Can social assistance programmes stimulate fairness of access to Agricultural Inputs Acquisition and reduce poverty among small-scale farmers in Southwestern, Nigeria?

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Introduction

- Poverty incidence in Nigeria has risen from 54% in 2004 to 79% in 2016 (Nigeria Bureau of Statistics (NBS) 2017, estimates).
- 77% of these poor people are into agricultural livelihood and on a small-scaled level.
- Recent economic recession, increase in food prices, incessant fuel shortages and financial crisis among others have aggravated this situation.
- Poverty, inequality, vulnerability and instability are influenced by limited economic opportunities, spatial inequities and ethnicity, age and gender inequalities.
- In the agricultural livelihood, access to productive resources and constrains to informal and formal lending avenues have been a dominant challenges and this has aggravated the situation and adding to many of the prevailing vulnerabilities confronting the poor.

Introduction contd.

- Can social assistance programmes and social protection interventions stimulate poverty reduction?

- In Nigeria, social protection policy and programming have emerged in recent years, with the government and its development partners currently implementing cash transfers to address the country's high rates of poverty and vulnerability.

- In many developing countries role small-scale agriculture play in economic development and rural transformations remains challenged, economy activity and food security in this region *has* benefited directly from subsistence agriculture.

- Although drivers of economic growth are found solely in revolutionizing agricultural sectors, but more need to be done.

Introduction contd.

- In Nigeria, to drive the economy, agricultural transformation has been modeled to fast track development in multifaceted rural areas and access to timely Agricultural Inputs has been argued to be the key

- Hence, for any serious social programmes interventions to be meaningful, focus must be on small-scale farmers

- Around the world, social protection programmes interventions are increasingly attracting government and donor resources, with an eye to reducing poverty and vulnerability, promoting growth and increasing stability.

- In Nigeria too, social protection policy and programming have emerged in recent years, with the government and its development partners currently implementing social assistance programmes to address the country's high rates of poverty and vulnerability.

Introduction contd.

- Several studies have been conducted on the effect of social assistance programme particularly e-wallet scheme, little analysis has been done to assess the effectiveness of this mechanisms towards the poorest, hence this study begins to fill these gaps and presents an empirical analysis.

- Therefore, this article examines whether social assistance programmes can reduce extremely poverty in societies marred by high levels of income concentration in the non-agricultural livelihood?

- The study focus on one of the most confessed effective method of e-wallet scheme in agricultural-inputs acquisition and analyze the extent this method is able to improve the life chances of extremely poor beneficiaries, through the three major goals,

➢increase income,

➢market access and

➢engagement in the value chain analysis.

E-wallet-powered Growth Enhancement Support Scheme

- E-wallet-powered Growth Enhancement Support Scheme was designed by the Nigerian Government in 2012 to address challenges faced particularly by small-scaled farmers to access important agricultural inputs such as improved seeds, agrochemicals and fertilizers at subsidized prices.

- Past studies have indicated that these important agricultural inputs are important to increase agricultural outputs and farmer's productivity.

- However, channels of distribution of these agricultural inputs have witnessed highly organized distortion depriving the end users of access.

- Social assistance pogramme of e-wallet scheme was established to correct this anomalies and institute machinery that will facilitate prompt access and delivery of agricultural inputs meant for farmers.

- To facilitate and improve farmers' prompt access to agricultural information and market services.

- The motive driving e-wallet scheme is to treat agriculture as a business to generate wealth for millions of small-scaled farmers in Nigeria.

E-wallet Scheme contd.

- This is done by taking the government out of the procurement and distribution of fertilizers and seeds and to reach the farmers directly.
- Success have been recorded on the successes of this programme as benefitted farmers produced an additional food supply of 8.1 million Metric Tonnes (MT), which was 71% above the target set for the program in the previous year (2016).
- Objectives of the study:

1. to assess social assistance programmes of e-wallet scheme on income increase of participants
2. to explore causal relationship between the two.
3. to examine how far it has stimulate fairness of access to agricultural inputs acquisition and poverty reduction among small-scale farmers in Southwestern, Nigeria.

Methodology

Area of study and sampling procedure

- The study area is South western Zone of Nigeria.

- This zone has six states: which consist of Lagos, Ogun, Oyo, Osun, Ondo and Ekiti states and it is also known as the south West geographical zone of Nigeria.

- The area lies between longitude 20 311 and 60 001 East and Latitude 60 211 and 80 371N with a total land area of 77,818 km2 and a projected population of 28, 767, 752 in 2006 estimates.

