

**ANALYSIS OF RESPONSE CAPACITY OF RURAL HOUSEHOLDS TO
SELECTED POVERTY INTERVENTION PROGRAMMES IN IMO
STATE, NIGERIA**

BY

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CERTIFICATION

This is to certify that this research work was carried out by Ajaero, Joseph Onyewuchi for the award of the degree of doctor of philosophy (Agricultural Extension) of the Federal University of Technology Owerri, Imo State, Nigeria.



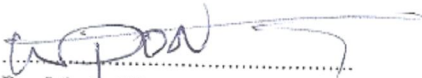
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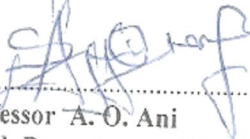
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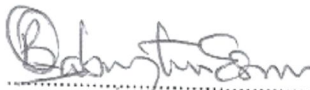
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DEDICATION

To my loving father, His Eminence Apostle-General C. E. Ajaero

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ABSTRACT

This study analysed the response capacity of rural farmers to National Fadama Development Programme (NFDP) and National Special Programme for Food Security (NSPFS) in Imo State, Nigeria. The specific objectives were to; categorize and describe response capacity of rural farmers, assess the level of knowledge of rural farmers' to the rural poverty intervention programmes, determine the relationship between behavioural process and response capacity, determine factors that affect positive response to rural poverty intervention programmes, ascertain the rural farmers' perception of agricultural extension effectiveness on positive response to rural poverty intervention and identify the perceived constraints to desirable response to poverty intervention programmes in the study area. Data were collected through the use of standardized questionnaire. Descriptive statistics (frequency distribution, mean score and percentages) and inferential statistics (multinomial logit regression, Chi-square and Univariate analyses) were used to analyse the data generated. The mean age was 50.7 years. Majority (57.9%) of the rural households in the study area were male with mean household size of 6 persons. The results further showed that majority (86.5%) of the rural farmers were engaged in crop production. The mean net annual farm income was N97041.63. Majority (90.6%) were members of social organisation especially cooperative societies (65.1%). A total of 97.4 percent had one form of formal education or the other. Extension agents (71.7%) were identified as their major source of agricultural information. The study found that majority (58.3%) of the rural farmers had high level of knowledge about NFDP while only 31.7% had high knowledge level about NSPFS. Majority (64%) of the rural farmers perceived extension service as not effective in activities in rural poverty intervention programme. The study also revealed that behavioural process has a positive and significant effect on response capacity at $p < 0.05$ critical level with a regression coefficient of 0.693 and R^2 of 0.894. Majority (65.7%) of the rural farmers in the study area fell within the desirable response capacity, which is a sociological prerequisite for participation in rural poverty intervention programme. The multinomial logit regression results revealed that probability of being in the desirable response category increases with net annual income (4.055) and farmers' self esteem (0.373) while sex (4.645), level of education (9.300), extension effectiveness (38.569), number of information sources (11.772) and distance to LGA headquarters (11.111) each decreases the probability of being in desirable response category to rural poverty intervention relative to the reference category. The constraints militating against positive response to NFDP and NSPFS poverty intervention programmes included institutional bottlenecks of the programmes ($M = 3.32$), lack of access to credit (3.19), lack of capital ($M = 3.00$), stringent requirements for qualification to participate in the programmes ($M = 3.16$), lack of awareness of NSPFS ($M = 2.98$) and lack of awareness of NFDP ($M = 2.56$). The study recommends that government should reposition extension service to be effective in services delivery to targeted beneficiaries in future poverty intervention programmes. Also the existing public agricultural extension service, Imo State Agricultural Development Programme (IMADP) should work in synergy with programme-donor agencies in order to carry out good sensitization campaigns at the inception of any rural poverty programme to create awareness and lay the foundation for desirable response required for the programme success.

Keywords: Response capacity, Rural, Poverty, Households and Programmes

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Rural development has been of major concern to successive governments in Nigeria. This has given rise to increased government spending in this respect in order to improve these areas which have been described as the antithesis of the urban areas (Onwubiko, 2010). The Rural areas are usually explained in terms of the geographical character of the area being described and the way of life of the inhabitants conditioned by their environment (Obasi, 2010). Nigeria has an estimated population of 167 million people out of which about 75-80% of the Population are regarded as rural (Odo, 2010 cited in Egwemi and Odo, 2013). The rural sector constitutes the economically backward areas of Nigeria. CIA World Factbook (2015) noted that rural areas in Nigeria are variously characterised in literature as being close to nature, lacking in basic social amenities, relative homogeneity of culture, limited educational and employment opportunities etc. (Aroh, 2010; Ekong, 2010). It is estimated that about 70 percent of Nigerians live below the poverty line (Okhiria & Obadeyi, 2015).

As pointed out by Dakyes and Mundi (2013), rural areas are characterised by poverty due to lack of basic skills, and education necessary for gainful employment. Dare et al., (2014) have defined poverty as a state in which an individual, a group, or population lacks the essential elements of life within their societies. Poverty is usually a phenomenon of rural dwellers in Nigeria. Other dimensions of poverty in Nigeria have been listed to include household income poverty, food poverty/insecurity, poor access to public services and infrastructure,

unsanitary environment, illiteracy and ignorance, insecurity of life and property and poor governance (Manyong et al., 2005). Hunger and poor infrastructural facilities in rural areas have been associated with criminal activities and rural-urban migration (Asiabaka, 2002a; Angus, 2010; Aworemi et al., 2011; BBC, 2012; International Monetary Fund, 2013; The Economist, 2014) in many societies. If the problem of food and infrastructural facilities are adequately addressed in rural areas, it could reduce the rate of crime and rural-urban migration in Nigeria, which was estimated at 3.75% (CIA World Factbook, 2015). It is in this respect that Kearney, Boyle and Walsh (1994) opined that an improvement on the conditions in this geographical description requires an initiation of a process to create social products such as upgraded leadership, a culture of enterprise and innovative action or the enhanced capacity of people to act in concert purposefully and effectively so as to cope with the threats and opportunities they face.

Over the years, successive governments in Nigeria have introduced one form of rural development programme or the other interventions with one common objective, which is to empower the rural dwellers by harnessing and mobilizing their human and material resources for the purpose of transforming their environment, for the better and providing their socio-economic needs, ranging from employment, quality healthcare, improved nutrition, adequate and comfortable accommodation, quality education and adequate security (Obasi, 2010). The list of institutions and programmes established by the successive government in Nigeria with a view to reduce the incidence of poverty is in exhaustive. However, Taiwo and Agwu (2016) opined that it is sad to observe that all these effort have not produced the desired results as they have only achieved modest successes while the level of poverty still remain high.

According to Country Intervention Framework (CIF) (2014), Nigeria's Human Development Index (HDI) ranks it in 152nd place out of 187 countries classified in 2014. The main social indicators have deteriorated in particular in the fields of maternal health and education. One of the major challenges that need to be addressed is that of health, which is especially reflected in the low level of life expectancy in Nigeria: 52 years in 2012, against 46 years in 1990. Nigeria is lagging behind the average of Sub-Saharan African countries (56 years in 2012). Similarly, only 64% of the population had access to a source of drinking water in 2012, a much lower level than in the rest of Sub-Saharan Africa. Despite the growth in GDP and given the strong population growth, poverty has once again gained ground. The National Bureau of Statistics (2012) noted that while it is true that the absolute poverty index fell from 48% of the population in 2004 to 46% in 2010, over 68% of the population is living with less than 1.25 dollars a day and 85% with less than 2 dollars a day. This means that over 100 million people were living in extreme poverty in Nigeria in 2010.

Manning (2007) while writing on the ways by which poverty could be reduced argued that rapid and sustained poverty reduction requires "pro-poor growth", that means, a poverty alleviation strategy that will enable both men and women to participate in, contribute to and benefit from growth. This therefore implies that growth should cut-across all sectors and regions and must include the large part of the workforce that make up the poor men and women. He also added that all policies for sustaining growths such as those aimed at strengthening institutional capacity, promoting democratic and effective governance should be geared towards increasing poor people's incentives, opportunities and capabilities for employment so that they can participate and also benefit from the growth. In order to ensure that the poor would participate in and benefit from the growth process, governments at all

tiers should enhance development of the agricultural and infrastructural sector so as to expand the economic activities of the poor.

These programmes on rural poverty eradication were envisaged to culminate into improved standard of living with the hope of reducing abject poverty. A programme, is a comprehensive plan that includes objectives to be attained, specifications of resources required and stages of work to be performed (Asiabaka, 2002a). Elaborate plans are called programmes (Kirkpatrick, 1987). According to Olatunji (2005), a programme is a collection of coordinated activities that are mutually directed towards the attainment of a definite goal and it usually comprises of several segments or projects which can be separately pursued as a component of the whole. The concept of rural poverty eradication programme implies that a goal is in focus and several activities would be needed and co-ordinated to attain the goal.

The overall goal of poverty intervention programmes in Nigeria is to reduce the high prevalence of poverty (Omoniyi, 2013). The increasing prevalence of rural poverty is being exacerbated by mismanagement of resources, poor programme implementation, low patronage by the targeted rural poor and lack of purposive leadership. The desire to reduce global extreme poverty prompted international development communities to intervene by partnering, sponsoring and supporting programmes that will actualize the desired goals by addressing the failings of past poverty eradication programmes.

Response capacity is derived from two key words: response and capacity. Different disciplines apply response in different ways and may use the word response to describe different processes. Response is a broad process occurring due to the effect of some antecedent stimuli or agents and connotes different meanings to various disciplines (Business Dictionary, 2014). According to Mgbada (2010), response is a behavioural process in

reaction to a stimulus which could be positive or negative. Response is positive when the subject's behaviour is towards the stimulus/inspiration and negative if reaction is away from the stimulant. Response is therefore any behaviour that results from a stimulus. Response evokes a number of behavioural processes. Behavioural processes are of two types namely; observable process such as gestures, engagement or involvement or participation and inferred processes like thoughts and dreams. Response awakens interest and apathy (Murphy and Davidshofer, 1998). Interest is the response to liking while apathy is a response elicited by disinterest based on previous experience and circumstances.

Capacity is often defined in terms of ability and performance. According to Oxford Advanced Learner's Dictionary (2000), Capacity is defined as the ability or qualities necessary to do something. The United Nations Development Program (UNDP) (1997) defines capacity as the ability to perform functions effectively, efficiently and sustainably. This definition can also be applied in response capacity. The concept of response capacity in this study means the ability of the rural household members to react to rural development interventions with the intent of participating in them. Rural development intervention is considered a form of stimulus, which seeks for a better welfare for a target population. Once the programme has been created, target population engages in behavioural activities that create interest that brings the group's expectations close to acceptance of the programme, organise actions that will accommodate the consequences and prepare grounds for participation. Positive disposition in response capacity is paramount to the success of such intervention.

Participation is secondary to the response process as the latter is accommodated in a dynamic process that brings the expectations of the beneficiaries side by side to the targeted objectives of the programme {United Nations Office for Coordinating Humanitarian Affairs (UNOCHA), 2001}. Targeted groups have an array of expectations that guide their responses

to any programme. Hence, response capacity of targeted group to a development programme must involve organised actions capable of achieving a product from the programme as well as accommodate the resultant consequences. This action usually comes before group participation in the programmes. Response capacity of targeted groups to development programmes involve some latent dynamic behavioural processes of the group towards the programmes before participation. Response capacity could be extended to all subsets of rural development programmes in health, education, poverty alleviation programmes and other climate and risk factors.

The attainments of programme objectives do not occur in a vacuum until the target beneficiaries embrace the programme, participate and benefit from it. Successive governments in the country have embarked on several programmes aimed at boosting agricultural production for food security and poverty alleviation. It has been observed that these programmes only vary in nomenclature and organizational network (Amalu, 1998). The changes in names of these development programmes only reflect changes in administration or government. They emphasize almost same objectives like: to provide food for the inhabitants of the nation (food security and sufficiency) and export excess to other countries and to provide rural dwellers and farmers with extension services, agricultural support and rural development services etc. Despite these efforts, Nigeria is yet to achieve food security for her teeming population and alleviate poverty challenges facing the rural households (Ogbe and Njokuoma, 2010; Tawari, 2006 and Summit Report, 1997). Consequently, the rate of poverty in rural areas keeps increasing steadily.

The National Fadama Development Programme (NFDP) and National Special Programme on Food Security (NSPFS) were used in the study because they adopted the new paradigm shift of popular participation in development, which is broadly understood as active

involvement in making decisions about the implementation of processes, programmes and projects which affect them (Rocheleau, 1994). Participation in rural development is being encouraged because there is increasing realization among African scholars, policy makers and development experts that local people are rational and possess the right capabilities to sustain an indigenous based development strategy in sharp contrast to the failed economic and social strategy adopted since independence in many African countries (Adisa and Jibowo, 2009).

The NFDP and NSPFS have the same general broad objective of eliminating rural poverty, although NFDP was initially conceived to address the problem of agricultural development with respect to rain-fed systems of production. But the scope was expanded following the successes of the earlier pilot project to equally address developmental issues in the rural areas by providing a framework for addressing poverty, food security and unemployment. The focus of the study on the two development programmes is also based on the development approach they adopted, the community driven development (CDD) approach. This approach encourages extensive participation of the stakeholders at inception of the projects. This approach is in line with the policies and development strategies for Nigeria which emphasize poverty reduction, private sector leadership and beneficiary participation (<http://www.fadama.org/>).

1.2 Statement of the problem

In Nigeria, rural poverty is relatively high. According to Trading Economics (2015), rural population in Nigeria was estimated as 52.2% of the total population based on the World Bank population estimates. A national poverty survey carried out indicates that the high tropic areas have moderate poverty while the northern regions have poverty levels that are as

high as 60% (Apata et al., 2010). The report stated that only 31% of the rural population in Nigeria has access to water and in the area of sanitation, about 36% rural population has access to sanitation services (Trading Economics, 2015). This information however showed that those in the rural areas in Nigeria live in very hostile environments compared to those in the cities. With this, there is high incidence of diseases in the rural areas. This rural situation led to a series of interventions introduced to ameliorate this undesirable living condition. Programmes like Family Support Programme in the mid-90s and National Poverty Eradication Programme (NAPEP) by the early 2000s which performed minimally in relation to set objectives and did not bring meaningful shift from status quo (Mukhtar, Mukahtar and Ahungwa, 2015). Bradshaw (2006), identified system failure in this situation and recommended the reversion to change in individual's behavior rather than system change, which recent policy programmes are pursuing. This study therefore, sought to investigate the behavioural process captured in NFDP and NSPFS rural poverty intervention programmes.

Some growth indices are often paraded by the Nigerian government, but, there is a disconnect between it and existing realities as the country still exhibit large symptoms of underdevelopment as reflected in the socio-economic lives of Nigerians. Nigeria is further ranked as one of the twenty five poorest nations in the world. According to Bello (2007), 70% of the over 140 million Nigerians currently live below the poverty line of one dollar per day. In addition, the rapid urbanization, put at over 5 percent per annum, exerts severe pressure on ailing infrastructure and further exacerbates rural poverty in the country.

Over the past five decades, Nigeria has never been short of programmes and reforms aimed at alleviating the failing rural economy, livelihood, insecurity and other specific policies associated with poverty alleviation and rural community sustainable development than she is

now. It is important to note that in Nigeria the consequences of poverty seem to become more severe as the list of programmes on poverty eradication grows. This prompted the general belief among the poor according to Omoniyi (2013) that poverty eradication programmes are never meant to actualize their stated objectives. The question could be posed on how much the targeted rural poor know about the poverty intervention programmes? The process of creating awareness, accessing knowledge about and making decision are important in participating in any intervention programme. Awareness stimulates the quest for more information needed to build ones knowledge of the interventions.

Some of the introduced development programmes were multi-sectoral and others were specific in their approach to rural development. The approaches that were specific concentrated on the agricultural sector since significant population of the rural dwellers are engaged in agriculture, with the anticipation that improvement in the sector will have a multiplier effect on the rest of the rural economy. The agricultural sector approach will ultimately move agriculture from being a mere traditional cultural practice to a sustainable vital agribusiness activity. The agricultural-based development efforts were found to have adopted increased production approach (Manyong et al., 2005).

There is growing literature on participation in rural poverty alleviation programmes that were launched to reduce poverty through the revitalization of agriculture in Nigeria but the response capacity to these interventions were not addressed. This could be attributed to the complex interwoven twin concepts of attitude and behavior changes, which agricultural extension is concerned with. Participation, which has been the focus of many scholars is quite associated with behavior, an outward inclination to react in a certain way in the society that could be observed but response is psychologically internalized within the individual, a reaction to stimuli (Mgbada, 2010). There is a gap in knowledge of the predisposing factors

that accounts for the individual's behaviour prior to participation in rural poverty intervention programmes. This study sought to bridge this gap.

In rural areas where agriculture is the major means of livelihood, agricultural extension is a necessary instrument for developing agro-related enterprises that promote productivity and generate income that can ultimately reduce poverty. The role of agricultural extension is to persuade the farmers through communication and learning process that will lead to attitudinal change favourable to participation in rural livelihood intervention programmes. The service also creates awareness of these programmes by spreading messages through campaigns, using well publicized meetings and appropriate mass media and rural farmer-trainings. However, in performing this role, this important rural development institution has not been able to close the food insecurity gap nor eradicate the severe poverty among rural households, which have left a serious question on its relevance in the development sector. There has been subjective assessment of the performance of extension service in rural poverty intervention programmes. Assessing the effectiveness of extension service in these activities would be necessary as extension service is under obligation to demonstrate the economic and social impact they have made on the wellbeing of the farmers they serve (Blum, Lowengart-Aycicegi and Magen, 2010). There is the need in this study to identify and assess sources of information to rural households and assess the effectiveness of the extension service in developing required attitude in the rural clientele towards NFDP and NSPFS interventions.

The instrument of the economic interest groups is employed by both NFDP and NSPFS interventions to reach the target beneficiaries. The Fadama User Groups (FUGs) and the Participatory Farmers' Groups (PFG) are social units in the communities that benefitted from the programmes. These social groups enhance social interactions and information flow

among members. According to Krasner and Ullman (1973), behavioural process elements play out during the period of interactions among group members at meetings, discussions and trainings or workshops. Individuals influence and are also influenced by others. The social networks provide environment for members to pool their knowledge, experience and influence necessary for taking decisions. This situation may not be peculiar to NFDLP and NSPFS but in other spheres of rural development interventions; in agricultural sector, education, health and infrastructural development. Hence, there is the need to investigate the relationship between behavioral processes and response capacity to NFDLP and NSPFS. This is important to stimulate genuine interest and instill zest for future rural poverty intervention programmes in rural areas of Nigeria.

