Effects of Credit Constraints on the Welfare of Farm Households in Southwest Nigeria

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Introduction

Nigeria with the total population estimates of 216,000,000 people (UNFPA, 2022) has two-thirds of its citizen or population living in the rural areas. The rural areas' economy has agriculture as its main stay, with many households deriving their livelihood from it. In spite, of the numerous contributions of the farming sector in Nigeria and its high potential to improve living standards, the sector is impeded by low productivity, and this has resulted into low level of income, reduced purchase of consumption expenditure, and consequently, reduced welfare. As a result, rural smallholder farmers who are heavily employed in this sector are poor.

Some studies have shown that rural poverty continues to be prevalent as a result of credit constraints. Existing Studies on credit in Nigeria have focused on credit access and its impact on agricultural productivity, and determinants of credit constraints on output supply, and production efficiency and Adoption, loan demand and rationing. However, this study seeks to explore the each credit constraints and evaluate its impact on welfare of rural farm households.

Research Goal

Estimate the effect of credit constraints on farm household welfare in the study area.

Methodology

The study was carried out in the Southwest zone of Nigeria (see figure 1). A multi-stage sampling procedure was employed in the sample selection. The first stage involved the random selection of two states from the six states in the zone. Oyo and Ondo states were randomly selected . The second stage involved the random selection of four Local Government Areas (LGAs) each from Oyo and Ondo States. At the third stage, five villages were selected randomly from each LGA, giving a total of 40 villages. Eight farm households were then randomly selected from each of the villages to make a sample of 320 farm households. Primary data was collected with the aid of a well-structured questionnaire.

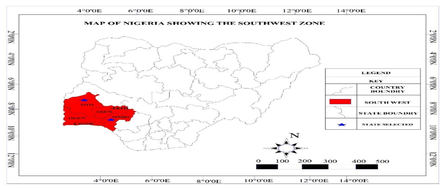

Figure 1: Map of Nigeria showing the Southwest Zone

Analytical technique:

Multinomial endogenous switching regression model (MESRM)

The MESRM was used to estimate the effect of credit constraints on farm household welfare. The MESRM addresses the issues of endogenenity and selection bias. It accounts for selection bias arising from both observable and unobservable heterogeneity.

Results

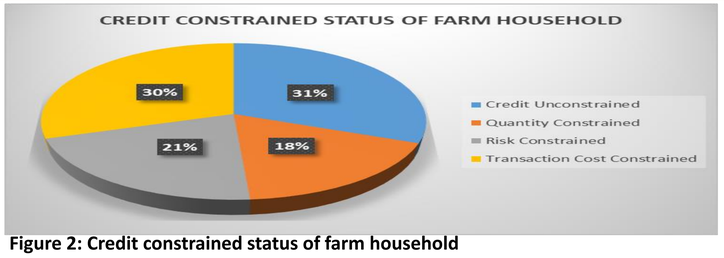

Figure 2: Credit constrained status of farm household

Table 1: The effect of credit constraints on farm household welfare

Welfare Status of Households	Coefficient	Standard error	Z	P>[Z]
Unconstrained				
Household size	-0.118	0.024	-4.870	0.000***
Social Capital	0.058	0.033	1.770	0.077*
Risk constrained				
Pay Last loan back (repayment history)	4.315	2.396	1.800	0.072*
Transaction cost constrained				
Sex of household head	1.380	0.832	1.660	0.097*
Household size	-0.230	0.113	-2.030	0.042**
Quantity constrained				
Education	0.059	0.029	1.990	0.046**
Land ownership	0.628	0.369	1.700	0.089*
Pay Last loan back (repayment history)	2.876	1.739	1.650	0.098*

We do not discuss the econometric estimates results of factors affecting credit constraints condition which is the first stage of MESRM since we are primarily interested in the effects of credit constraints on household welfare.

The result above is the result of the second stage, the welfare equations showed that household size and social capital were significant in explaining the variations in the welfare of credit unconstrained households.