- The study area is bounded in the East by Edo and Delta states, in the North by Kwara and Kogi states, in the West by the Republic of Benin and in the south by the Gulf of Guinea.

- The study area has 85 constituted Forest reserves with a forest area cover of 842,499 hectare

Figure 1 shows the position of the study area in the map of Nigeria.

Method of Data Collection

- Mixed method approaches were adopted

➢quantitative survey of about 8,000 beneficiaries and

➢qualitative survey comprised of an in-depth interviews with thirty programmer's participants from all the Southwestern, Nigeria.

➢representative sample at each State in the zone and hence, a representative samples of 100 households were collected.

➢95% confidence level, to give 600 household sizes, however, 583 data were useful for analysis.

Method of Data Analysis.

- Regression Discontinuity Design (RDD) was used because of its peculiarities in evaluating the degree of participation and factors influencing same.

- RDD's have progressively become popular tool to ascertain causal effects in social sciences and sciences, and are relatively easy to translate

- the basic idea is that a certain continuous variable is appalled due to a rule-based external policy or eligibility criteria.

- Individuals just below that threshold are said to be on the side of the policy eligibility criteria.

- The rule-based externally policy is the e-wallet scheme.

- The causal relationship was estimated through socio-economics variables of the participants and policy of eligibility criteria influencing the same.

Estimation procedures

- normally fuzzy RDD's are estimated using Two-Stage Least Squares (2SLS), with the threshold functioning as the exogenous instrument to distinguish causal effects, in this case e-wallet scheme

- likelihoods that beneficiaries of the e-wallet scheme, had a first stage interaction model and are thus used in the second stage to obtain the causal effects of timely access to e-wallet scheme on income and generally well–being (y)

- However, there was a discontinuity in the number of participants that had relatively lower income than the threshold.

- RDD approach is most effective at reducing bias if conducted on a sub-sample close to the threshold

- significant socio-economic variables that influencing access to e-wallet scheme and other factors (environmental-level externalities) influencing same.

- Exploring the fuzzy RDD in the data for a robust analysis.

Estimation procedures contd.

- Through this assessment, the study reveal the means through which farmers maximize the benefits of the e-wallet scheme access vis-à-vis those farmers who did not.

- Participants selected into the study were the beneficiaries of e-wallet policy scheme.

- In the buildup of the threshold farm income pre and after benefiting from the e-wallet policy scheme were taken.

- This approaches enable the study to observe the influence of the e-wallet on farm income, value-addition market access and livelihood diversification.

- Hence, this divides respondents into a neat treatment and control group around the threshold. Somewhat huge disparities in outcome variables around the threshold are plausibly caused by the external "rule" only and were not considered.

- Thus, could access to e-wallet scheme leads to an improved farm income, value chain, market access and livelihood diversification?

Results and Discussions

Descriptive Statistics

- there is an improvement on farm size cultivation as there established a causal effect of e-wallet scheme participation and farm size.

- timely access to agricultural inputs and market for agricultural outputs, thus influencing agricultural outputs and income increase.

- 87.5% of the participants in the programme had income increase and are mostly young adults (mean age of 47years).

- Diversification index of 11.5 was found out and this was influenced by educational level of the participants and timely access to information on the social assistance programme and stimulus of value addition.

- Participation in e-wallet scheme created additional livelihood through value chain analysis and enable such households to pursue non-market farming activities.

Table 2: Description of Main Variables used in RDD model
Source: Own calculations where *p<0.01 **p<0.05 ***p<0.1

Particulars	Access to e-wallet scheme participating farmer)	Access to e-wallet scheme (non-participating farmer)	Difference	N
Per capita monthly household income (Naira)	45,002.00	31,002.04	113.27***	545
Per capita monthly income from participation in e-wallet scheme (Naira)	84,378.75	31,002.04	39.77***	517
Age (years)	47	59	0.381	583
Education of head (years)	5.02	3.41	1.82*	583
Proportion of heads male	0.82	0.77	0.19***	583
Proportion of heads married	0.89	0.72	0.16***	583
Household size	5.02	7.08	-1.45***	583
Distance to market (m)	74.05	74.05	-24.16	583
Per capita access to immediate credit (Naira)	150,000.00	20,000.00	57.09*	583
Access to extension services	0.71	0.43	0.14*	583
Farm size expansion	0.67	0.31	0.24**	583
Livelihood Diversification index	11.5	0.14	0.15*	524
Number employed in household	0.64	0.49	0.16***	545
Proportion access to good road	0.58	0.37	0.21***	550
Proportion access to small farm machineries	0.55	0.24	0.15*	550
Proportion rating themselves as participated in value – addition.	0.62	0.17	0.24**	501
Proportion rating themselves as improved wellbeing	0.89	0.31	0.03*	537

The causal effect of e-wallet scheme on access to Agricultural Inputs Acquisition and poverty reduction.