Rural development experts have identified factors, which accounted for low patronage to previous rural interventions. Alfred (2004), Ojeifo (2014) and Umar (2015) noted that endemic corruption, poor economic policies, poor funding of extension and low utilization of extension service for the programmes mobilization strategies were major reasons for the failure of past initiatives to reverse increasing poverty situation. These experiences could create apathy in the individual, which affect his/her response to future interventions. This study sought to bridge the gap between response and participation in rural poverty intervention programmes.

Amuzegar (1982) cited in Ololajulo (2009) noted that the decline in social value system which is expressed in the reduction in virtue of individual self-reliance and the propensity to rely on unearned income for livelihood have resulted in apathy to responding to rural development intervention programmes even when incentives were provided. According to research findings, lack of interest has caused a drift from engagement in economic activities

by majority of Nigerian workforce to other activities, hence low utilization of resources provided for increase in food production and sustainable livelihood in Nigeria (Okowa, 1994). This study therefore sought to identify the constraints that affect response capacity of rural farmers to NFDP and NSPFS poverty intervention programmes. Proffering solutions to the identified constraints would improve the desired response to participation in rural poverty intervention programmes in the rural areas.

The National Fadama Development Programme (NFDP) and National Special Programme for Food Security (NSPFS) are the latest of these intervention programmes and another variant of multi-sectoral approach to rural development, which recognizes other non-agricultural sectors that do not work on land but impact on food security and income generation of dwellers in rural communities. This study provided answers to the following research questions:

- what are the socio-economic features of the rural households in the area?
- what are the different behavioural processes of rural households towards interventionists' development programme before decision to participate in the area?
- what are the response capacities of rural households to rural poverty intervention programmes in the area?
- are the target beneficiaries aware and how was enlightenment for the NFDP and NSPFS programmes carried out?
- is there any association between the response behavioural processes of rural households to rural poverty programme and extension services?

1.3 Objectives of the Study

The broad objective of this study was to analyze the response capacity of rural households to rural development programme with respect to selected rural poverty interventions in Imo State, Nigeria. The specific objectives were to:

1. examine the socio-economic characteristics of the rural households in the area,
2. identify sources of information on NFDP and NSPFS rural poverty intervention programmes available to the rural households,
3. describe the level of knowledge of rural households' to NFDP and NSPFS poverty intervention programmes in the area,
4. analyze the relationship between rural households' behavioural processes and their response capacity to rural poverty intervention programmes in the area,
5. categorize the response capacity of rural households to rural poverty intervention programmes in the area,
6. isolate factors affecting rural households' response capacity to rural poverty intervention programmes in the area,
7. examine the perception of rural households on the effectiveness of agricultural extension service to positive response to rural poverty intervention programmes and
8. identify constraints militating against positive responses to poverty intervention programmes in the area.

1.4 Hypotheses of the Study

The following null hypotheses were tested with respect to the objectives of the study:

1. H₀: There is no significant association between the rural households' socio-economic characteristics and response capacity to rural poverty intervention programmes in the study area.

H_a: There is significant association between the rural households' socio-economic characteristics and response capacity to rural poverty intervention programmes in the study area.

2. H₀: The perceived level of extension effectiveness by rural households has no significant association with the rural households' response capacity to rural poverty intervention programmes in the study area.

H_a: The perceived level of extension effectiveness by rural households has significant association with the rural households' response capacity to rural poverty intervention programmes in the study area.

3. H₀: There is no significant relationship between the rural households' behavioural processes and their response capacity to rural poverty intervention programmes in the study area.

H_a: There is significant relationship between the rural households' behavioural processes and their response capacity to rural poverty intervention programmes in the study area.

4. H₀: There is no significant association between rural households' linkage with Agricultural Institutions and Response capacity to NFDP and NSPFS rural poverty intervention programmes in the study area.

H_a: There is significant association between rural households' linkage with Agricultural Institutions and Response capacity to NFDP and NSPFS rural poverty intervention programmes in the study area.

1.5 Significance for the study

The study on the analysis of response capacity of rural households to selected poverty intervention programmes will provide information that could help the individual make important changes in their decisions process to participate in socio-economic development programmes, which would assist the individual to achieve his potentials. Without sufficient understanding of the target beneficiaries' positive or negative attitudes towards a given programme, the participation process would be slow and ineffective.

This study will provide guides to development agencies, since according to Nwachukwu and Ezeh (2007), the concept of rural development has been broadened in recent times to accommodate non-economic issues especially those relating to social, political, legal, cultural and environmental issues. One must understand the behavioral process of the rural households in any given environmental cue to be able to influence their participation

behavior. There is the need to assess the responses of target beneficiaries to interventions which will allow development agencies to make informed decisions about the effectiveness of the interventions and tailor them to meet the needs of the target population. The results of the study will assist the development agencies to design appropriate interventions to specific targeted beneficiaries for the betterment of the rural community.

The result of this study will also add to the body of existing literature on rural poverty reduction and will also be a valuable reference manual to equip extension service providers with suitable information that will guide clientele's behavioural process. Extension as an educational process designed to produce change in rural people; changes in knowledge, skill and attitude which are behavioral. The results of this study will therefore, equip extension experts in determining the extent to which those desired behavioral changes have been accomplished in ways of thinking, feeling and acting with their input to rural poverty intervention programmes.

This study will contribute to advance knowledge in the discipline of Agricultural Extension. Behavioral process as a gateway to participation in interventionists' programmes as conceived in this study has relatively been ignored in previous research works, which have concentrated on participation in rural development programmes. The neglect of this area of study could have resulted in programme failures occasioning poor responses of the targeted beneficiaries. The result will fill this gap in research.

The dearth in literature about behavioural process and response capacity measurement will be supplied from the findings of this study. Similarly, development practitioners and interventionists on programme and development in the rural areas will find the study a veritable benchmark in advancing policies on rural development.

1.6 Scope of the study

The study was concerned with how rural households react to the introduction of programmes that would improve their social conditions. This study did not examine actual participation of the rural households but investigated what catalyzed their decision to participate in the programmes. The observed action taken upon the introduction of poverty intervention programmes, preceding participation was the scope of this study.

CHAPTER TWO

LITERATURE REVIEW

This chapter attempts to review relevant literature to the topic under study. The discussions are divided into two sections, namely;

Empirical literature review

- a. Rural areas of Nigeria
- b. Rural poverty in Nigeria
- c. Rural development and poverty eradication in Nigeria
- d. Approaches to Rural Development
- e. World-Bank assisted agricultural Development Schemes in Nigeria
- f. Fadama and irrigation farming in Nigeria
- g. National Special Programme on Food Security (NSPFS)
- h. Targeted social groups in rural development
- i. Roles of agricultural extension in developing positive response of rural households to development programmes
- j. Factors influencing response capacity and participation

Theoretical framework

- a. Reinforcement theory
- b. Theory of planned Behaviour (TPB)
- c. Conceptual framework

2.1 Empirical literature

2.1.1 Rural areas of Nigeria

Nigeria is the eight most populous countries in the world. It is made up of 774 local government areas. According to Abur, Eche and Torruam (2013) about 70% of the Nigerian population reside in rural areas and spend their livelihoods there. Majority of these rural dwellers depend on subsistence farming as their major means of livelihood while others are artisans, traders and government employees (Ewium, 2010). One common feature of rural existence in Nigeria is poverty. It can be said that poverty and rural existence roughly coincide hence any attempt at tackling the menace of poverty in Nigeria must focus on the rural areas, which implied that rural development can be a major vehicle for poverty reduction in the country (Egwemi and Odo, 2013).

Dauda and Aderonmu, (2010) note that a visit to any rural community in Nigeria will reveal dirt and unmotorable roads, women and children walking barefooted and trekking long distances to fetch water and firewood, pupils studying under trees, dilapidated and ill-equipped health centres and scores of poverty-driven problems. The quality and quantity of educational facilities in the rural areas is inadequate, compared to that in the urban areas. Poor education and ineffective use of research findings have inhibited the ability of rural

dwellers to acquire and utilize technology, thereby reducing their ability to improve productivity and income. Rural dwellers' access to land is still limited. There is a great deal of disparity between rural and urban wages – the income differential always tilts in favour of urban areas, thereby causing migration to urban areas in order to bridge this income differential and improve their standard of living.

Ojeifo, (2014) opined that in the past, infrastructure in rural areas were neglected while investments in health, education and water supply were focused on urban areas. Neglect of rural infrastructure affects the profitability of agricultural production. The lack of rural roads impedes the marketing of agricultural commodities; prevents farmers from selling their produce at reasonable prices to make gains and leads to spoilage.

These negative forces pressurize many peasant farmers to abandon their farms and drift to the urban areas to seek for jobs. This development has led to urban growth. The very rapid rate of growth has overwhelmed the capacity of the state urban management agencies coupled with cumbersome land resources' allocation for provision and maintenance of infrastructure.

2.1.2 Rural poverty in Nigeria

The United Nations Development Programme (UNDP) in Egwemi and Odo (2013) defines poverty as a state of long- term deprivation of those essential and non-material attributes, which are considered necessary for decent living. Ogunna (2007) in Abur, Eche and Torruam (2013) defines poverty as the absence of money and material which enable the individual to sustain himself and live a good life. Abiola and Olaopa (2008), on the other hand argue that the scourge of poverty in Nigeria is an undeniable fact which results in hunger, ignorance, disease, malnutrition, unemployment, poor access to credit facilities, and low life expectancy

as well as general level of human hopelessness. Poverty has conventionally become the barometer to measure the performance of a nation's economic development efforts as its manifestations have varied in forms globally. It has also assumed a major socio-economic concept on which the performances of other socio-economic activities are assessed on their ability at checking it. Thus, the Nigerian government regretted that the Gross domestic product (GDP) stagnated at just 0.8% between 1999 and 2003 far lower than the 4.2% per capita growth needed to significantly reduce poverty. This implies that poverty was on the increase during the period as the nation's attention has been totally diverted into petroleum exploitation for revenue generation that will make farm families and the nation foods secure (Ater et al., 2008).

Upon consideration of the Joda panel and Abdullahi Committee Reports, fourteen core poverty alleviation ministries were identified as follows: Agriculture and Rural development; Education; Water resources; Industry; Power and steel; Employment, Labour and productivity; Women affairs and Youth Development; Health; Works and Housing; Environment; Science and Technology; Solid Minerals Development; Finance and National Planning Commission. Generally, agriculture and rural development constitutes part of an overall development strategy, which concept has been embraced by most countries to connote "a process through which rural poverty is alleviated by sustained increases in the productivity and incomes of low income rural workers and households".

According to Ezeh and Mbanasor (2004), the seeming interrelationship between agriculture and rural areas make it imperative that specific programmes and strategies are usually designed to address the problems of underdevelopment and poverty. Findings in 2004 indicated that poverty was more acute in rural areas in Nigeria and that some geo-political zones were particularly harder hit than others by the phenomenon while unemployment kept

sourcing with the worst affected age bracket being 13-25 years (Mahammed, 2006). According to Edoh (2003), Nigeria's democratic experience has neither served the purpose of political emancipation nor led to economic betterment of the citizens. This is especially in the face of endemic poverty, hunger, unemployment and progressive disempowerment of a large chunk of the population. The prospect of escaping the life threatening situations and achieving sustainable growth and development is therefore linked to the multiple churning out of variants of poverty and rural development intervention programmes in Nigeria.

2.1.3 Rural Development and poverty eradication in Nigeria

Rural development as a complicated process defies easy definition. This fact is attested to by diversity of definitions and forms which its programmes take in different parts of the world. According to Ladele (2005), rural development is a process by which a set of technical, social, cultural and institutional measures are implemented with and for the inhabitants of rural areas with the aim of improving their socio-economic conditions in order to achieve harmony and balance both on the regional and national levels. Similarly, in a more encompassing term, Combs and Ahmed (1974) defined rural development as a far-reaching transformation of the social and economic structures, institutions, relationships and processes in any rural area. In some places, it implies mass education and action while in others it involves communal action and community development and yet in others, it symbolizes rural re-construction and agricultural development. Asian Development Bank (2014) asserted that rural development has become one of the major aims of various assistance/intervention programmes of both individual developing countries and multilateral institutions/donors.

In the face of deteriorating poverty and underdevelopment, governments in Nigeria have over the years come up with various poverty alleviation programmes. The various programmes initiated and chiefly targeted at the rural sector by government according to Ogidefa (2010) include the following: National Accelerated Food Production Programme (NAFPP), River-Basin Development Authority (RBDA), Agricultural Development Programme (ADP), Operation Feed the Nation, The Green Revolution, Agricultural Credit Guarantee Scheme (ACGS), Directorate for Food, Road and Rural Infrastructure (DFFRI), Better Life for Rural Dwellers (BETTER LIFE), National Agricultural Insurance Corporation (NAIC), National Directorate of Employment (NDE), National Agricultural Land Development Authority (NALDA), National Poverty Eradication Programme (NAPEP), National Rural Roads Development Fund (NRRDF), Rural Banking Scheme (RBS), Family Support Programme (FSP), Universal Basic Education (UBE) and Rural Infrastructure Development Scheme (RIDS).

The living conditions of the rural people have remained virtually unaffected by development efforts in Nigeria (Egwemi and Odo, 2013). Consequently, the most common features of rural Nigeria are poverty, unemployment and inequality in incomes as well as absence of social amenities. The transformation of these handicaps in the rural sector is the key to any meaningful programme of national development and social change to enable the country achieve the much-needed structural break from poverty and underdevelopment, which threaten to become a permanent feature in the nation. A cursory look at the introduction, establishment, implementation and the objectives of majority of the above programmes will reveal that they are mainly targeted at rural development in an attempt to better the lives of rural dwellers, stimulate and enhance economic growth, as well as get the rural sector to contribute meaningfully to the national economic and social development.

2.1.4 Approaches to Rural Development

An approach indicates the means through which rural development project could be achieved (Onuekwusi, 2010). It depicts a procedure which utilizes some facilities associated with particular arrangement and management techniques to involve identifiable stakeholders to rural development. According to Nwosu (2010), rural development approach could be used interchangeably with rural development strategy and rural development model. Thus, Jibowo (2000), defined rural development strategy as a systematic, comprehensive and reliable tool aimed at bringing about desirable rural transformation, which is to improve the quality of life of the rural people. The following development strategies have been identified in literature:

- a. Agricultural development strategy
- b. Industrial development strategy
- c. Infrastructural development strategy
- d. Urban development strategy
- e. Basic needs development strategy
- f. Community-driven development strategy
- g. Sectoral development strategy
- h. Area development strategy
- i. Multi-disciplinary development strategy
- j. Integrated rural development strategy.

However, the Agricultural Development approach and Community-driven approach were discussed in more details below.

Agricultural Development approach

In Nigeria like many other developing countries, rural development has been synonymous with agricultural development due to the characterization of rural areas as agrarian societies. According to Oko (2010), Cited in Akinnagbe and Ajayi (2012) agriculture is not only the main occupation of the rural people, but it is also the major and more enduring source of food for the people and raw materials for industrial development. Agriculture improves food security in many ways, most fundamentally by increasing the amount of food but also by providing the means to purchase food. Nchuchuwe and Adejuwon (2012) note that through growth in agricultural productivity and higher farm profits, the rural poor can generate additional income to purchase more food, including more diverse kinds of food. Since agriculture is the mainstay of rural dwellers, agricultural development is the driving force for rural development.

Agricultural development is development that ensures sustained improvement in the productivity of people's lifestyle through agriculture. It is on this account that the integrated rural development projects were designed to ensure the agricultural and rural development efforts became part of a package of services offered to farmers and rural dwellers (Nwachukwu and Kanu, 2011; Ijere and Mbanasor, 2000). This broadened rural development concept otherwise known as the sustained rural development takes a long-term view of which meets the needs of the present generation without compromising the needs of the future generation.

The development process contains three elements, namely; economic, social and human (FAO, 2015). The economic element involves the development of the economic or productive base of any society, which will produce the goods and materials required for life. The

provision of a range of social amenities and services which care for the non-productive needs of the society consists of the social elements while the human element takes care of the people themselves both individually and communally to realize their full potential to use their skills and talents, and play a constructive part in shaping their society. The agricultural development approach has been criticized for its inability to provide solutions to other rural problems such as road, education, sanitation, water, health, nutrition as well as institutional based and other infrastructural needs (Nwosu, 2010).

Community-driven development (CDD) Approach

Prior to the adoption of CDD approach in rural development programmes, the top-down approach was used. The top-down approach was criticized for being authoritarian without involving rural communities in decision making either at the level of policy formulation or implementation (Osita, 2008; Omoniyi, 2013). Mgbada (2010), therefore sees community-driven development as a rural development strategy that is gaining wide application in interventions targeted at poverty reduction which the World Bank is sponsoring in Africa. It employs the bottom-up approach where communities and other lower government entities are empowered to develop participatory and social inclusive Local Development Plans (LDPs). It aims at building on social capital by harnessing community participation and also to improve social capital by strengthening centres for participatory development. Ejiofor (2007) cited in Ibeawuchi, Echeme and Nwachukwu, (2010), explained that the CDD strategy makes it possible for beneficiaries to play leading roles in:-

- (a) Identification and prioritization of their needs;
- (b) Deciding and preparing of micro- projects required to address the identified needs;
- (c) Co- financing of the micro-projects;

- (d) Continuing to operate and maintain the micro-projects thereby ensuring sustainability;
- (e) Learning to do things for themselves and in so doing their capacities are built and
- (f) Ownership of the micro-projects and guaranteeing active participation of beneficiaries in all the phases of the micro-projects cycle (identifying, prioritizing, planning, designing, implementing and maintenance of intervention measures).

2.1.5 World Bank assisted Agricultural Development Schemes in Nigeria

International development intervention agencies have implemented various rural and agricultural development projects in the country. Notable examples were the National Accelerated Food Production Programme (NAFPP), Green Revolution, and Agricultural Development Programme (ADP) (Abah, 2001). The World Bank championed agricultural development programmes in Nigeria in form of foreign aids. These programmes were laudable at inception, feasible and contributed to measureable successes in rural and agricultural development. However, many factors were identified to have contributed to their later failures. Chukwuemeka and Nzewi (2011) identified poor policy design (in the form of top- down approach), poor funding and frequent changes in leadership as major hindrance to World Bank assisted programme in Nigeria. According to Imoloame and Olanrewaju (2014), the withdrawal of World Bank component of the funding arrangement usually result in the collapse of such projects, Withdrawal of funding and fierce competition for resources from the national budget among different economic sections has substantially reduced the funding available for agricultural development.