- Credit unconstrained households have better welfare if they have social capital, the higher the number of the association that unconstrained household belong to, the higher their welfare. However, they will have lower welfare if they have a large household size.
- Risk constrained households may have a higher welfare if they pay their last loan back.
- Education and Land ownership was positive and statistically significant for quantity constrained household. Hence, quantity constrained household will have higher welfare if their household head had more years of formal education and have possession of land.
- transaction cost constrained households will likely fare better if their households are headed by males and they pay their last loan back, but may have lower welfare if they have larger household size. For instance, the result showed that an additional member to the credit constrained household will reduce the welfare (proxy as monthly mean per capita household expenditure) by 23% as against 11.8% in unconstrained household, depicting that large household size affects the welfare of transaction cost constrained households than their unconstrained counterparts.

Treatment Effect

Table 2: MESRM based average effects of credit constraints on welfare

Average Treatment Effects on the treated (ATT)					
Outcome Variable	Constraints	Credit Constrained (1)	Credit Unconstrained (2)	Treatment effects (1-2)	%
Welfare (log per capita expenditure)	Risk	16719.530	18528.830	-1809.300***	-9.760
	Transaction cost	17118.860	18246.300	-1127.440***	-6.180
	Quantity	6274.108	18318.520	-12044. 412***	-65.750
Average Treatment Effects on the untreated (ATU)					
Welfare (log per capita expenditure)	Risk	15822.430	18417.390	-2594.960***	-14.10
	Transaction cost	17260.690	18417.390	-1156.700***	-6.28
	Quantity	17390.86	18417.390	-1026.533***	-5.57
Heterogeneity effects					
		Base Heterogeneity (Credit Constrained)	Base Heterogeneity (Credit unconstrained)	Transitional Heterogeneity	
	Risk	897.100	111.440	785.660**	
	Transaction cost	-141.830	-171.090	29.260***	
	Quantity	-11116.752	-98.870	-11017.882**	

- The result based on MESRM treatment effect showed the conditional expectation in both observed and counterfactual scenarios, with the unconstrained household mean per capita expenditure score being 18,417.39. The result showed that household who were credit unconstrained had a higher welfare than credit constrained households (risk, transaction cost, quantity). This is similar to the findings of Ali and Awade (2019)
- Risk constraints causes welfare (mean per capita expenditure) to be reduced by 9.76% while in the counterfactual scenario, household that are unconstrained would have had their welfare reduced by 14.1% had they been risk constrained.
- For the transaction cost constraint household category, transaction cost constraints cause welfare to be reduced by an average of 6.18%. while in its counterfactual case, households who are credit unconstrained would have had their welfare reduced by 6.28% had they not had credit to meet their need and were transaction cost constrained.
- Furthermore, quantity constraints caused a welfare loss of 65.75%. In the counterfactual scenario, household that are credit unconstrained would have had their welfare reduced by 5.57% had they been quantity constrained. Therefore, credit constraints had an effect on household welfare.

Conclusion

- This study showed that majority of farm households in the study area are credit constrained.
- Risk constrained households will have a higher welfare if they pay their last loan back. Quantity constrained households will have a higher welfare if their household heads have more years of formal education, pay their last loan back and own lands. Transaction cost constrained households will have a higher welfare if they are headed by males, and have smaller household sizes. Unconstrained household will have their welfare reduced if they have larger households while social capital increases their level of welfare.
- Furthermore, the study showed that credit unconstrained households have higher levels of welfare than their credit constrained counterparts and that the removal of risk constraints, transaction cost constraints and quantity constraints will cause a welfare gain of 9.76%, 6.18% and 65.7%, respectively. The study concluded that farm households will be better off if they are credit unconstrained.

References

Ali, E., and Awade, N. E. (2019). Credit constraints and soybean farmer's welfare in subsistence agriculture in Togo. *Heliyon,* 5(4), e01550.

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