services	-930.070 (-1.462)	-0343 (-1.023)	-0.202 (-0.590)	-6892.484 (-1.021)
Access to modern farming inputs	9090.857 (1.958)	0.659 (1.898)*	0.628 (1.798)**	7956.943 (1.157)
	R <sup>2</sup> = 0.594 F-value = 3.691	R <sup>2</sup> = 0.622 F-value = 2.621	R <sup>2</sup> = 0.614 F-value = 2.491	R <sup>2</sup> = 0.487 F-value = 2.919

\*\*\*, \*\*, \* Significant @ 1%, 5%, and 10% levels respectively with t-values in Parenthesis while + indicate the lead

## Conclusion

The study was conducted to measure the impact of agricultural credit scheme on the welfare of farmers. Primary data were obtained from both beneficiaries and non beneficiaries of credit scheme. From the analysis of data using descriptive statistical tools and multiple regression, the mean age of beneficiaries of the scheme was 31 years implying that they were within active and productive population. Results also showed that beneficiary farmers were literate as the mean years of education was 12 years. Findings also revealed that farmers cultivated small holdings of farmland as the average farm size was about 1 hectare. Result of multiple regression analysis revealed that the most critical factors impacting on beneficiaries welfare were education, marital status, off farm income, farm size and access to modern farming inputs.

## References

- Awotide, B. A., Abdoulaye, T., Alene, A., & Manyong, V. M. (2015). *Impact of access to credit on agricultural productivity: Evidence from smallholder cassava farmers in Nigeria* (No. 1008-2016-80242).
- Diagne, A., & Zeller, M. (2001). *Access to credit and its impact on welfare in Malawi* (Vol. 116). Intl Food Policy Res Inst.
- Etim, N. A. (2007). Analysis of Poverty Status of Rural Farm. Households in Akwa Ibom State, Nigeria. Unpublished Ph.D Dissertation. Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.
- Etim, N. A. A., & Edet, G. E. (2014). Factors determining urban poverty of farming households in a tropical region. *Journal of Experimental Agriculture International*, 322-335.
- Etim, N. A. A., & Edet, G. E. (2016). Does Income Diversification Reduce Poverty in Rural Households?. *Archives of Current Research International*, 1-7.
- Etim, N. A. A., Okon, S., & Akpabio, I. A. (2011). Labour and poverty: Empirical relationship using house data from south Nigeria.
- International Monetary Fund (2019). Finance and Development. A Quarterly Publication of the International Monetary Fund 56(1): 1-61

- Isiaka, A. O (2015). Impact of Youth Empowerment Scheme on Poverty Alleviation in Nigeria. *International Journal of Business, Economics and Law*. 8(3): 35-39
- NPC (National Population Commission) 2006. Population census of the Federal Republic of Nigeria. Analytical Report at the National level, National Population Commission, Abuja.
- Nsikak-Abasi, E. A. (2017). Improving welfare of rural farmers through Youth Empowerment Programme. *Int. J. Adv. Agric. Environ. Eng*, 4, 217-220.
- Ojo, T. O., Baiyegunhi, L. J. S., & Salami, A. O. (2019). Impact of credit demand on the productivity of rice farmers in South West Nigeria. *Journal of Economics and Behavioral Studies*, 11(1 (J)), 166-180.
- Olomola, A. S. (1998). *Choice and productivity effects of animal traction technology in the semi-arid zone of northern Nigeria*.
- Saboor, A., Hussain, M., & Munir, M. (2009). Impact of micro credit in alleviating poverty: An Insight from rural Rawalpindi, Pakistan. *Pak. j. life soc. sci*, 7(1), 90-97.
- Siddiqi, M. N. (2004). *Riba, bank interest and the rationale of its prohibition*. Jeddah: Islamic Research and Training Institute.