However, despite the shortcomings of World Bank sponsored programmes, the institution returned to partner with the Federal government in the National Fadama Development Programme (NFDP).

2.1.6 Fadama and Irrigation farming in Nigeria

Nigeria has a total land area of 913,076km² with only 40% of the total land mass available for cultivation (Oparaeke and Dike, 2009). The United Nations Food and Agricultural Organization rated the productivity of Nigeria's farmland low to medium but with medium to good productivity if well managed. Agriculture is predominantly rain fed and principally managed by smallholder farmers who account for about 85% of the nation's food output using traditional system of farming (Okafor and Agbugba, 2010). This system is based on human energy supplied by labor force with average age of between 48 and 60 years. The above characterization of Nigerian agriculture has been associated with low productivity of the sector of the economy, which is incapable of feeding the teeming population and provide surplus for export and industrial needs. According to Imahe and Alabi (2005), Nigerian agricultural sector is also having challenges from declining arable land area per capita, erratic rainfall and climatic change, poor input supply, low capital expenditure and poor financial resource. The continuous reliance on rain fed system of farming reflects the underdevelopment of the national water resources.

The NFDP is a major initiative to address the problem of agricultural development with respect to rain-fed systems of production. It is programmed to provide a framework for addressing poverty, unemployment and empowering communities to take charge of their own development agenda (World Bank, 2006).

The National Fadama Development Programme (NFDP) is a strong instrument to achieving the policy thrust of National Economic Empowerment Development Strategies (NEEDS) as contained in the components of the intervention, which includes; productive asset acquisition support and rural infrastructural investments as means of empowering community groups to

take charge of their own development agenda (FMARD, 2003). The objectives of NFDP are accommodated within the empowerment elements of NEEDS that is consistent with rural development through poverty reduction, employment generation and a diversification of rural primary productive structure of the Fadama user groups (FUGs).

2.1.6.1 The structure of NFDP

The Federal Ministry of Agriculture and Rural Development (FMARD) is the executing agency of the FADAMA project. The Project Coordinating Unit (PCU) of the Ministry established the National Fadama Development Office (NFDO), which is responsible for the coordination of the project at Federal level. Similarly, at the State level the State ministry of Agriculture and Natural Resources (SMANR) established the State Fadama Development Office (SFDO). According to FMARD (2003), the SFDO will be responsible for general coordination of the technical and financial aspects of the project in each state. In addition the SFDO, anchors the state-level project implementation, which is responsible for promoting broad dissemination of the project's goals guiding lines, eligibility criteria, coverage and operational mechanisms, and encourage participation of the target population.

There is the Community-level project implementation represented by the Fadama Community Associations (FCAs), which responsibilities include:

- a. Become registered as a legal entity in accordance with existing local and state laws,
- b. Elect a management committee including a monitoring committee;
- c. Assign representatives to the local Fadama Development Committee meetings;
- d. Identify through a consensus-building process, priority investments for the members they represent;

- e. Ensure all members receive appropriate training;
- f. Open a specific bank account to receive subproject funds
- g. Open a specific bank account for deposits of FCA members funds for a revolving investment recovery fund;
- h. Carry out approved and agreed activities with the members' commitment to make contributions towards the financing of each activities and
- i. Prepare a Local Development Plan (LDP) following a participatory and socially-inclusive process and ensure timely submission to the Local Fadama Development Committee (LFDC).

The extent to which the target population engaged in these activities will be a good indication of their willingness to participate in the fadama intervention. In addition to the rural farm families pursuing their livelihoods in the fadama lands, other targeted beneficiaries included less dominant fadama users (fishers and pastoralists), marginal fadama users (hunters-gatherers) and vulnerable sub-groups such as widows and elderly. Specific groups' members of community target included; Association of farmers, pastoralists, traders and Artisans and Women groups (FMARD, 2003).

2.1.6.2 NFDP operational framework

The implementation strategy of the National Fadama Development Programme (NFDP) is the Community-Demand Driven Approach (CDD). This approach is in line with the policies and development strategies for Nigeria which emphasize poverty reduction, private sector leadership and beneficiaries' participation. Community-Demand Driven (CDD) approach

strongly emphasizes stakeholders' participation at the community level to develop participatory and socially inclusive Local Development Plans (LDPs) which provide the basis for support and funding under the project (PCU-NFDO, 2005). This paradigm shift from the traditional public sector dominated/supply led development approaches of the past to a private sector-led, demand-driven strategy ensures full guidance of participating farmers through several institutional structures. The various fadama resource users, including crop farmers, pastoralists, fishermen and women and on-and-off farm entrepreneurs, operating through their respective fadama resource user groups (FRUGs) and their apex bodies, the Fadama Community Associations (FCAs) agree on a consensus on how to use the common resources for their mutual advantage. Through this process, communities decide on the advisory and infrastructure they need to enable them attain development goals they set for themselves based on their efforts. The consensus so reached are articulated in Community Development Plans (CDPs) drawn at the level of the Fadama Community Associations (FCAs). The major functions of the fadama development offices at federal, state and local government area levels include planning, advisory, monitoring, management and supervision. However, facilitators are hired by the state fadama development team (SFDT) to organize the fadama users groups and guide them through the intensive processes of decision making using a wide range of participative techniques (World Bank, 2003). The labour, materials available and other resources of the farmers are monetized into the 10% paid by the farmers during the cost-sharing arrangement and agreement.

According to World Bank (2003), success stories have been achieved using this approach in India, Pakistan, Argentina and Kenya. However, in Nigeria, even though the fadama I project recorded some measure of success, certain limitations and its restriction to crop production only, brought about some problems of conflicts (Onoja, 2004). These conflicts which were

mainly between the farmers and other fadama users especially pastoralists and fishermen over stock routes, crop destruction and encroachment led to the initiative of fadama II. The fadama II programme fosters participation of all the other areas of farming. The project development document prepared by African Development Fund (ADF) of the African Development Bank (ADB) in collaboration with the Federal Republic of Nigeria (FRN) of 2004 is an adoption with moderations of the structural arrangements and implementation procedures planned during and after the lessons from fadama I. It has long term project development objectives as outlined by the World Bank (2003). These include to: sustainably increase the income of fadama users; Empower communities to take charge of their development agenda and reduce conflict between fadama users, written proposed action plan for both upstream and downstream post-harvest activities. A written commitment for regular payment of counterpart fund deducted at source (at the ministry of finance). Evidence of viable and active Fadama Resource Users Groups or economic groups; Evidence of the existence of conflict management committees. Compilation of a detailed assessment of existing fadama infrastructure, and a record of fadama loan recovery rate of 75%.

2.1.7 National Special Programme on Food Security (NSPFS)

Food insecurity is closely linked with poverty; however, traditional income and poverty measures however do not provide clear information about food security (Bickel, et al., 2000, (Nord, Jemison and Bickel, 1999). Focus on food security ensures that the basic needs of the poorest and most vulnerable groups are not neglected in policy formulation (Ajibola, 2000). According to Kidane, Maetz and Dardel (2006), food insecurity is a major component of poverty, as it has been established empirically that national poverty lines are largely based on the cost of purchasing of basic foodstuffs deemed sufficient for adequate nutrition. Thus, the

National Special Programme on Food Security (NSPFS) was launched in January 2002 in all the thirty six states of the federation during the Olusegun Obasanjo's regime. The project aimed to reach 30000 households from its 109 field sites in all the thirty six states of the federation. The broad objective of the programme was to increase food production and eliminate rural poverty. Other specific objectives of the programme were: assisting farmers in increasing their output, productivity and income; strengthening the effectiveness of research and extension service training and educating farmers on farm management for effective utilization of resources; supporting governments efforts in the promotion of simple technologies for self sufficiency; consolidating initial efforts of the programme on pilot areas for maximum output and ease of replication; consolidating gain from on-going for continuity of the programme and consequent termination of external assisted programmes and projects. The success of the project was such that the government increased the number of project sites to three hundred and twenty seven (327) reaching seventy thousand (70000) households directly through the project sites and seven hundred and fifty thousand households through the outreach components of the scheme.

In spite of the successes recorded in the programme, some setbacks were associated with it such as: the inability of majority of the beneficiaries to repay their loan on time, complexity and incompatibility of innovation and difficulty in integrating technology into existing production system. Others include: insufficient knowledge of credit use, poor extension agent- farmer contact, unavailability of labour to carry out essential farming activities, lack of modern storage facilities and high cost of farm input.

2.1.8 Process of Cooperation in Poverty Intervention Programmes

According to Panos (1979), the process of cooperation involves two or more individuals or groups that intentionally combine their activities to achieve mutual advantages or common goals which are to be shared by the participants. Cooperation enhances social facilitation, which is an increase in dominant responses in the presence of others leading to improved performance on well learned tasks and deterioration in performance on poorly learned or difficult tasks (Gunter and Robert, 1970). Social facilitation is as a result of social interaction in which personalities, groups or social systems act towards one and mutually influence one another.

The combined activities are fairly organized and may be similar or dissimilar. The former is typical of folk societies and the latter of modern societies. Cooperation, which is necessary for the survival of every society, may be an end in itself or a means to something else. It has been shown that group work can induce many beneficial outcomes in comparison to individual efforts. According to Ming (2000), individual efforts help constitute social interactions during group problem-solving situations such as cooperative coordination. However, the mutual advantages are seldom equal, since the smaller and weaker groups tend to gain more, which explains why they usually are more willing to join cooperative plans.

2.1.9 Targeted social groups in Rural Development

According to Nnadi and Amaechi (2004), a social group is a collection of individuals who share repeated interaction. In the interaction, individuals in order to give content and form to their behaviours, take into account the action of others. The rural communities are made up of many such groups, which affect the attitudes, needs and interests of their members.

Formation of social groups facilitates the building of social capital. Social capital is the ability to facilitate collective action for mutual benefit through the organization and participation of group members (Ehirim and Oguoma, 2013).

The different groups need to be identified for effective delivery of development packages as they do not have the same problems. The different groups have different characteristics, resources and skills which the development facilitators should respond to accordingly. The Food and Agricultural Organization (FAO) of the United Nations noted that Agricultural Development Programme (ADP) in Nigeria concentrated efforts on the progressive farmers who have more land, more education and usually involved in the marketing of their produce (www.fao.org/docrept/0060e/T006E03). The point of emphasis here is that different groups have peculiar characteristics which should be considered in targeting beneficiaries in the development process. All the development programmes and approaches have a common objective, which is the improvement of the lives of the rural people. But given the predominance of agriculture in the rural economy, more emphasis is always placed on social groups with agricultural concern (Asiabaka, 2002a; Ekong, 2010; and Mgbada, 2010). Any activity that succeeds in increasing the take home income of the farmer positively impacts on rural development.

Rural groups are very influential in community development activities. They contribute money for projects, contribute labour for self-help projects and are a good channel of communication on development messages and information. Igbozuruike (1977) and Okpara (1990) cited in Mgbada (2010), observed that rural social groups are the engine room in many community self-help projects such as rehabilitation of roads, construction of roads and bridges, building of town halls, hospitals etc. According to FAO (2015), development facilitators should use rural social groups in prosecuting development projects by;

1. Identifying the types of groups in the area or locality'
2. What joint activities are undertaken by group members of each group and
3. The interest of each group and
4. Whether any of the groups could form the basis of a development group
(www.fao.org/docrept/0060e/T006E03). .

These activities are important in the policy stage of developing a rural development model, where the players in the process are identified and their wants assessed (Mgbada, 2010).

2.1.10 Roles of agricultural extension in developing positive response of rural households to development programmes

Extension is a dynamic concept in the sense that its interpretation is always changing in development literature. Extension, therefore, is not a term which can be precisely defined, but one which describes a continual and changing process in rural areas. According to FAO (2015), extension services are a common feature of the administrative structure of rural areas and these services have the responsibility, in partnership with the farmers, of directing programmes and projects for change. Thus, Mgbada (2010), defined agricultural extension as an informal educational system which assists rural people in improving farm methods and techniques and other agro-based occupations, increasing production and service efficiency, income, and improving the socio-economic and educational levels of the rural dwellers. This definition of agricultural extension as a system implies that the extension practice has provision for a direct and continuous link to a critical mass of new technology with capacity for procuring, processing, adapting and disseminating agricultural research information directly to farmers through an identifiable organizational structure and separate extension strategies (Ogunsumi and Abegunde, 2011). Practices that fall short of the above criteria are

treated as agricultural extension strategies, which are interim measures to correct specific deficiencies in an existing extension system.

Agricultural extension is an applied behavioural science which is applied to bring about desirable changes in the behavioural complex of farming community. It brings about changes through education and communication in farmers' attitude, knowledge and skills, which invariably leads to rural development. Available technologies and research results require human element for application and effects. Agricultural extension improves the human element through educational processes to enhance its capacity to utilize scientific results. During this process the behavior, skills and attitude of the individual member of the society are developed to make them function effectively within the environment (Mgbada, 2010).

In Nigeria, the Agricultural Development Programme (ADP) is the major public provider of extension services. Agricultural extension serves as a bridge between the rural farmers and research institutes, Universities, Ministries of agriculture, development intervention agencies and Non-governmental Organizations (NGOs). According to FAO (2015) all rural extension works take place within the process of development, which is a type of intervention initiated to influence the entire processes of social change. Agricultural extension provides services to farmers and other stakeholders in agricultural ventures. According to Ogunsumi and Abegunde (2011) the structure of the service can be regarded as two-fold; qualitative and quantitative. The qualitative extension service is in the form of advisory services to farmers and quantitative service takes the form of input delivery. Agricultural extension is a key player in rural transformation including agricultural change which constitutes one of the most intractable aspects of economic development. The agricultural extensionist is the servant of the rural farmers and rural dwellers and therefore has the responsibility to fulfill the needs of

the people in its area. One measure of effectiveness of agricultural extension is to see how well policies and plans have been carried out and the extent to which incomes and living standards of the rural people have increased as a result of extension work. Mijindadi (1989) in Sani et al., (2013) states that extension organizations have the responsibility to assist rural farmers to learn about and take advantage of new opportunities that can increase their social and living standard. This means that the extension service has to equip the rural poor through educational procedure to seize opportunities in poverty intervention programmes to increase their production efficiency and income and bettering their standard of living. It is a necessary instrument, which is helpful in developing agro-related enterprises that promote productivity and generate income that can ultimately reduce poverty.

2.1.11 Factors influencing Response capacity and Participation

In a study on the determinants of participation and response effort in a Web panel, Elisabeth and Utpal (2010), identified some factors that characterise panel members' motivations need. Web panels are used to track various measures such as; health, social and economic behaviours over time. These factors are; self-esteem, behavioural process and knowledge.

A. Households' self esteem

Reflects an overall subjective emotional evaluation of his or her own worth. It is a judgement of oneself and attitude towards the self. Self esteem encompasses beliefs about one's level of competency and emotion such as pride, despair and shame (Smith and Mackie, 2007). Farmer's self esteem is an attractive attribute of socio-psychological construct because it has conceptualized as influential predictor of certain outcome such as achievements in many aspects of life, happiness, satisfaction in marriages and relations as well as social

membership (Smith and Mackie, 2007). Theories of self esteem suggested that self esteem is a basic human need or motivation. It maintains that self esteem evolved to check one's level of status and acceptance in once social group. Its importance is on the sense of our personal value and affects the way we acts and relates to others or even event. Self esteem affects one's reaction to stimulus in various ways. Actions are stimuli based, as individual reacts to stimulus base on his or her self esteem. Poverty intervention programmes are group-based and self esteem is an important factor that determines the role an individual plays in a group. The behaviours arising from such high self esteem can improve response to intervention programme.

B. Behavioural process

According to Brown and Ryan (2003), behavioural processes are processes of psychological and physiological processes, which construe human behavior as an active version of verbal and mental processes. The process is described as a 'half way hour' between mental and material process. It implies that the meanings they realized are midway between materials on one hand and mental on the other. They are in part about action that has to be experienced by the conscious being. Behavioural processes displayed by households must be coherent given that they are ancillary to improvement in livelihood activities. During group activities, farmers interact by talking, engage in discussions, and bring out opinions and ideas which may be consented to or disagreed with and finally taking action.

The process is linked to the state of mindfulness of the individual. Mindfulness is defined as the individual's mental state of being attentive to and aware of what is taking place in the present (Brown and Ryan, 2003). The awareness process monitors the person's inner and outer environment whereas attention is a process of focusing, conscious awareness, providing

a heightened sensitivity to a limited range of experience. It is expected to be less useful in the individual's decision to join or participate in a project. This is because awareness provides the individual access to the stimulus (development intervention), but does not provide or heighten accessibility of a particular reason for wanting to respond.

However, once the individual has decided to participate it is expected that mindfulness will be significant. Respondents who are high in mindfulness are more likely to be able and willing to focus and perform the cognitive work necessary to provide more in-depth responses (Langer, Black and Chanowitz, 1978). These elements reflected in the behavioural process are expected to affect the level of response capacity to rural intervention programmes.

C. Effects of knowledge on responses to development interventions

Knowledge is an abstract concept, which cannot be seen but we can observe its effects. Sveiby (1997), defines knowledge as a capacity to act. It is the creation, absorption and diffusion of information and expertise towards effective development solution. Knowledge of the people greatly affects the safety, effectiveness, comfort and satisfaction with which the goals of an individual or an organization are formulated and attained (Hunt, 2003). It is commonly accepted that people behave in accordance with their knowledge level. The more certain the knowledge or belief, then the more likely, more rapid and more reliable is the response.

Knowledge provides an orderliness to our lives which allows us to conceptualize goals, to anticipate and perceive events, and to respond in accordance with the changing needs, purposes and desires. To be useful to a person, the knowledge must not only be acquired, but also retained or remembered and put into practice.

Knowledge in this study is assumed to be an important attribute that influences the person's behavioural potential towards development initiatives. Since knowledge, in itself cannot be directly observed, it must be inferred from observing performance on statements designed for its determination.

2.2 Theoretical Framework

Response is one of the basic concepts in behaviour theory. Contemporary theorists accept the existence of two types of response, namely; Pavlovian conditioning procedure and Operant conditioning procedure. However, the human behaviour theoretical models to describe the Stimulus – Response situation (in which every social act is seen as a response to the preceding act of another individual) adapted in this study are:

- i. Reinforcement theory
- ii. Theory of Planned Behaviour

2.2.1 Reinforcement theory

Reinforcement theory proposes that social behaviour is governed by external events outside the human psyche. The basic premise is that people will more likely perform a specific behaviour if it is followed by the occurrence of something pleasurable or by the removal of something aversive. Additionally, the opposite premise is also included in the theory, but tends not to have as strong impact on behaviour. In other words, people will less likely perform a specific behaviour if it is followed by something aversive or removal of something pleasurable. It is therefore, eluded from the foregoing that rural households who benefited from previous development interventions have more likelihood to respond to future programmes.