- RDD results indicated F statistic of 40.91, a strong instrument.
- instrumenting the RDD:
➢1 % increase in per capita income from the e-wallet scheme participation is linked with 0.75 increase in a household's probability to engage in livelihood diversification.
➢the outcomes indicated an estimate to 1.2 per cent, which showed that there is exist a causal impact of e-wallet participation and income increase and regular market access.
- Moreover, the probability of farm-inputs acquisition prompts diversification to non-farm income sources and this could be ascribed causally to e-wallet participation scheme.

Results and Discussions contd.

- The Hausman test on the casualty also indicated a simultaneity.

- first stage regression shows that crossing the threshold substantially raises the probability of deriving full benefits in the participation in the e-wallet scheme.

- The downward bias of the OLS coefficient indicates that poorer farmer's select into social programme assistance have the tendency to improve on

➢their poverty status, because there is an assurance of timely access to agricultural inputs

➢market for their produce.

➢timely access to credit facilities facilitated by e-wallet scheme

➢motivation of individuals to increase farm size and agricultural outputs.

Table 3 Linear Probability Model for the tendency of e-wallet scheme to stimulate access to Agricultural Inputs and improved well-being
Source: RDD computer results,
Notes: Own calculations. Estimates are weighted. Where ***p<0.01 **p<0.05 *p<0.1

Particulars	Access to e-wallet scheme participating farmer)	Access to e-wallet scheme (non-participating farmer)	Access to e-wallet scheme participating farmer)
	OLS	2SLS first stage	2SLS second stage
log(per capita income from access to e-wallet scheme)	0.75***		0.012***
log(per capita income from other sources)	0.014**	-0.034	0.015**
log(per capita access to credit)	0.88***	-0.012	0.081**
access to extension	0.51***	0.142	0.031**
Education of head (years)	0.02***	0.034**	0.002***
Proportion of heads male	0.82	0.77	0.19***
Proportion of heads married	0.047*	0.182	0.038*
log(HH size)	0.051***	0.102	0.063***
Distance to market (m)	-0.031	-0.136	-0.031
Access to market	1.1***	0.18	1.38***
Farm size expansion	0.04*	0.31	0.14**
Livelihood Diversification index	1.3***	0.14	1.42***
Proportion access to good road	0.58	0.37	0.21***
Proportion access to small farm machineries	0.05*	0.41**	0.061**
Proportion rating themselves as participated in value – addition.	0.041***	0.28**	0.051**
Constant	0.318***	-1.725***	0.501***
R-squared	0.071	0.42	0.070
N	583	583	583

Conclusions

- Social assistance progarmme as an effective channel to actively promote rural development (since majority derived their livelihood from agriculture and agricultural related activities) through timely access to agricultural inputs and market.

- improved income, value chain analysis and diversification of participants.

➤The causal relationship between the social assistance programmes of e-wallet scheme and poverty reduction indicated a simultaneity.

➤Policy to improve prompt access to agricultural input and market could also lead to poverty reduction.

Conclusions contd.

- e-wallet scheme can be used to reduce poverty as 87.5% of the participants in the programme had income increase and mostly young adults.

- RDD results revealed that a 1% increase in per capita income from the e-wallet scheme participation is linked with 0.75 increase in a household's probability to engage in livelihood diversification.

- There is exist a causal impact of e-wallet participation and income increase and regular market access.

- Hence, access to e-wallet scheme stimulate fairness of access to agricultural inputs acquisition and poverty reduction among participants.

- Thus, this study provided useful guidance for policy makers in Nigeria as they explore the options for scaling-up access to transfers and for reforming the current system.

- Consequently, this study call for urgent need for the assessment of the pilot phase of the scheme for an effective implementation.

E-wallet Challenges and Possible soluions

- mismatch of e-wallet with other technologies,

- telephone network disappointments,

- low density handling of agro dealers among others.

- Hence, there is need for effective interconnectivity of rural telephone networking,

- extension agents to improve on interpersonal communication of the rural populace,

- medium of effective information dissemination and feed back mechanism to be established

Thanks' you for Listening....