One of the benefits of this approach to understanding human behaviour is that the events are external and observable as compared with cognitive theory of human behaviour (Michener and Delamater, 1999). The external events that play a role in the theory are referred to as the stimuli. They include any event that leads to an alteration or change in behaviour. The change in behaviour induced by a stimulus is a response.

The study of Reinforcement theory has produced effects of different schedules such as; continues, fixed ratio, fixed interval, variable ratio and variable interval. The schedules as the reinforce, could be likened to the various development interventions in Nigeria which are serially introduced to the citizenry. According to Wiki (2014), the reinforcer is always presented at various predetermined, determined and undetermined sequences of time.

Blythe (2000) demonstrated Reinforcement or operant conditioning as shown in Fig. 2.1 below.

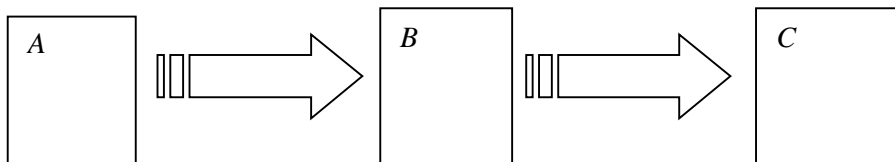


Figure 1: Operant conditioning

Source: Adapted from Egan, 2007.

A is the antecedent (or prior) stimuli, B is organism's behaviour and C is the consequences or outcomes. The colons indicate that A does not automatically lead to B but is however, likely to do so. This is denoted by the truncated arrow that draw colon A top B and then to C.

According to Egan (2007), in commercial terms, organizational reinforcement is created by stressing the benefits and/or rewards that the clientele will receive for patronage.

The Reinforcement theory has some limitations. First, it portrays individuals as primarily reacting to environmental stimulus rather than as initiating behaviour based on imaginative or creative thought. It down plays the role of cognition and influence of other motivators in explaining human behaviour. Secondly, it cannot explain selfless behaviour and altruism, instances where the individual acts to their own detriments in order to help another.

2.2.2 Theory of planned Behaviour

The Theory of Planned behaviour (TPB) represents a model developed by social psychologists which has been widely applied to understanding of variety of behaviours (Armitage and Conner, 2001).The TPB outlines factors that determine an individual's decision to follow a particular behaviour. This theory is itself an extension of the widely applied theory of reasoned action (Ajzen and Fishbein, 1980). It proposes that the proximal determinants of behaviour are intention to engage in that behaviour and perceptions of control over that behaviour. Intention represents a person's motivation in the sense of his or her conscious plan or decision to exert effort to perform the behaviour. Perceived behavioural control is a person's expectancy that performance of the behaviour is within his or her control. Control is seen as a continuum with easily executed behaviours at one end and behavioural goals demanding resources, opportunities and specialized skills at the other.

According to Conner and Norman (2005), intention is determined by three sets of factors; attitudes (which are the overall evaluations of the behaviour by the individual), subjective norms (which consist of a person's beliefs about whether significant others think he or she

should engage in the behaviour) and perceived behavioural control (which is the individual's perception of the extent to which performance of the behaviour is easy or difficult). Each of the attitude, subjective norm and perceived behavioural control components is also held to have prior determinants. Attitudes are a function of beliefs about the perceived consequences of the behaviour based upon two perceptions, namely; the likelihood of an outcome occurring as a result of performing the behaviour and the evaluation of that outcome.

Judgements of perceived behavioural control are influenced by beliefs concerning whether one has access to the necessary resources and opportunities to perform the behaviour successfully weighted by the perceived power of each factor to facilitate or inhibit the execution of the behaviour. According to Egan (2007), these factors include both internal control factors (attitude, perceptions, knowledge and capacity for memory and skills) and external factors (opportunities, race, religion and culture and dependence on others).

2.3 Conceptual Framework

The framework is based on Huitt and Hummel (1999) study on Behavioural learning Theory. They proposed that when there is a stimulus, the organism undergoes a mental process, which is unobservable but plays out as overt behaviour. This overt behaviour is the response which could be desired or undesired. Desired response could lead to the participation process while the undesirable response results to non-participation. Approaching response through this behavioural theory makes for a systematic way of understanding and improving the participation process in rural development intervention programmes. However, this is not to say that all rural households who exhibited desired response would participate in the rural poverty intervention programmes rather the framework suggests important features among

households, which should be understood in reaching out to target beneficiaries of rural poverty intervention programmes.

In the schema shown in fig. 2, the independent variables were factors that could influence the household positive response to rural poverty intervention programmes. They included; the socioeconomic variables, extension effectiveness, self esteem, distance of the households' residence to the local government area's headquarters and sources of information of the poverty intervention programmes to the households which are unique to the individual households and institutional factors. These variables were considered as exogenous to response capacity of the households, as they would condition the individual rural household to react in different ways, a predisposition or inclination to respond to the qualifying conditions set for participation in the rural intervention programmes.

This framework recognised that the individual household responses were influenced by his/her behavioural processes in their respective interactions in the Economic Interest Groups (EIGs). From this scenario, a classification could be made among the rural households according to their responses to rural poverty intervention programmes into; non response, undesirable response and desirable response. Desirable response is expected to lead to participation subject to some constraints such as lack of awareness, lack of access to credit and stringent requirements to qualify for participation. These constraints must be addressed to enhance positive response to rural poverty intervention programmes.

Positive response to stimuli of such a social phenomena is exhibited when the individual takes actions that would qualify him to benefit from the development programme. These actions are outlined as eligibility criteria such as:

1. Awareness of the intervention
2. Involvement in the baseline survey activities by the designated programme sponsors,
3. Formation of economic interest groups (EIGs),
4. Registration of such EIGs with the Ministry of Cooperative and Commerce and
5. Opening of current bank Account.

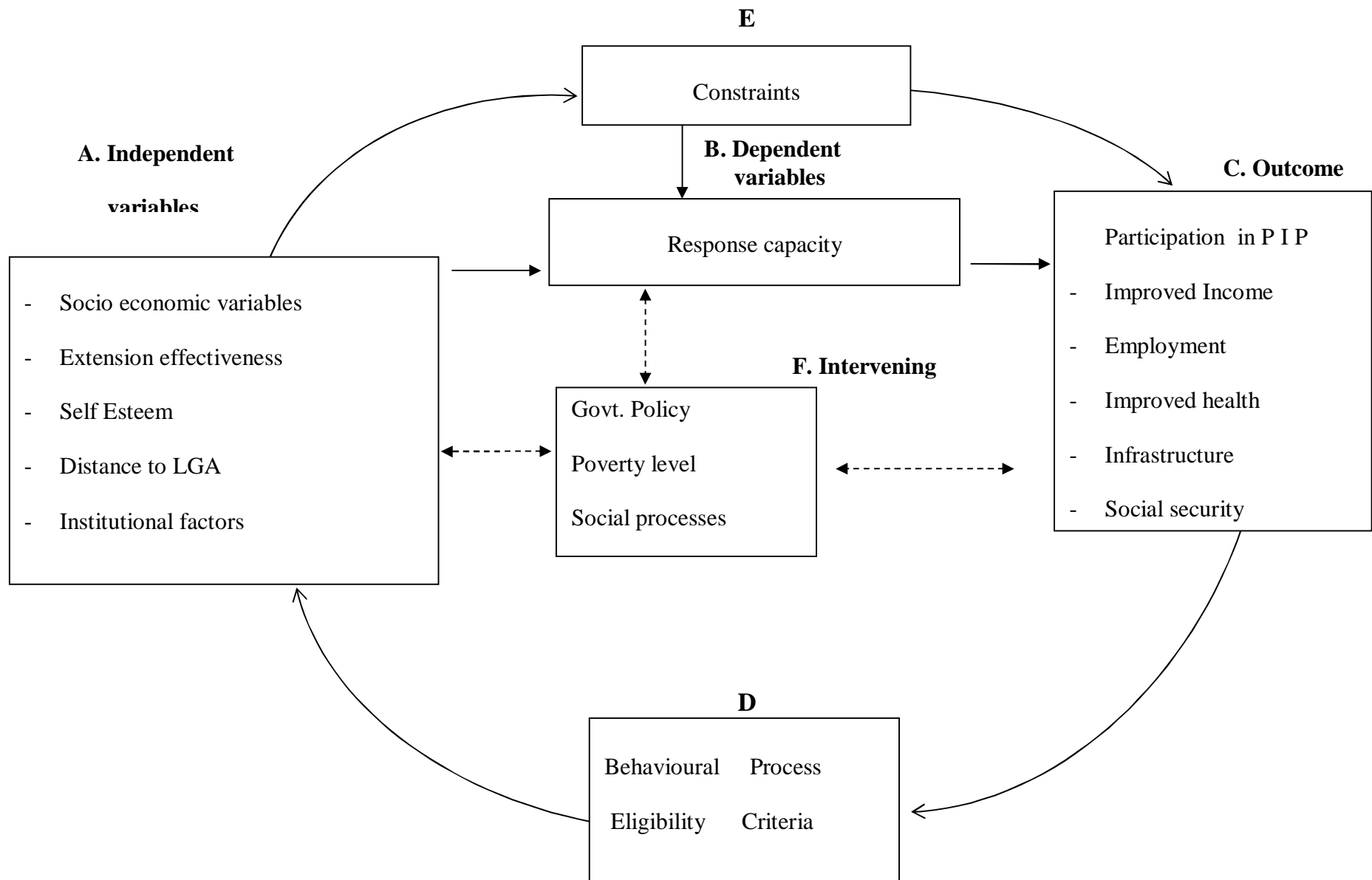


Fig 2: Behavioural Conditions in rural Household Response to Poverty Intervention Programme
Adapted from Egan, 2007; Huitt and Hummel 1999 and modified by the researcher

The framework also proposes that the individual target beneficiary is subjected to factors, some of which are his personal attributes, others are exogenous or outside his control and some endogenous which he could manipulate to achieve his needs. According to Agbamu (2006), the exogenous factors emanate from outside his social system such as; past trainings, involvement in message treatment and incentives previously enjoyed. The endogenous factors are within his social system, which may influence his decision or performance such as leadership pattern in the community. The identification of these factors will improve responses of target beneficiaries to development programmes.

The Eligibility criteria start with creation of Awareness through advocacy and attention has to be gained. The information gained are interpreted and stored in the memory so as to enforce and enhance existing attitudes and behaviour (Egan, 2007; Foxall et al., 1998).

CHAPTER THREE

METHODOLOGY

3.1 Area of Study

The study was conducted in Imo State. It is one of the southeastern states that benefitted from the second phase of National Fadama Development Programme (NFDP) and National Special Programme for Food Security (NSPFS). Imo State is located in the Southern Rainforest Agro ecological zone of Nigeria. The state lies within latitudes 4°45'N and 7°15'N, and longitude 6°50'E and 7°25'E North of the equator (NGEX, 2013). It is bordered on the East by Abia state, on the West by Rivers State, Anambra state in the North and also Rivers State to the South.

The climatic condition of Imo state is tropical with maximum and minimum temperatures of about 34°C and 18°C respectively. The average annual rainfall of the area is between 1150mm and 2000mm, which have bimodal peaks in June/July and September/October. The area has two distinct seasons; the dry season and the rainy season. The dry season lasts between November and March, while the rainy lasts between April and October. There is a dry, cold and dusty wind period known as harmattan, which is often experienced within December - January (which is equally the driest and coldest months) (IMADP, 1988 cited in Enyia, 2016). The hottest months are between January and March.

Imo River is one of the prominent rivers in the State from where the state derived its name, which created a natural boundary in the East with Abia State. Other important rivers washing the plains of the state include Ogochie, Oramiri-Ukwa, Otamiri, Urashi, Njaba River and Oguta Lake. Other streams provide enormous lowlands and basins for fadama development. The State has an estimated flood plain area of about 344,565 ha and potential fadama area of about 35,552 ha representing approximately ten (10%) percent of the identified flood plain area. The soil is well drained, sandy-loam and fertile.

It has a land mass of 5100.1square kilometers (about 510,010ha) and population of 3,934,899 people and farming families' population estimated at 303,333 (NPC, 2006). Its favourable agricultural potentials are being limited by population pressure and land degradation occasioning water erosion.

Imo State has twenty seven (27) government Areas (LGAs) and is divided into three Agricultural zones namely; Owerri (with 198,706 farming families), Okigwe (with about 89,471 farming families) and Orlu (with about 105,156 farming families). However, only ten (10) LGAs participated in the fadama II project namely; Owerri-North, Mbaitoli, Orlu, Oguta, Ihitte Uboma, Ohaji, Egbema, Obowo, Okigwe and Nkwerre. The State's agricultural structure is dominated by the smallholder sector, which employs great majority of the rural population, although other non-farm activities like civil service employment, artisans and trading also exist among the residents. Imo State's rich agricultural landscape supports the production of diverse plantation and food crops such as oil-palm, rubber, cassava, yam, cocoyam, plantain, banana, maize, melon and a variety of vegetables. Livestock and aquaculture/fish farming are also practiced in the state. The animals reared include poultry, goat, sheep, pig, snail and grass cutter.

3.2 Study population

The population for this study was the 33,333 farm households in Imo state (Imo ADP, 1988 cited in Enyia, 2016). These include rural household-beneficiaries of NFDP, NSPFS and non-beneficiaries in Imo State, Nigeria.

3.3 Sample and Sampling Technique

The study was conducted in the rural local government areas of the state, whose population's economic activities are agricultural based (Obasanjo and Mabogunje, 1991 in Nnadi and Amaechi, 2004). Twenty (20) LGAs out of the twenty seven (27) LGAs that make up the State have participated in either the NFDP (Fadama II and Fadama III) or NSPFS or both. The local government areas are; Owerri-North, Owerri-West, Ahiazu Mbaise, Aboh Mbaise, Ngor-Okpala, Mbaitoli and Ohaji/Egbema in Owerri Agricultural zone; Nkwere, Oguta, Oru East, Oru West, Orsu, Isu and Njaba in Orlu Agricultural zone and Okigwe, Onu-Imo, Isiala Mbano, Ehime Mbano, Obowo and Ihitte Uboma in Okigwe Agricultural zone of the Imo Agricultural Development Programme classification.

A multi stage sampling techniques was adopted in this study. The choice of multi-stage sampling techniques was to ensure the coverage of the entire state with the need to minimize the risk of sampling bias and drawing inferences from the sample about the population from which the sample was drawn, with levels of confidence that can be estimated statistically (Eboh, 1998).

Table 3.1: Multistage sampling procedure

Agricultural zones	30% participating LGAs	Fadama Community Associations (FCAs) (30%)	Economic Interest Groups (EIGs) (30%)	Participating households (4 households/EIG)	Non-participating households	Total sample size
Owerri	Owerri-North	Obibi-ezena	5	20	20	40
		Emekuku	5	20	20	40
	Ngor okpala	Obiangwu	5	20	20	40
		Umuekwune	5	20	20	40
Orlu	Nkwerre	Amaise	5	20	20	40
		Ndinkwerre	5	20	20	40
	Oguta	Akabor	3	12	12	24
		Agwa	3	12	12	24
Okigwe	Onuimo	Okwelle	3	12	12	24
		Umuduru/Egbeaguru	3	12	12	24
	Ihitte-Uboma	Ikperere	5	20	20	40
		Onicha Uboma	3	12	12	24
Grand total			50	200	200	400

Source: Field survey data, 2016.

Table 3.1 shows the different stages involved in selecting rural households for the study. In the first stage, 30% proportion of participating local government areas in poverty intervention programmes from each zone was randomly selected to ensure equal representation for the study. This was due to the unequal representation of the participating LGAs in the Poverty intervention programme. A total of six (6) LGAs were drawn from the three (3) agricultural zones in the state. Two (2) LGAs from Owerri zone, two (2) LGAs from Okigwe zone and two (2) LGAs from Orlu zone. The study used Nkwerre and Oguta from Orlu zone, Onu Imo

and Ihitte Uboma from Okigwe zone while Owerri North and Ngor-Okpala were drawn from Owerri Agricultural Zone of the state. The State Fadama Development Office (SFDO) and Imo State Agricultural Development Programme (IMADP) were the sources of information and lists of participating LGAs, FCAs and Cooperative Societies in the two interventions in this study.

The second stage involved a random selection of two (2) Fadama Community Associations (FCAs) in each LGA. This resulted in twelve (12) FCAs. The FCAs included; Obiangwu and Umuekwune for Ngor-okpala LGA, Emekuku and Obibi-Ezena for Owerri-North LGA, Umuduru/Egbeaguru and Okwelle for Onu-Imo LGA. Others were Onicha uboma and Ikperejere for Ihitte Uboma LGA, Ndinkwerre and Amaise for Nkwerre LGA and Agwa and Akabor for Oguta LGA. The Economic Interest Groups (EIGs) were known as FUGs and grouped into FCAs in NFDLP, while under the NSPFS, the EIGs (Farmers' Cooperative societies) were treated as independent groups on registration in the programme. The FCAs in the LGAs do not have equal number of Economic Interest Groups (EIGs) or Fadama User Groups (FUGs) participating in NFDLP and farmers' Cooperative involved in NSPFS.

Therefore in the third stage a proportionate sample of 30% of the EIGs in the communities were drawn to ensure equal representation of the EIGs. This resulted in fifty (50) EIGs in either NFDLP or NSPFS or both programmes. In the final stage, four (4) members in each of the EIGs were randomly selected from their list of membership, which totaled to two hundred (200) rural farmers from the 50 EIGs for the study. In order to study uniform number of parallel rural households, 200 non participants in NFDLP and NSPFS interventions were drawn randomly from the same communities where the FCAs and Farmers' Cooperative societies were selected, bringing the total sample size to four hundred (400) households.

However, the study found a total of 392 responses from rural households comprising both participating and non participating farmers useful for the study and was subjected to data analysis.

3.4 Research Instrument

The study employed two major instruments to obtain data from the field. These are:

- i. Interview schedules and
- ii. Field observations.

Relevant primary data of the farming households were collected with structured and validated questionnaire. The questionnaire was the major research instrument used in this study. It is an appropriate instrument in social survey when information on attitude and behavior are required (Awolola, 2004). The questionnaire was complemented by field observations and interview schedules.

The questionnaire was structured into sections A – G:

Section A dealt on the socioeconomic characteristics of the rural households; Section B, on the rural households' awareness of rural poverty intervention programmes (NFDP and NSPFS); section C dealt on the households' response to rural poverty intervention programmes; section D, rural households' behavioural processes; section E, rural households' self esteem; section F, agricultural extension effectiveness and section G dealt on the constraints responsible for the households' level of response to the rural intervention programme.

3.5 Standardization of Research Instrument

The research instrument was standardized, which assisted in controlling errors. A standard measuring scale is one that is satisfactory, valid and reliable. The need for Standardization is to have a standard reference with which further measurement is compared. The procedure was adopted to enable the researcher establish the validity and reliability of research instrument.

3.5.1 Estimating Validity of research instrument

Validity of an instrument refers to the degree to which an instrument measures what it is intended to measure. It ensures that the instrument gives a true measurement, description and explanation of what is being studied. Thus, independent scholars and development studies professionals on the subject including the project supervisors were consulted for content and face validity to assess the questionnaire for adequate coverage of the research objectives and their inputs were adjudged to be valid and relevant to the objectives of the study.

3.5.2 Estimating reliability of research instrument

Reliability test makes possible the replication of a research to check for errors in observation and measurement. It refers to the degree of consistency with which an instrument measures whatever it is measuring. According to Haralambos and Holbom (2008), once reliability of the data has been obtained, generalization can be made about the behavior observed. Most variables in the social sciences are not quantifiable as in natural sciences; however, they are operationalised to make them amenable to statistical application. Reliability in this study was ensured through a test-re-test method with the questionnaire administered on thirty (30) randomly selected respondents at the first time and an interval of two weeks was allowed, the same instrument was administered to the same respondents. The Spearman's Rank-Order

Correlation coefficient (r) 0.92 was obtained to determine the association between the two cases. The correlation coefficient value r, adjudged to be high indicated that the research instrument was reliable.

3.6 Sources of Data collection

Two main sources of data were used in this study namely: primary and secondary sources. Secondary data are information gathered for the purpose other than the immediate or first application (Voss, Tordella and Brown, 1987). In this study, previous studies related to the study, administrative records and reports of the Imo ADP-SFPO (State Fadama Development Office of Imo Agricultural Development Programme) provided the secondary data.

The field survey technique was used to collect the primary data with the aid of a structured questionnaire. These techniques guided the researcher in interpreting the results of analyses. The questions in the questionnaire were structured to elicit information from the respondents based on the objectives and hypotheses of the study. Primary data were collected on variables such as; age, sex, marital status, level of education, household size, membership of social organization, major occupation, farming experience, type of agricultural enterprise, distance to the local government headquarters from the household and farm size.

3.7 Measurement of variables

Measurement is the assignment of numerals to the properties of attributes of objects or events according to rules (Kothari, 2012). It includes the assignment of symbols to observations, the assignment of quantitative or qualitative values to attributes and the assignment of numerals to either quantitative or qualitative response categories. Measurement should be appropriate

to fulfill the research objectives. In this study, variables contained in the specific objectives were measured as follows:

Objective 1: To examine the socio-economic characteristics of the respondents

The following variables were measured:

1. **Age:** Age of the farming household member was measured in years
2. **Sex:** this variable was measured as a dummy variable; male was assigned one (1) and female zero (0).
3. **Household size:** This was measured numerically by the number of people in the respondent's house and under the same catering arrangement (Omotesho et al., 2006).
4. **Level of Education:** This was measured by assigning nominal values to the various levels of education where Non-formal education = 1, Primary education =2, Secondary education = 3, and Tertiary education = 4.
5. **Main Occupation:** This was nominally measured by assigning numerical values to various livelihood activities as follows; Farming = 1, civil service = 2, Artisan = 3, Retiree/Pensioner = 4, Business = 5, Politician = 6 and Unemployed = 7.
6. **Marital status:** Marital status was measured as a dummy, single was assigned 1, otherwise zero (0).
7. **Membership of social organization:** This was measured as a dummy, where membership was assigned one (1) and non membership was assigned zero (0).

- 8. Numbers of social organizations belonged:** A list of social organizations (social clubs, Religious organisations, Cooperatives and Age grade) was presented to the respondents and were required to indicate the number of organizations they belonged to, which ranged from one to four and were used for analysis.
- 9. Experience in farming:** This was measured by the number of years the respondent has been in farming.
- 10. Net annual farm Income:** This was in measured in Naira.
- 11. Links with agricultural institutions:** This was measured nominally by assigning numbers to the agricultural institutions that the household has contacted such as; Agricultural extension service = 1, Veterinary service = 2, Research institutions = 3, Input suppliers = 4, Labour supply service = 5 and No linkage with any institution was assigned 6.
- 12. Households' self-esteem:** Farmers self esteem was operationalized from their response to statements on self assessment of social events around them. The statements were rated as a dummy as follows; 'yes' response was assigned One (1) and zero (0) otherwise. The actual score obtained by each respondent was used as a measure of his/her self-esteem. These statements included:
- i. Whether the individual likes joint ownership of resources such as physical assets
 - ii. Whether the individual likes participating in government farm input distribution
 - iii. Whether the individual likes attending free-medical examination by an organisation
 - iv. Whether the individual likes subsidies, aids, grants on fertilizer and other farm inputs

- v. Whether the individual cared about what people say about him/her as relating to the association with any government intervention programmes in the area.

13. Distance from the households' residence to the LGA headquarters: The estimated distance from the rural households' residence to the LGA headquarters was measured by the actual number of poles or any nearest benchmark from the farmer's home to the LGA headquarters of the area. This was converted to kilometres and used for analysis.

In Objective 2: identify sources of information on NFDP and NSPFS rural poverty intervention programmes available to the rural households. The respondents were presented with various sources of information on NFDP and NSPFS rural poverty intervention programmes obtained from literature. They were nominally measured by assigning numbers to the different sources of information as follows; Friends/Neighbours/Relatives = 1, Fellow farmers = 2, IMADP Extension agents = 3, Radio = 4, Television = 5 and Others = 6.

In Objective 3: To describe the knowledge level of rural households to NFDP and NSPFS poverty intervention programmes in the area.

The major variable of interest in this specific objective was the knowledge level of rural households to NDFP and NSPFS rural poverty intervention programmes. According to Oruche (2011) knowledge determines what an individual makes of rural poverty intervention programmes at the point of introduction. It could be measured by the binary response of whether or not the respondent had the knowledge of programme activities. Two major programmes that were considered in this study were NFDP and National Special Programme

on Food Security (NSPFS). The objectives of these programmes that overlapped as well as other information about the formation of the selected programmes formed the major statements, which the respondents were subjected to in order to obtain the knowledge score.

They are;

- i. Whether the rural farmers knew that the selected programmes are rural poverty intervention programmes,
- ii. If the farmers knew that group participation rather than individual participation is very important to benefiting from the selected rural poverty intervention programmes in the area,
- iii. Whether the farmers knew of the counterpart funds from the government concerning the programmes,
- iv. Whether they knew that the programmes were government initiatives,
- v. If they knew that funding arrangement was between Federal Government, State, Local government and World Bank,
- vi. If they knew that the programmes have desk officers in each of the participating local government areas' headquarters,
- vii. If the rural households knew that participating in the programmes would increase their income and eliminate their poverty status,
- viii. Whether they knew that the programmes can provide them with rural infrastructure such as feeder roads, borehole water, rural electrification and market structures to rural communities,

- ix. If they knew that the programmes can provide the necessary training of farmers on improved and mechanized agriculture,
- x. If the rural households knew that the programmes can provide them with improved farm inputs at subsidized rates,
- xi. If they knew that the poverty intervention programmes can enable them in accessing of formal credits and
- xii. If they knew that the poverty intervention programmes can assist farmers in aquaculture and inland fishing as well as fish stock management.

The number of 'yes' answers to these options determined the knowledge score of an ith farmer in this study. Knowledge score was determined by summing the 'yes' responses from the number of statements presented to the respondents to which they responded 'yes' (1) or 'No' (0). A respondent's total knowledge score ranged between zero (0) and twelve (12). The minimum score attainable was zero while the maximum was twelve. The knowledge score was later categorized into three (3) levels of knowledge and rated as: No knowledge, Moderate knowledge and High knowledge. This followed a normal distribution partitions from the mean \pm standard deviation of the knowledge score.

In Objective 4: To analyse the relationship between rural households' behavioural processes and their response capacity to rural poverty intervention programmes in the area.

The rural households' behavioural processes were operationalized in this study using an ordinal scale (Akinbile, 2014). Behavioral process elements such as talks, smiles, hearing and

listening, consent/dissent, opinions, ideas and other actions are played out during interactive sessions (Halliday and Matthiessen, 2004). Behavioral processes are obvious in individuals and group interactions such as; in meetings, trainings, group formations and on-farm demonstrations. Group decision sessions and meetings related to achieving the requirements to participate in the rural intervention programmes where behavioral processes are pronounced include; awareness of the programmes, opening of current bank accounts, registration of the Economic Interest Groups (Farmers' Cooperative Societies) with the State and local government councils, contribution of funds or taking part in financial obligations towards the programmes. In each of these activities, individuals interact among themselves in developing positive tendencies towards improved livelihoods. The rural households' behavioral processes were expected to enhance their response capacity to poverty intervention programmes given that these variables must synergize to give a desirable response or otherwise.

The study identified five (5) activities which were common to NFDP and NSPFS such as information sourcing for the rural poverty intervention programmes by the households themselves, involvement in the baseline survey activities by the designated advocacy/agents, formation of economic interest groups (EIGs), contributions of funds and fulfilment of financial obligations, registration of such EIGs with the Ministry of Co-operatives and Commerce, opening of current account with commercial bank in the area and provision of needed resource for use in the programme, which were used as activity statements to measure behavioural process. The activities were progressively weighted as follows; attendance to group meeting = 1, engaging in the group discussion = 2, attentiveness = 3, contribution to ideas relevant to meeting the eligibility criteria = 4, giving consent = 5 and commitment of resources = 6. The product of the behavioural processes (6) and the programmes' eligibility

activities (5) was projected to a maximum score of 30 for a respondent that took part in all of the activities but 29 was the maximum score attained by the households in the study. The minimum score attained was zero (0) for the households that were not aware of the poverty intervention programmes. Hence, Behavioural process score (BP) ranged between zero (0) to twenty nine (29), which were used for analysis.

Objective 5: to categorize the response capacity of the rural households to NFDP and NSPFS rural poverty intervention programmes in the study area.

Response capacity was measured on an ordinal scale by assigning values to the eligibility criteria to show the order of importance of each stage reached by the respondents in the process. A household was scored one (1) for each of the eligibility activity he/her participated in. The rural households were reacting to these activities considered as stimuli to response. Hence, the activities approximated by moves to meet the eligibility criteria were used to operationalize the response capacity of farmers to rural poverty intervention programmes in the state.

The stage reached by an ith farmer was his/her response score to the rural poverty programme. The activities started from awareness to the point of current account opening.

The response processes are given as;

- i. Awareness of the rural poverty intervention programme,
- ii. Involvement in the baseline survey activities by the designated advocacy/agents,
- iii. Formation of economic interest groups (EIGs),
- iv. Registration of such EIGs with the ministry of co-operatives and Commerce and

- v. Opening of current account with commercial bank in the area.

If any respondent was not aware, it implies he/she did not respond to the programmes and was categorized as no response and the score is zero, but when he/she participated in all the activities, he/she was scored 5. The response scores therefore, ranged between 0 and 5 in this study.

The generated response score in this study was used to partition the rural households' response capacity into the three (3) categories; non-response, undesirable response and desirable response using the normal distribution model (Olowu and Oladeji, 2004). Huitt and Hummel (1999), noted that both non-response of zero score and undesirable response are likely going to lead to non-participation while a desirable score will tend towards participation to rural poverty intervention programmes.

Objective 7 - to examine the perception of rural households on extension effectiveness in positive response to NFDP and NSPFS rural poverty intervention programmes in the study area. To achieve this, respondents were asked to indicate their perceived effects of extension service with respect to their activities from the list of activities obtained from literature on a 3-point Likert-type scale of: 1 = Not effective; 2 = Effective and 3 = Very Effective. The activities listed included; dissemination of information on NFDP, dissemination of information on NSPFS, mobilizing and formation of farmers' cooperative societies, linking farmers to credit institutions, training farmers on improved farming technologies, input procurement and distribution, preparation of local development plan (LDP), farm visit for diagnostic surveys and facilitating the needs of the fadama User Groups (FUGs).

Following Agbo and Chidebelu (2010) the 3-point scale was graded as very effective = 3, effective = 2 and not effective = 1. The mean score of the respondents based on the 3-point

scale was $3 + 2 + 1 / 3 = 6/3 = 2.0$. Using the interval scale of 0.05, the upper limit cut-off point was $2.0 + 0.05 = 2.05$, the lower limit was $2.0 - 0.05 = 1.95$. On the basis of the two extreme limits, any score below 1.95 (ie $MS < 1.95$) was taken as not effective, those between 1.95 and 2.05 were considered as effective (ie $1.95 \leq MS \leq 2.05$), while any mean score that is greater than or equal to 2.05 (ie ≥ 2.05) was considered very effective.

These statement options that capture the extension effectiveness expected to improve farmers' response to rural poverty intervention programmes are:

- i. Whether there was a contact with agricultural extension agents on issues concerning the rural poverty intervention programmes,
- ii. If the rural households were informed of rural poverty intervention programme by the extension agents in the area,
- iii. If the households have been assisted by the extension agents in forming their economic interest group/co-operatives,
- iv. If the extension agents assisted the rural households in opening their current accounts for the programmes in the area,
- v. If the extension agents have assisted rural households in input acquisitions in the programmes and
- vi. If the extension agents have assisted the rural households in organizing any training on the improved agricultural techniques in the programmes.

Extension effectiveness was operationalized using a nominal scale of 'yes' or 'no' answers to some statements of extension agents' involvement that direct households' positive response

to rural poverty intervention programmes in the state. ‘Yes’ answer was scored one (1) and ‘no’ answer was scored zero ‘0’. The summation of the scores obtained by each farmer gave the Extension effectiveness score. The percentage extension effectiveness was measured as

$$\% \text{ EE} = \left\{ \frac{\text{Actual number of extension involvement}}{\text{Maximum number of Extension Involvement obtainable}} \right\} 100$$

Where;

EE = Extension Effectiveness measured in percentage

Rural households’ responses on extension effectiveness were categorized into three (3); not-effective, effective and very effective. The baseline for different level of effectiveness is obtained using a normal distribution theory as used by Olowu and Oladeji (2004), where the mean \pm standard deviation of the extension effectiveness index were employed to separate each level from the other. The bench mark of each level is explained by the deviation from the mean of the successive index.

3.8 Method of Data Analysis

The Statistical package for Social Science (SPSS) version 16 was used in analyzing the primary data obtained from the field survey in order to achieve the specific objectives of this study. Detailed descriptive statistical tools such as frequency distribution, percentage, mean scores were used to describe the data, which were presented in tables. The descriptive statistics were applied to objectives 1, 2, 3, 5, 7 and 8 while objective 4 was analyzed using inferential statistics of univariate analysis of simple regression model. Econometric tools such as multinomial logit regression analysis was used to analyze objective 6.

Objective 1: To describe the Socio-economic features of the rural households

Descriptive statistical tools such as mean, and relative frequency were used to analyze the socio-economic variables of the respondents. These include age, sex, household size, level of educational attainment, main occupation, marital status, membership of social organization, number of social organizations belonged, farmers' self esteem, linkage with agricultural institutions, distance of the respondents' home to the LGA headquarters, annual net income and farming experience.

Objective 2: To identify sources of information on NFDP and NSPFS rural poverty intervention programmes available to the rural households.

Descriptive statistical tools such as percentages and relative frequency were used to analyze the sources of information on NFDP and NSPFS available to the rural households.

Objective 3: To describe the level of knowledge of rural households of NFDP and NSPFS rural poverty intervention programmes in the area.

This objective was analysed using descriptive statistics. Knowledge level was categorized into three (3) based on the knowledge score generated. The categorization was based on the normal distribution model of the mean knowledge score \pm and their standard deviation (Olowu and Oladeji, 2004). The distribution showed the extent of skewedness of rural farmers' distribution based on their level of knowledge of NFDP and NSPFS rural poverty intervention programmes in the study area.

Objective 4: To analyse the relationship between rural households' behavioural process and their response capacity to NFDP and NSPFS rural poverty intervention programmes in the study area.

This objective was achieved using a univariate analysis; simple regression model. The analysis expressed the causal relationship between behavioural process and response capacity of rural households to poverty intervention programmes. The regression analysis is concerned with how one variable, which in this case is behavioural process affects changes in another variable (response capacity) (Kothari, 2012). The behavioural process is obtained from an ordered statement arrangement of behavioural elements across the eligibility criteria such as attendance to each of activities of eligibility criteria, matters arising and group discussions, showing mental alertness and interest, contribution to ideas, giving consent or otherwise and finally making commitment of resources.. The model is explicitly expressed as:

$$R_c = \beta_0 + \beta_1 B_p + \varepsilon$$

Where;

R_c = Response capacity

B_p = Behavioural process score

B₀ and β₁ were estimated with the econometric parameters from the simple linear regression analysis.

Objective 5: To categorise the response capacity of rural households to rural poverty intervention programmes in the study area.

This objective was achieved by analysing the generated data using simple ratio of response capacity index and descriptive statistics. Response score was the aggregate value obtained by each rural household in meeting the eligibility criteria of the programmes. The response score

varied between zero (0) and five (5). Thus, the actual response score of an i^{th} respondent is denoted as χ while the maximum obtainable response score is denoted as γ . Response capacity Index (RCI) is expressed thus,

$$RCI = \chi/\gamma \quad 0 \leq RC \leq 1$$

Where;

RCI = Response Capacity Index

χ = the i^{th} rural household's actual response score

γ = the maximum obtainable response score

Response scores obtained were grouped into non-response, undesirable response and desirable response following Huitt and Hummel (1999). The 3 categories were used for further analysis in the study. Descriptive statistics was used to describe the frequency distribution of rural households based on their response capacity category. The frequency of rural households who obtained the zero response capacity score were designated Non-Response (NR) capacity and the frequency of rural households that fell below the mean response capacity was described as Undesirable Response (UR) capacity while the frequency of rural households that fell within and above the mean response capacity were described as the Desirable Response (DR) group in this study.

Objective 6: To isolate the factors affecting the different response capacity of rural households to the rural poverty intervention programmes

This objective 6 was analyzed using an econometric model of multinomial logit regression estimation in order to isolate the factors that affect different categories of response capacity of the targeted rural households to rural poverty intervention programmes. The respondents were placed in three (3) categories of response capacity based on their behavioural process to any stimulus which is represented in this study by the rural poverty intervention programmes. Madalla (1983) and Crammer (1991) noted that multinomial logit model permits the analysis of decision across more than two categories called polychotomous choice models.

Allowing the determination of choice probabilities, which in this study applies to 3 different categories of response capacity to rural poverty intervention programmes is the reason for the choice of this multinomial logit regression analysis. It is an advancement over dichotomous choice models such as probit and logit that have been conventionally used. A respondent falls into a category of response capacity following his utility maximization based on his choice conditioned by his/her behavioural process towards the rural poverty intervention programmes' eligibility criteria.

Nkamleu and Coulibay (2000) opined that the 's' possible categories of response capacity ($s = 1, 2, \dots, s$ categories) are exclusive and exhaustive. In this analysis therefore, a three category of response groups ($s = 1, 2$ and 3) of non-response, undesirable and desirable response capacities were adopted. Multinomial logit models (MLM) do not treat these categories in any continuous order; it is different from ordered sequential logit/probit models. If there is a random sample of rural households with the given categories of response capacity to rural poverty intervention programmes, the multinomial logit assigns probabilities to events characterized as i^{th} household to s^{th} category. The vector of the characteristics of the respondent is denoted as "z". It is important therefore, to normalize one of the category as the

“reference category” upon which probability of choice of any other category could be made. According to Nkamleu and Coulibay (2000), multinomial logit model (MLM) for choice across the three (3) response categories is expressed as;

$$P(Y = s) = \frac{\ell^{\beta_i z_i}}{1 + \sum_{j=1}^3 \ell^{\beta_j z_j}} \text{ For when } s \text{ is not equal to } 1$$

$$P(Y = 1) = \frac{1}{1 + \sum_{j=1}^3 \ell^{\beta_j z_j}}$$

Where;

Z_i = The socio-economic characteristics of the respondents and features of rural poverty intervention programmes.

Z_1 = Respondent age was measured in years.

Z_2 = Sex (dummy; male = ‘1’ otherwise ‘0’)

Z_3 = Marital Status (Married = ‘1’ otherwise ‘0’)

Z_4 = Level of education

Z_5 = Household size

Z_6 = Number of social organizations belonged

Z_7 = Net annual farm returns (in Naira)

Z_8 = Farm experience measured in years

Z_9 = Percentage extension effectiveness to rural poverty intervention programmes.

Z_{10} = Individual household self esteem

Z_{11} = Information sources

Z_{12} = Distance (Km) of the household's residence to the LGA headquarters

β_i = the vector of estimated parameters estimated using LIMDEP (Greene, 1993).

Objective 7: examine the perception of rural households on the effectiveness of agricultural extension service to positive response to rural poverty intervention programmes.

The rural households in the study area were presented with statements related to extension service activities in the NFDP and NSPFS rural poverty intervention programmes to which they were asked to indicate their perceived effectiveness on a 3-point Likert-type scale of Very Effective, Effective and Not Effective were assigned weights of 3, 2 and 1 respectively. The perception scores generated ranged from 4 – 30, which were further analyzed and categorized into positive and negative perception.

Objective 8: Identify the constraints militating against positive responses to the rural poverty intervention programmes in the area.

In the questionnaire, list of possible constraints to positive response to rural poverty intervention programme were presented to the respondents. They were asked to indicate the level of perceived seriousness of each of the listed constraints on a 4-point Likert-type scale of: to a great extent = 4; to some extent = 3; to a little extent = 2 and to no extent = 1. These values were summed to obtain 10 (4+3+2+1) and divided by 4 to obtain a mean score of 2.5, which served as a discriminating index.

Decision rule: Constraints with mean score equal or greater than 2.5 were considered as possible constraint to positive response to rural poverty intervention programme. Since the problem of response are multifaceted and can overlap between institutional and socio-economic factors as well as behavioral factors, it is important to employ the use of multiple responses in this study to capture the overlapping factors that affect rural households' multiple responses to rural poverty intervention programmes in the state.

3.9 Test of the Study Hypotheses

1. The first null hypothesis which stated that there is no significant association between the farmers' socio-economic characteristics and response capacity to NDFP and NSPFS rural poverty intervention programmes.

This hypothesis was tested using the estimated chi square (χ^2) and log likelihood values arrived from the multinomial logit regression estimation. The same values were used to test the goodness of fit of the model while the individual Wald values were used to test the significance of the coefficients (β_i) of all included explanatory variables. Wald statistic is equivalent to t-value in SPSS result for Multinomial logit Model.

$$H_0: \beta_1 = \beta_2 = \beta_3 = \dots = \beta_{15} = 0 .$$

$$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \dots \neq \beta_{15} \neq 0$$

The null hypothesis was tested by comparing the parameter estimate of Wald statistic with the tabulated value at 5 percent level of significance. The null would be rejected if the Wald

value calculated is greater than the Wald value tabulated and accepted if otherwise at the appropriate level of significance. The overall significant influence of the independent variables on the dependent variable was done using log likelihood estimate. The null hypothesis will be accepted if the estimated log likelihood value is less than the log likelihood value tabulated at 5% level of significance.

The test of the second (H₀₂), third (H₀₃) and fourth (H₀₄) hypotheses were performed on Contingency tables in order to decide whether or not, effects or associations are present. According to Stockburger (1996), effects or associations in a contingency table are defined as relationships between the row and column variables that is, are the levels of the row variable differentially distributed over levels of the column variables? Significance in this hypothesis test means that interpretation of the cell frequencies is warranted. Non-significance means that any differences in cell frequencies could be explained by chance.

Hypothesis tests on contingency tables were based on a statistic called Chi-square (χ^2). Ajayi (2004), gave the basic formular of Chi square as:

$$\chi^2 = \sum \frac{(F_o - F_e)^2}{F_e}$$

Where:

F_o = observed frequency in a cell.

F_e = Expected frequency.

∑ = summation which is taken over all cells in the contingency table.

If the value of the observed chi-square statistic (χ^2) is less than the expected value, then the model of no effects cannot be rejected and the table is not significant. It can be said that no effects were discovered. In this case an interpretation of the cell frequencies is not required, because the values could have been obtained by chance alone (Stockburger, 1996).

The chi-square test of significance is useful as a tool to determine whether or not it is worth the researcher's effort to interpret a contingency table. A significant result of this test means that the cells of a contingency table should be interpreted. A non-significant test means that no effects were discovered and chance could explain the observed differences in the cells. In this case, an interpretation of the cell frequencies is not useful.

The degree of association between the two variables can be assessed by a number of coefficients: the simplest is the phi coefficient defined by Olowu & Oladeji (2004) as:

$$\phi = \sqrt{\frac{\chi^2}{N}}$$

where χ^2 is derived from Pearson's chi-squared test, and N is the grand total of observations. ϕ varies from 0 (corresponding to no association between the variables) to 1 or -1 (complete association or complete inverse association).

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter was presented and discussed in line with the specific objectives and hypotheses of the study, under the following sub-titles:

- 4.1 Socio-economic characteristics of the rural farmers;
- 4.2 Sources of information on NFDP and NSPFS rural poverty intervention programmes available to the rural households,
- 4.3 Level of knowledge of rural farmers on NFDP and NSPFS rural poverty intervention programmes;
- 4.4 Level of rural farmers' behavioural process and its effect on response capacity to NFDP and NSPFS rural poverty intervention programmes;
- 4.5 Response capacity of rural farmers to rural poverty intervention programmes;
- 4.6 Factors affecting rural farmers' response capacity to NFDP and NSPFS rural poverty intervention programmes;
- 4.7 Perception of rural households' agricultural extension service effectiveness on positive response to NFDP and NSPFS rural poverty intervention programmes;
- 4.8 Constraints militating against positive response to rural poverty intervention programmes and
- 4.9 Testing of study hypotheses.

4.1 Socio-economic characteristics of the rural households

The socio-economic characteristics of the rural households investigated included age, sex, household size, marital status, level of education, farming experience, major occupation, type of farming activities, net annual farm income, membership of social organization, linkage with agricultural institutions, sources of information and distance between rural the households' residence and the local government headquarters

4.1.1 Age

Table 4.1: Distribution of rural households by age

Age class	Frequency	Percentage (%)	Mean (\bar{X})
25 – 35	31	7.9	
36 – 45	92	23.5	
46 – 55	143	36.5	50.7 years
56 – 65	103	26.3	
66 – 75	23	5.9	
Total	392	100.0	

Source: Field survey data, 2016

Table 4.1 above shows that majority 36.5 percent of the rural households were between 46 – 55 years, 26.3 percent of them were between 56 – 65 years of age while 23.5 percent of them were between 36 – 45 years of age. About 8 percent of the rural households in the study area were between 25 – 35 years of age while 5.9 percent of the rural households were 66 years or

above. Their mean age was about 51.0 years. This result tallies with Nation Bureau of Statistics (NBS) (2007) finding of the National mean age of rural household heads of 51.0 years and that majority of the rural poor were in this category because they have more dependants. This age category is most likely predisposed to positive response to poverty intervention programmes since they are not yet impaired in sight or health and are very active in their various livelihood activities. According to Shuaibu et al. (2015), as one approaches this age category, he or she tends to realize the need to improve his/her social and economic needs and positive response capacity would be one of the means to achieve this need. Age is an important social element that affects involvement in social projects. It is associated with accumulation of skills, experience and accumulation of assets which enable one to diversify into more remunerative activities (Minot, Epprecht, Auh and Trung, 2006).

4.1.2 Sex

Table 4.2: Distribution of rural households by sex

Sex	Frequency	Percentage (%)
Male	227	57.9
Female	165	42.1
Total	392	100.0

Source: Field survey data, 2016

Table 4.2 reveals that majority (57.9%) of the respondents were male while 42.1 percent were female. This finding shows that both sexes are exposed to rural poverty intervention programmes without hindrances. This composition is plausible as gender dimensions to the response capacity would be taken care of. However, Ehirim et al., (2014) noted that though

both sexes participate in poverty eradication programmes yet poverty is more severe among female headed households. With their low educational status, lack of basic skills and general unemployment condition, the poverty status of rural women in the country is even worse (Umar, 2015). Although no sex class is immune to poverty, but people will respond to activities that will alleviate their poor status and economic enhancement.

4.1.3 Household size

Table 4.3: Distribution of rural households by household size

Household size	Frequency	Percentage (%)	Mean (\bar{X})
1 – 4	85	21.7	
5 – 8	257	65.5	6 persons
9 – 12	49	12.5	
13 – 16	1	0.3	
Total	392	100.0	

Source: Field survey data, 2016

Table 4.3 shows that majority (65.5%) of the households had household size of between 5 – 8 persons per household, 21.7 percent of the rural households in the study area had household size between 1 – 4 persons and 12.5 percent respondents had 9 – 12 persons. Only 0.3 percent of the respondents had more than 13 persons and above. The mean household size was 6 persons. This implies a relatively higher household size than the national average of 5 persons per household. This finding agrees with Demographic and Health Surveys (DHS)

Program (2016) suggestion that household size of more than 5 persons per household is slightly higher in rural areas than urban areas. However, large household size may provide enough persons for family labour and less money may be needed to pay hired labour (Oluwatayo and Adeboye, 2008 cited by Shuaibu et al., 2015). It might also imply high dependency ratio and greater responsibilities on the household head. According to Balogun et al., (2012), household heads with large households need to engage in more income generating activities as a means of household livelihood support hence, a positive response to poverty intervention programmes.

4.1.4 Marital status

Table 4.4: Distribution of rural households by marital status

Marital status	Frequency	Percentage (%)
Married	378	96.4
Single	14	3.6
Total	392	100.0

Source: Field survey data, 2016

Table 4.4 shows that majority (96.4%) of the respondents were married while 3.6 percent were single. The result indicates that majority of the respondent are charged with responsibilities to cater for the family in order to reduce poverty in the household. With a higher percentage of the respondents being married, their level of living is expected to be positively affected as the responsibility of maintaining the household requirement will be shared by both parties. Marriage is the official institution saddled with the responsibility of

procreation, which provides source of labour for the rural farming family. According to Salau, Onuk and Jacho (2015), married people are less likely to use hired labour for farm operations since family labour might be used. The implication of this finding is that majority of the respondents will have additional responsibilities to their spouses and children, which will motivate them to engage in economic activities especially by responding positively to available rural poverty intervention programmes to improve their socio-economic standings in the community.

4.1.5 Level of Education

Table 4.5: Distribution of rural households by level of education

Level of formal education	Frequency	Percentage (%)
No formal education	10	2.6
Primary education	71	18.1
Secondary education	169	43.1
Tertiary education	142	36.2
Total	392	100.0

Source: Field survey data, 2016

Table 4.5 indicates that majority (43.1%) of the rural households had secondary education, 36.2 percent tertiary education, while 18.1 percent had primary education. Only 2.6 percent had no formal education thus, about ninety-seven percent were literate. The result implies that majority of the rural households were literate, equipping them to be vibrant in searching for information concerning rural intervention programmes that would improve their

wellbeing such as NSPFS and NFDP. This result corroborates Ironkwe, Asiedu and Chinaka (2007) finding that education increases the ability of the farm families to understand, share and distribute information on new production techniques.

The level of education an individual attains approximates his/her acquired knowledge through formal training in an organized institution of learning. Education is generally thought to create a favourable mental attitude for the acceptance of new ideas and practices, which response to rural intervention programmes demands. It is also a means to galvanizing enterprising skills. According to Asiabaka, (2002b), education opens gateway to interact and share experiences with people and thereby motivates one to accept new ideas and activities brought to him or her by outsiders. High educational attainment of the rural households in the study area is important as it creates awareness to possible advantages of diversification of households' income, which positive response capacity would offer to target beneficiaries.

4.1.6 Farm experience

Table 4.6: Distribution of rural households by farming experience

Years of experience (Years)	Frequency	Percentage (%)	Mean (\bar{X})
2 – 12	144	36.7	
13 – 24	143	36.5	18.9 years
25 – 36	72	18.4	
37 – 48	22	5.6	
49 – 60	11	2.8	
Total	392	100	

Source: Field survey data, 2016

Table 4.6 shows that a greater proportion (36.7%) fell within 2 – 12 years of experience, followed by 36.5 percent within the 13 – 24 years of experience bracket. The mean years of experience of the rural farmers in the study area was 18.9 years. The number of years in farming reflects the level of skill and knowledge in farming activities. It is expected that the experience acquired would result into positive response to intervention that concern agriculture and related enterprises as contained in NFDP and NSPFS intervention programmes.

4.1.7 Major occupation

Table 4.7: Distribution of rural farmers by major occupation

Occupation	Frequency	Percentage (%)
Trading	65	16.5
Farming	170	43.4
Civil service	80	20.4
Artesian	34	8.7
Retiree/pension	33	8.4
Others	10	2.6
Total	392	100.0

Source: Field survey data, 2016

Table 4.7 reveals that the rural households were engaged in a wide range of livelihood activities in the rural areas. Majority (43.4%) were engaged in farming, 20.4 percent were civil servants, and 16.6 percent were engaged in trading. A total of 8.2 percent were artesian, 8.4 percent were retirees and only 2.6 percent indicated their engagement in other occupations like; driving, fashion and security. Farming dominated the economic activities of the people in the study area. This finding agrees with Omoregbee and Edeogbon (2006), in their study on diversification of livelihood among rural households that 90 percent of poor households relied on farming as a major source of income. According to NBS (2007),

agriculture has the highest poverty rate of any occupational group and Ehirim, Onyeneke, Chidiebere-Mark and Nnabuihe (2012) noted that poverty is a rural phenomenon therefore, poverty intervention programmes in the rural areas with farmers as the main target will not only help to increase their response to such interventions programmes but also align some productive economic activities for better livelihoods.

4.1.8 Types of agricultural enterprises

Table 4.8a: Distribution of rural households by type of agricultural enterprises

Type of agricultural Enterprises	Frequency*	Percentage (%)
Crop	339	86.5
Livestock	203	51.8
Fishery	37	9.4
Agro-forestry	32	8.2

***Multiple responses**

Source: Field survey data, 2016

Table 4.8b: Distribution of the rural households by Type of Crops grown

Type of crops	Frequency*	Percentage (%)
Cassava	315	92.9
Yam	104	26.5
Cocoyam	42	10.7
Cowpea	5	1.3
Plantain	81	20.7
Banana	64	16.3
Okro	55	14.0
Pumpkin	145	37.0
Amaranthus	7	1.8
Pepper	11	2.8
Water leaf	22	5.6
Garden egg	17	4.3
Cucumber	4	1.0
Melon	3	0.7
Pineapple	4	1.0

*Multiple responses

Source: Field survey data, 2016

Table 4.8a shows that majority (86.5%) of the respondents were engaged in crop production, 51.8 percent in livestock production, 9.4 percent in fishery and 8.2 percent in agro-forestry enterprise. The result of this analysis showed that crop and livestock enterprises were the major agricultural activities in the study area. This finding agrees with the findings of Tijani, Masuku and Raufu (2014) that beneficiaries of NFDP (Fadama farmers) generated more income from crop activities than any other activity in their study in Kogi and Kwara states of Nigeria.

The spread of agricultural enterprises could be a pointer to the interest of target beneficiaries in the projects packaged in the rural poverty intervention programme. The type of farm enterprises engaged by the farmers could affect the type of information sought from extension service and other sources, which invariably, could affect response capacity to rural poverty interventions. According to Mohammed et al., (2005), cited in Nxumalo and Oladele (2013) farmers' main sources of information vary with enterprise type.

The details of the spread of crop enterprise among the rural farming households were shown in Table 4.8b. It indicates that majority (92.9%) of the crop farmers were involved in cassava production, 30.7 percent in yam farming, and 42.8 percent were engaged in pumpkin production. Other crops which the households indicated to be producing included; plantain (20.7%), banana (16.3%), cocoyam (10.7%), okro (14.0%), water leaf (5.6%), garden egg (4.3%), pepper (2.8%), cowpea (1.3%), amaranthus (1.8%), cucumber (1.0%), pineapple (1.0%) and melon (0.7%). The finding agrees with NBS (2007), that cassava is the primary crop in southern Nigeria, with almost half or more of households reporting it as a primary crop. Cassava is the most important root crop produced in the study area. It is a major staple food crop intercropped with other crops. Intercropping is a preferred production system due

to the potential for improved profit margins from cultivation of multiple crops (Fonsah and Chidebelu, 2011). The number of crops grown by the farming households reflected their strategy towards food security at the family level.

4.1.9 Farm income

Table 4.9: Distribution of rural households by net annual farm income level

Net annual Farm income level	Mean (\bar{X})	
	Frequency	Percent (%)
< 82529.8	238	60.7
82529.9 – 165059.6	111	28.3
165059.7 – 247589.4	22	5.6
247589.5 – 330119.2	9	2.3
330119.3 – 412649.0	2	.5
412649.1 – 495178.8	5	1.2
495178.9 – 577708.6	1	.3
577708.7 – 660238.4	1	.3
660238.5 – 742768.2	2	.5
742768.3 – 826203.0	1	.3
Total	392	100.0

Source: Field survey data, 2016

Table 4.9 indicates that majority (60.7%) earn less than N82529.8 per annum from their farming operations, 28.3 percent has annual farm income between N82529.9 and N165059.6

and about 11 percent earn above N165059.6 per annum from farming activities. The mean net farm income (\bar{X}) was N97041.63 and majority (60.7%) of the households were below this income level. The result revealed that majority of the rural households earns less than the minimum wage approved by the Federal Government of Nigeria. This implies that they are not favorably disposed to compete with other people engaged in other sectors. The finding also shows the low social stratification of the study area, which characterizes rural settings (Nnadi and Amaechi, 2004). However, Ayoade and Adeola (2012) note that a household with access to subsistence resources may have a low cash income without a corresponding low standard of living, they are not living 'on' their cash income but using it as a 'top up'. The low level of income would catalyse them to seek avenues to improve income from their means of livelihood, which the poverty intervention programmes present. Thus, people in the low income category would make efforts to positively respond to the opportunities presented by the interventions.

4.1.10 Membership of social organizations

Table 4.10: Distribution of rural households by membership of social organizations

Membership status	Frequency	Percentage (%)
Member of social organizations	355	90.6
Non member of social organizations	37	9.4
Total	392	100.0

Source: Field survey data, 2016

Table 4.10 shows that majority (90.6%) of the rural farming households in the study belonged to social organizations and only 9.4 percent were not members of social organizations. This indicates a high level of social interaction by rural dwellers in the study area. Olajide and Oyeboade (2014) reiterated the need for belonging to social organizations by rural dwellers. This position is supported by Figueroa and Hulme (2008) who observed that an individual that participates in collective action can produce community-level outcomes that facilitate and enhance individual behaviour. The enhancement of the individual's behaviour will facilitate his action to positively respond to rural poverty intervention programmes, which is desired for improved standard of living.

4.1.11 Type of social organizations

Table 4.11a: Distribution of rural households by type of social organizations

Type of social organizations	Frequency*	Percentage (%)
Social club	36	9.2
Religious groups	161	41.7
Cooperative societies	256	65.3
Age grade	59	15.5

*Multiple responses

Source: Field survey data, 2016

Table 4.11a indicates that majority (65.3%) belonged to cooperative societies, 41.7 percent of them belonged to religious groups and 15.5 percent belonged to the age-grade group. About 9 percent belonged to social clubs. Membership of the rural farming household was further analysed to assess the membership plurality among the farmers, which is shown in Table 4.11b below.

Table 4.11b: Distribution of rural households by the number of social organizations

Number of social organizations belonged	Frequency	Percentage (%)
One (1)	234	65.9
Two (2)	94	26.5
Three(3)	21	6.9
Four (4)	6	1.7
Total	355	100.0

Source: Field survey data, 2016

Table 4.11b shows that of the 355 rural households who indicated membership of social organizations belonged, majority (65.9%) belonged to only one social organization, 26.5 percent were members of two social organizations, 6.9 percent belonged to three social organizations and 1.7 percent belonged to four social organizations. The multiplicity of membership of social organizations was expected to enhance social interactions, access to information and boost members' knowledge about rural poverty intervention programmes.

Membership of social groups is pertinent in the society as groups are fertile grounds for information spread especially those that touch on people's livelihoods. Membership of a cooperative society or economic interest group is a necessary condition required to benefit from these poverty intervention programmes. According to a respondent in the vulnerable group, their purpose was to combine resources (a common economic unit), which will enable them approach government for empowerment. Ogbonna, Dimelu, Agwu and Enwelu, (2015),

noted that World Bank (2006) emphasizes that associations help in building capacity of the groups by assisting them to register as cooperative societies to qualify for credit and farm input and be recognized by other institutions and Non-governmental Organizations. Members of cooperative societies benefit from sharing of market information and views on how best to produce at low costs. It was held *a priori* in this study that membership of social organizations like cooperative society have positive implication for positive response to poverty intervention programmes. This is because apart from easy formation of economic interest group, membership of multiple number of social organization is a source of security to credit. It bequeaths such a person with a social capital resource (Ehirim and Oguoma, 2013). Social capital grants farmers some form of social stability, easy recognition and participation in rural intervention programmes.

4.1.12 Linkage with agricultural institutions

Table 4.12: Distribution of rural households by linkages with agricultural institutions

Agricultural institutions	Frequency*	Percentage (%)
Agricultural Extension service	231	58.9
Veterinary Service	13	3.3
Research Institutions	13	3.3
Input providers	15	3.8
Credit providers	90	23.0
No links	46	11.7

*Multiple responses

Source: Field Survey data, 2016

Table 4.12 indicates that majority (88.3%) of the rural farming households in the study area were linked to one agricultural institute or the other. The spread shows that 58.9 percent have links with agricultural extension service of the Imo Agricultural Development Programme (IMOADP), 23.0 percent have links with credit service institutions such as commercial banks and 3.8 percent have links with input providers. Rural households' linkages with veterinary service and research institutions accounted for 3.3 percent each. Institutional linkage could furnish more facts about available intervention programmes. This implies that rural farm households who have multiple agricultural related institutional contacts would gain more information and knowledge which would enhance their response capacity to rural intervention programmes. Institutional linkage especially with advisory service would lead to

development of interest and efforts to seek further information which enhances the capacity to know more about the poverty intervention programmes.

4.1.13 Self esteem

Table 4.13: Distribution of rural households by self esteem

Self Esteem category	Frequency	Percentage (%)
Low	30	7.7
High	362	92.3
Total	392	100.0

Source: Field survey data, 2016

Table 4.13 shows the distribution of rural farmers by self esteem whereby majority (92.3%) of the rural households belong to the high self esteem category while only 7.7 percent belong to the low esteem category. This finding aligns with Budd, Buschman and Esch (2009) that high self esteem is strongly correlated to social identity, hence expected to positively affect response to social programmes which the NFDP and NSPFS rural poverty interventions represent.

4.1.14 Distance to the local government headquarters

Table 4.14 Distribution of rural households' homes by distance to LGA headquarters

Distance (Km)	Frequency	Percentage (%)	Mean (\bar{X})
0.30 – 6.24	355	90.6	
6.25 – 12.19	12	3.1	
12.20 – 18.14	2	0.5	3.76 Km
18.15 – 24.09	15	3.8	
24.10 – 30.04	8	2.0	
Total	392	100.0	

Source: Field survey data, 2016

The distribution of rural households by distance from their homes to LGA headquarters is shown in Table 4.14 with a mean of 3.76 Km. The majority (90.6%) of the respondents' homes were within 0.30 – 6.24 Km to the LGA headquarters, while the rest (9.4%) live more than 6.25 Km away. The Council Secretariats of NFDLP and NSPFS are domiciled at headquarters of participating LGAs and its proximity to the households' residence would enhance information flow to the targeted beneficiaries of government programmes. This implies that visiting the LGA headquarters by rural households for information on the poverty intervention programmes was not a constraint.

4.1.15 Behavioural processes

Table 4.15: Distribution of rural households on behavioural processes

Behavioural processes category	Frequency	Percentage (%)
Low	222	56.6
Moderate	88	22.4
High	82	21.0
Total	392	100.0

Source: Field survey data, 2016

Table 4.15 shows that majority (56.6%) fell in the low behavioural process category, 22.4 percent were in moderate category and 21.9 percent were in high category. It was assumed *a priori* that high behavioural processes would lead to positive response to poverty intervention programmes in the study area. The poor packaging of the programmes could be responsible for high proportion of low behavioural process (Mgbada, 2010). This result implied low social interaction among the rural households because behavioural processes entails active speaking and exchange, during which something is either given and received, otherwise, there is no interaction. This high proportion of low behavioural process is consistent with Mgbada, (2010) who observed that apathy to poverty programmes could be due to their past experience in such programmes where expected benefits were not realized even after meeting the eligibility criteria.

4.2 Sources of information

Table 4.16: Distribution of rural households by sources of information on NFDP and NSPFS

Sources	NFDP		NSPFS	
	Frequency*	Percentage (%)	Frequency*	Percentage (%)
Friends/Neighbours/Relatives	84	21.4	69	37.5
Fellow farmers	104	26.5	60	32.6
Extension agents	107	27.3	132	71.7
Radio	35	8.9	23	12.5
Television	34	8.7	1	0.5
Other sources	66	16.8	1	0.5

*Multiple responses

Source: Field survey data, 2016

Table 4.16 shows that majority (27.3%) of the rural households identified extension agents as the source of information on NFDP, 26.5 percent indicated fellow farmers and 21.4 percent indicated friends/neighbours/relatives. About 17 percent of the respondents indicated other sources such as Newspapers, Community town criers and farm input dealers as their sources of information on NFDP. Radio and Television accounted for 8.9 percent and 8.7 percent respectively as sources to the households.

On the other hand, under NSPFS programme, majority (71.7%) of the respondents indicated extension agents as the source of information on the programme, 37.5 percent friends/neighbours/relatives and 32.6 percent indicated fellow farmers as their source of information on the NSPFS programme. Radio and television were indicated by 12.5 percent and 0.5 percent of the households as the sources of information on NSPFS. The findings underlined the importance of extension service in disseminating information on rural development programmes. Though majority of the rural households identified extension service as their sources of information on the NFDP and NSPFS, but a greater percentage of the respondents identified extension service as a major source of information on NSPFS. This result corroborates the findings of Echeme and Nwachukwu (2010) that only five percent of the services are provided by public advisory service providers under the National Fadama Development Programme.

4.3 Level of knowledge of rural households to poverty intervention programmes

Table 4.17: Percentage distribution of rural households on level of knowledge to poverty intervention programmes

Poverty intervention programmes	No knowledge		Moderate knowledge		High knowledge	
	Freq.	%	Freq.	%	Freq.	%
	Fadama programme (NFDP)	116	29.7	47	12.0	228
National Special programme Food Security (NSPFS)	240	61.4	27	6.9	124	31.7

Source: Field survey data, 2016

Table 4.17 shows that majority (58.3%) of the respondents have high knowledge of National Fadama Development Programme (NFDP), 29.7 percent have no knowledge of the programme while 12.0 percent have moderate knowledge of the fadama programme. The result further reveals that majority (61.4%) of the rural farming households had no knowledge of the availability of the National Special Programme on Food Security (NSPFS), 31.7 percent had high knowledge of the programme while only 6.9 percent had moderate knowledge of the NSPFS programme. Among the poverty intervention programmes, fadama has a wider spread than NSPFS. It could mean that the rural households were not properly sensitized on NSPFS programme in the area due to the failure of the institutions saddled with such responsibility. The poor knowledge status of rural households of the National Special Programme on Food Security in the rural communities may have short-changed their possible gains, halted positive response, and endangered improved livelihood. This finding agrees with the position of Taiwo and Agwu (2016) that many government rural programmes and projects did not create the required impression on the target population to bring about the expected transformation of their livelihood.

4.4 Categories of rural households' response capacity to poverty intervention programmes

Table 4.18: Distribution of rural households into categories of response capacity

Response capacity categories	Frequency	Percentage (%)
Non response	108	26.6
Undesirable response	27	6.6
Desirable response	257	65.7
Total	392	100.0

Source: Field survey data, 2016

Table 4.18 shows that majority (65.7%) of the rural households were in the desirable response category, 26.6 percent belonged to the non-response category and only 6.6 percent were in the undesirable category. The desirable response is the required attribute that could move a farmer towards effective participation in rural intervention programmes. Improving rural farming households' capacity to fall in the desirable category should be the objective of sponsoring organization of poverty intervention programmes. Emphasis should be placed on the need to improve membership in this category to enhance participation in rural intervention programmes.

4.5 Relationship between Rural households' behavioural processes and their response capacity to poverty intervention programmes

Table 4.19: Result of uni-variate analysis of relationship between behavioral process and response capacity to NFDP and NSPFS rural poverty intervention programmes

Variables	B	Std. Error	Beta	T	Sig
(Constant)	1.495	.166		9.009	.000
Behavioural process	.693	.012	.946	57.112	.000

Dependent Variable: Response Capacity

F = 3261.73***

R² = 0.894

*** Significant at 0.01

Source: Field survey data, 2016.

The result of the effect of behavioural process on the response capacity of rural households to poverty intervention programmes is shown in table 4.19 above revealing an F-statistics of 3261.73 which is greater than the tabulated F-value of 3.84 at 0.05 (1, 390) critical level with a co-efficient of determination (R²) of 0.894. This implies that the overall model has a good fit. Hence, the controlled variable (behavioural process) actually accounted for 89.4 percent variations in the response capacity of the households to poverty intervention programmes in the state. This implies that 10.6 percent variations in response capacity of rural households to poverty intervention programme cannot be explained by the regression line.

It could be seen from the result that behavioural process was positive and significant at P < 0.05 critical level with a regression co-efficient of 0.693 implying that about a unit increase in behavioural process of the farmer led to 69.3 percent increase in the households' response

capacity to poverty intervention programmes in the area. It is therefore, deduced from the analysis that response capacity was significantly influenced by behavioural processes involved in meeting the eligibility criteria for the rural poverty intervention programmes. The implication of this finding is that any rural household that exhibited poor behavioural process towards meeting the eligibility criteria will fall within the non-response category or undesirable response category, while those showing high behavioural process will fall within the desirable response category. This finding is consistent with Egan (2007) Evidential Decision Theory (EDT), which states that behavioural action that is rational to perform by any person is the one with greatest expected utility. Rural households are considered to be rational in this study and their actions towards meeting the eligibility criteria were targeted at qualifying to participate in the poverty intervention programme, which will increase their utility.

4.6 Factors affecting response capacity of rural households to poverty intervention programmes

Table 4.20: Result of Multinomial Logit analysis of factors affecting rural households' response capacity to poverty intervention programmes

Variable	Undesirable Response			Desirable Response		
	Co-efficient	Wald	Sig	Co-efficient	Wald	Sig
Intercept	-17.641	71.688***	0.000	1.712	1.637	0.201
(Std. error)	2.084			1.378		
Age (X ₁)	-0.016	0.333	0.564	-0.020	1.246	0.264
(Std. error)	0.028			0.018		
Sex (X ₂)	-0.342	0.516	0.473	-0.629	4.645**	0.031
(Std. error)	0.477			0.297		
Marital Status (X ₃)	16.903	0.0006***	0.00	0.048	0.004	0.951
(Std. error)	0.000			0.777		
Level of Education (X ₄)	0.412	1.310	0.252	-0.603	9.300***	0.002
(Std. error)	0.360			0.198		
Farm Experience (X ₅)	0.009	0.108	0.742	0.014	0.769	0.380
(Std. error)	0.028			0.016		
Household Size (X ₆)	0.007	0.004	0.948	0.010	0.021	0.885
(Std. error)	0.114			0.070		
Number of social organizations (X ₇)	-0.435	1.216	0.270	0.321	2.089	0.148
(Std. error)	0.394			0.222		
Net annual Farm Returns (X ₈)	-0.070	4.254**	0.039	0.003	4.053**	0.044
(Std. error)	0.000			0.000		
Extension Effectiveness (X ₉)	0.022	5.229**	0.022	-0.040	38.569***	0.000
(Std. error)	0.010			0.006		
Farmers Self Esteem (X ₁₀)	0.088	0.385	0.535	0.373	16.339***	0.000
(Std. error)	0.142			0.092		
No. of Information Sources (X ₁₁)	-0.586	3.801**	0.051	-0.625	11.772***	0.001
(Std. error)	0.501			0.182		
Distance to LGA headquarters (X ₁₂)	-0.100	2.524	0.112	-0.090	11.111***	0.001
(Std. error)	0.063			0.027		
Pseudo R ²				0.404		
Chi Square				152.068***		
Log Likelihood Estimate				478.22***		
Number of Observations				392		
**		Significant at P < 0.05 Critical Level				
***		Significant at P < 0.01 Critical Level				

Source: Field survey data, 2016

Note: Non Response is the reference category

Table 4.20 shows the determinants of rural households' response capacity to poverty intervention programme, which were isolated using the multinomial logit regression estimation. The response capacity categories that presented themselves in the result were; no response (NR), undesirable response (UR) and desirable response (DR). Non response (NR) was the reference category in this analysis, hence every other parameters were measured with reference to this category as the base category. Though the analysis initially presented the undesirable response category as the base category but most of the estimated explanatory variables did not perform any better given their *a priori* expectations. Hence, the analysis was truncated in a series of trials, using different categories as the reference (base) category. The result in table 4.20 revealed that Non response category as the base/reference category gave the best estimate with many explanatory variables significant and the overall model properly fitted given the improved Chi square (χ^2) and log likelihood estimates obtained.

The likelihood ratio chi-square (χ^2) value of 478.22 with a P-value < 0.0001 shows that the model, as a whole model, fits significantly better than an empty model (i.e., a model with no predictors). The Chi Square (χ^2) estimates for this model was 152.068. The value was also significantly different from zero at $P < 0.05$ critical levels. The result also presented the **Cox and Snell R Square, McFaden and Nagelkerke R Square** values, which were all given as the methods of calculating the explained variation (Lund and Lund, 2013). These values, which were sometimes referred to as pseudo R^2 values (usually have lower values than in ordinary least square multiple regression) are given in different version as shown in the appendix. However, the values are interpreted in the same manner, but with more caution. According to Lund and Lund (2013), the explained variation in the dependent variable based on the result usually appear in range and from this result, the range was between 0.241 in

McFaden to 0.404 in Nagelkerke, depending on whether you reference the Cox and Snell (R^2) or Nagelkerke (R^2) methods, respectively. However, Nagelkerke R^2 is a modification of Cox & Snell R^2 , the latter of which cannot achieve a value of 1. For this reason, it is preferable to report the Nagelkerke R^2 value (Lund and Lund, 2013). The Nagelkerke R^2 result in Table 4.19 has a pseudo R^2 of 0.404 implying that about 40.4 percent explanation to variation in probabilities of belonging to a certain category can be explained by all the included explanatory variables.

Sex: The result shows that the explanatory variable sex, was statistically significant but negative for desirable category of response to poverty intervention programmes relative to the base/reference category. It could be deduced from this result that the probability of desirable response to poverty intervention programmes increases with male categories than with female category in the study area. This result corroborates the findings of Handa et al., (2016) who observed that male adolescence responded more to cash transfer programmes, which emerged as a promising intervention for HIV-prevention among youths in Kenya. A further analysis of their result showed that such cash transfer programmes (which is a proxy of poverty intervention programme in Africa) demonstrated reduction in HIV related risk behaviours especially among young males, hence suggesting that male category has desirable response to intervention programmes in Africa.

Level of education: The result further reveals that relative to the base category, the level of formal education attainment is positive and significantly different from zero at $P < 0.05$ critical level for the desirable response category. This shows probability that desirable response to poverty intervention programmes increases relative to the base category with an increase in level of education. Education has the capacity to increase the households'

planning skills, initiate drive for information about how they can improve their welfare and expand households' income horizon. Rural households with more formal education may have high behavioural processes towards poverty intervention programmes. This finding is consistent with the observations of UNESCO (2006) that education increases awareness, skills and socialization among people through some ICT related channels or classroom environment but the great benefit lies in their ability to use such learning skills to improve their welfare. Such learning skills expose them to the benefits already recorded with the past outcomes of some poverty intervention programmes. Households who are more informed through formal education processes will quickly cash in on the advantage of any programme that can increase their welfare to initiate changes in their livelihood better than those who are not educated or who cannot learn from any of these educative channels in the area.

Net annual farm income: Net annual farm income was significant for both desirable and undesirable response categories relative to the base category. It however has an inverse relationship with desirable response. An increase in net farm income of the rural households may increase the probability of desirable responses to poverty intervention programmes relative to the reference category. It could be deduced from this result that this direct relationship between the desirable response category and households' net farm income can expand income-generating horizon of the households who will in turn seek to meet up with the eligibility criteria of most intervention programmes such as; opening of current account, paying of counterpart funds and other commitments of the economic interest group. These would enable them to benefit from the programmes or other future poverty intervention programmes in the area. Even among undesirable response category, increase in net income affect them negatively as shown in the result. This means that as income increases, households may tend to move away from undesirable category to desirable response

category. This finding collaborates the finding of Brain et al., (2001) cited in Hatakeyama, Aonuma, Ito and Elekes (2007), that poor households are psychologically deprived because they are faced with low income and their consumption is strongly affected by this outcome. Given such deprivation, meeting the eligibility requirements for poverty intervention programmes would be difficult hence, response to such programmes in the area will be greatly affected, GDP will decline and cycle of poverty will hardly be broken even in the near future. It was therefore, deduced from this finding that increase in net farm income will widen income generating horizon of the farmers in the area, hence, their ability to meet up with eligibility criteria for future poverty intervention programmes in the near future will increase.

Extension effectiveness: The coefficients of extension effectiveness for the rural farming households though significant at $P < 0.05$ critical level were found to be positively related to the undesirable but negatively related to desirable response categories. This implies that the probability of undesirable response to poverty intervention programmes increases with extension effectiveness but not with desirable response relative to the reference category. This is because information on the rural poverty intervention programmes was disseminated by the programme donor-agencies that recruited facilitators other than public professional extension service agents. Although all the targeted beneficiaries in the rural areas had equal access to agricultural extension service with respect to agricultural technologies, they were not involved in providing information on the eligibility criteria to the households, as required to create the desirable response to poverty intervention programmes. According to Global Forum for Rural Advisory Services (GFRAS) (2012), extension service has positive effects on knowledge and productivity of rural farmers. Effective extension service will be of great

benefits to farmers in emerging opportunities such as in poverty alleviation interventions that can improve the socio – economic conditions of the rural people.

Self-esteem: Households' self-esteem is significant at $P < 0.05$ critical level and positive with desirable category relative to the base category in the study. This implies that farmers with high self-esteem tend to favour desirable response than any other category in the study area. This study corroborates Umberson and Landis (1998) in Budd, Buschman and Esch (2009) who noted that it is important for individuals to maintain high self esteem as well as social relationship which fosters a sense of social support. Self-esteem therefore, enhances social relationship, association with people and membership in social organisation as well as collaboration with others in effort to enhance economic interest groups where the principle of “none of us is more than all of us “ is recommended and applied in rural development activities. Hence, it can increase farmers' involvement in attaining most of the eligibility criteria for poverty intervention programmes in future.

Marital status: Marital status had a direct relationship with both undesirable and desirable response categories relative to the base category. The finding shows that the variable though not significant with desirable response is statistically significant at $P < 0.05$ critical level and positive with undesirable response category. However, this finding though not consistent with *a priori* expectation, does not show a significant effect with desirable response. It could be deduced from this finding that marital status increases the probability of undesirable response in the study area. Increase in marital status is expected to increase the responsibility of farming households and ensure that family labour is available. Although the findings of Ehirim et al (2012) observed that marital status increases the response to poverty intervention programmes because it may have a positive effect on households livelihood income

diversification activities. This result did not strongly explain marital status' relationship to desirable response category to poverty intervention programmes.

4.7 Rural households' perception of agricultural extension service's effectiveness in facilitating positive response to rural poverty intervention programmes

Table 4.21: Distribution of rural households by their perception of agricultural extension service effectiveness in facilitating positive response to rural poverty intervention programmes

Level of perception	Frequency	Percentage (%)
Not effective	251	64.0
Effective	141	36.0
Total	392	100.0

Source: Field Survey data 2016

Table 4.21 shows that majority (64%) of the rural households perceived the extension service as not effective in facilitating positive response to rural poverty intervention programmes, while 36 percent considered it as effective. The high proportion of no extension effectiveness response shows that households' perception of extension effectiveness to poverty intervention programmes is not encouraging. The reason could be that though extension service is designed for most of the farmers in the area, there is the possibility that most requirement for eligibility were not disseminated to the households through extension services. This could also be attributed to the special nature of the programmes and the low extension to farmers' ratio, culminating in inability of extension to reach a reasonable rural household population. The result shows that extension service would be effective when the appropriate information

are delivered to the farmers to enable them meet up with the eligibility criteria for poverty intervention programmes in the area.

4.8 Constraints militating against positive response rural poverty intervention programmes

Table 4.22: Mean-scores distribution of rural households on perceived constraints to positive response to NFDLP and NSPFS rural poverty intervention programmes

Constraints	No extent	Little extent	Extent	Large extent	Mean Score (MS)	SD
Lack of awareness of NFDLP	142 (36.2)	43 (11.0)	51 (13.0)	156 (39.8)	2.56*	1.33
Non-membership of Economic interest group	147 (37.5)	57 (14.5)	88 (22.4)	100 (25.5)	2.35	1.22
Lack of capital	53 (13.5)	66 (16.8)	48 (25.0)	175 (44.6)	3.00*	1.07
Lack of bank current account	86 (21.9)	128 (32.7)	116 (29.6)	62 (15.8)	2.39	1.00
Lack of interest in the rural poverty intervention programmes	72 (18.4)	144 (36.7)	85 (21.7)	91 (23.2)	2.49	1.04
Lack of awareness of NSPFS	73 (18.6)	50 (12.8)	79 (20.2)	190 (48.5)	2.98*	1.16
Institutional bureaucracy of government programmes	44 (11.2)	25 (6.4)	83 (21.2)	240 (61.20)	3.32*	1.01
Lack of access to credit	48 (12.2)	35 (8.9)	182 (26.0)	207 (52.8)	3.19*	1.03
Stringent requirements to participation in the programmes	54 (13.8)	30 (7.7)	104(28.5)	204 (52.0)	3.16*	1.05

*Perceived constraints

Source: Field survey data, 2016

Table 4.22 reveals the following constraints namely; lack of awareness of NFDP (MS = 2.56, SD = 1.33); lack of capital (MS = 3.00, SD = 1.07); lack of awareness of NSPFS (MS = 2.98, SD = 1.16); institutional bureaucracy of government programmes (MS = 3.32, SD = 1.01); lack of access to credit (MS = 3.19, SD = 1.03) and stringent requirements for participation in the programmes (MS = 3.16, SD = 1.05).

Some of the respondents noted that they did not benefit from previous government rural poverty intervention programmes after meeting the set qualification conditions. The implication of this finding is that, target beneficiaries could develop apathy and negative responses to future government sponsored rural development programmes. These findings are in agreement with Zoufa (2012) and Udensi et al., (2013), who identified lack of proper awareness and lack of government financial assistance among others as major constraints to participation in government rural development programmes. Awareness is a critical element in rural poverty intervention programme. Lack of awareness is an indication that the targeted beneficiaries do not have necessary information required to make decisions for appropriate and desired response. These factors could be strong disincentive to desired response to participation in the intervention programmes.

Based on the above constraints, agricultural extension service, government facilitators and donor agencies' facilitators should step up their campaign strategies in creating awareness of rural poverty intervention programmes at the initial point of introduction. They should spend more time in training and informing the target beneficiaries on the qualifying or eligibility criteria.

4.9 Hypotheses testing

4.9.1: Test of Hypothesis one There is no significant association between the rural households' socio-economic characteristics and their response capacity to rural poverty intervention programmes in Imo state.

Table 4.23 : Result of chi square (χ^2) test of association between rural households' socio-economic characteristics and response capacity

Variables	$\chi^2_{(0.05)}$	DF	Level of significance
Sex (X ₁)	6.713	2	0.035**
Age (X ₂)	9.106	8	0.333
Level of education (X ₃)	18.328	6	0.005***
Marital status (X ₄)	0.107	2	0.948
Household size (X ₅)	5.068	6	0.535
Distance from home to the LGA headquarters (X ₆)	15.852	8	0.045**
No. of sources of information (X ₇)	58.898	8	0.000***
Net annual income (X ₈)	13.434	18	0.765
Links with agric. Institutions (X ₉)	22.232	6	0.001***

** significant at 5% critical level *** significant at 1% critical level

Source: Field survey data, 2016

The entries in table 4.23 show that there is significant association ($\chi^2_{(0.05; 2df)} \text{ tab} = \chi^2_{(0.05; 2df)} \text{ cal.} = 6.713$) between sex and response capacity in the study area. Similarly, level of education of the rural households ($\chi^2_{(0.05; 6df)} \text{ tab} = \chi^2_{(0.05; 6df)} \text{ cal.} = 18.328$) had significant association with response capacity of respondents in the study area. Distance from the residence of the rural households to the LGA headquarters had a significant association ($\chi^2_{(0.05; 8df)} \text{ tab} = \chi^2_{(0.05; 8df)} \text{ cal.} = 15.852$) with response capacity. Analysis of numbers of sources of information among the rural households also revealed that the variable was significantly associated with the response capacity of respondents in the study area ($\chi^2_{(0.05; 8df)} \text{ tab} = \chi^2_{(0.05; 8df)} \text{ cal.} = 58.898$). Results also reveal that rural farmers' links with agricultural institutions had a significant association ($\chi^2_{(0.05; 6df)} \text{ tab} = \chi^2_{(0.05; 6df)} \text{ cal.} = 22.232$) with their response capacity in the study area. The hypothesis was therefore rejected and the alternative hypothesis was accepted, implying that there is a significant association between rural farmers' socioeconomic characteristics and response capacity to rural poverty intervention programmes in Imo state. Further analysis from the Multinomial Logit Model (MLM) supports the decision as the result shows a significant goodness of fit with log likelihood ratio value of 478.22 at $P < 0.05$ critical level and model chi-square (χ^2) calculated value of 152.24 at $P < 0.01$ while the tabulated chi-square (χ^2) value was 36.42 at $P < 0.05$ and 24 DF.

4.9.2: Test of Hypothesis two The perceived level of extension effectiveness has no significant association with the rural households' response capacity to rural poverty intervention programmes in the area

Table 4.24: Chi-square test of the association between perceived level of extension effectiveness and response capacity to the rural households

Variable	Calculated (χ^2)	Tabulated ($\chi^2_{0.05}$)	DF	Decision
Perceived level of extension service effectiveness	103.35	9.49	4	Reject

Source: Field survey data, 2016

The second hypothesis which states that the perceived level of extension effectiveness has no significant association with the rural households' response capacity to rural poverty intervention programmes in the area was tested using cross tabulation. The result shows that the $\chi^2_{(0.05;4df)}$ calculated value of 103.35 was higher than the tabulated $\chi^2_{(0.05;4df)}$ value of 9.49 at 0.05 critical level. The null hypothesis was therefore, rejected at this level and the alternative hypothesis was accepted that there is a significant association between extension effectiveness and response capacity of rural farmers to NFDPP and NSPFS poverty intervention programme in the study area.

The acceptance of the alternative hypothesis could be attributed to activities of other agencies that run extension programmes in connection with poverty intervention programmes. Such agencies like the programme facilitators and local government personnel who performed parallel extension service roles in the local government.

Test for Hypothesis three: There is no significant relationship between the rural households' behavioural processes and their response capacity to rural poverty intervention programmes.

Table 4.25: Univariate test of hypothesis of the relationship between rural households' behavioural processes and response capacity rural intervention programmes

Variables	$t_{(0.05; 390df)}$	Decision
Tabulated value	1.960	
Calculated value	57.112	$t_{(0.05; 390df) cal} > t_{(0.05; 390df) tab}$

Reject the Null hypothesis and accept the Alternative hypothesis

Source: Field survey data, 2016

The result of hypothesis tested as presented in Table 4.25 showed a t-calculated value of 57.112. This value was compared with the tabulated t value at 0.05 critical level which is 1.960. It was observed that the estimated critical ratio was greater than the tabulated, implying a significant relationship. Therefore, the null hypothesis was rejected and the alternative hypothesis, that says there is a significant relationship between the farmers' behavioural processes and response capacity to rural poverty intervention programmes was accepted.

Test of Hypothesis four: There is no significant association between rural farmers' linkage with agricultural institutions and their response capacity to rural poverty intervention programmes in the study area.

Table 4.26: Chi-square test on the association between rural households' linkage with agricultural institutions and their response capacity to rural poverty intervention programmes in the study area.

Variable	Calculated χ^2	Tabulated (χ^2 0.05)	DF	Decision
Linkage with agricultural institutions	66.312	18.31	10	Reject

Source: Field survey data, 2016

Table 4.26 shows that the null hypothesis was rejected since the result indicated that there was a significant association (χ^2 cal = **66.312**; χ^2 tab. = **18.31 P = 0.05**) between rural households' linkage with agricultural institutions and their response capacity to rural poverty intervention programmes. This explains the importance of agricultural institutions in poverty intervention activities in Imo state. The more the farming households have links with agricultural institutions the better their response to rural poverty intervention programme because the agricultural institutions will create the environment for developing necessary behavioural change towards rural poverty intervention programme. In addition, the plurality of institutional agricultural services to farmers would enhance access to information that could increase their response capacity to future rural poverty intervention programmes.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The work analysed the response capacity of rural households to the National Fadama Development Programme (NFDP) and National Special Programme for Food Security (NSPFS) poverty intervention programmes. The specific objectives were to: examine the socio-economic characteristics of the rural households in the area, describe the level of knowledge of rural households to NFDP and NSPFS poverty intervention programmes in the area, analyze the relationship between farmers' behavioural processes and their response capacity to NFDP and NSPFS rural poverty intervention programmes in the area, estimate and categorize the response capacity of the rural households to NFDP and NSPFS rural poverty intervention programmes in the area, isolate factors affecting rural households' response capacity to NFDP and NSPFS rural poverty intervention programmes in the area, examine the perception of rural households on the effectiveness of agricultural extension service to positive response to rural poverty intervention programmes. Identify and discuss constraints militating against positive responses in poverty intervention programmes in the area.

The study was carried out in Imo State, which was among the six states that participated in the pilot phase of the National Fadama Development Programme (NFDP), FADAMA II and FADAMA III and National Special Programme for Food Security (NSPFS). A multi-stage sampling technique was employed in the selection of four hundred rural households proportionately allotted to the three agricultural zones (Owerri, Orlu and Okigwe) that make

up the state. The four hundred rural households were administered with the research instrument but three hundred and ninety two (392) were found satisfactory for data analysis.

The primary data collected from the field were analysed using descriptive statistical tools (such as mean, percentages and frequency distribution), and inferential tools (chi-square and univariate regression) and multinomial logit model (MLM) analysis. The statistical analytical tools were appropriately applied to achieve the study specific objectives. The results of the analysis showed that majority ((36.5%) of the rural households were within the age range of 46 – 55 years, while 26.3 percent were within the age bracket of 56 – 65 years. The mean age of the rural households in the study area was 50.7 years. This indicated that the population could be regarded as active and physically disposed to pursue economic activities involved in NFDP and NSPFS poverty intervention programmes. The results of the analysis also showed that majority (57.9%) of the rural households were male while 42.1 percent were female. On household size, majority (65.5%) of the respondents had between 5 – 8 members with a mean of 6 persons. Majority (96.4%) of the respondents were married while only 3.6 percent were single. Similarly, the results revealed that 43.1 percent had secondary education, while 36.2 percent had tertiary education. The fact that majority of the rural households in the study area had some level of formal education would impact positively on their response to rural poverty intervention programmes like NFDP and NSPFS. The rural households distribution on major occupation showed that a greater proportion (43.4%) were into farming activity; participating in crops (86.5%), livestock (51.8%), fishery (9.4%) and agro-forestry (8.2%) agricultural enterprises.

The income distribution of the rural households in the study showed that majority (60.7%) earned annual net farm income below N82,529.80 with a mean annual net farm income of

N97041.63, which implied that a greater proportion (60.7%) of the respondents earned less than the mean annual net income from farming activities.

The results of the analysis indicated that majority (90.6%) of the rural households were members of social organizations while only 9.4 percent were non-members. A further analysis of those belonging to social organization showed that majority (65.1%) belonged to cooperative society groups, while 41.7 percent belonged to religious groups. Rural households membership of social organizations especially in agriculture related groups like cooperatives would facilitate information flow among the farmers, putting them on good pedestal to take decision concerning poverty intervention programmes. Information strengthens knowledge in forming opinions and developing positive perceptions towards rural poverty intervention programmes.

On rural households' link with agricultural institutions, the distribution showed that majority (58.9%) had links with agricultural extension service, 23 percent had links with credit providers, 3.8 percent with input providers while 3.3 percent of the rural households had links with veterinary service and research institutions. The results of the analysis showed that majority (71.7%) of the rural households indicated the agricultural extension agents as their source of information on NSPFS; a greater proportion (27.3%) also identified extension agents as their source of information on NFDP. The findings also showed that there were differences in knowledge distribution of farmers between the NFDP and NSPFS intervention programmes, majority (58.3%) had high knowledge of NFDP as against 31.7 percent that had high knowledge of NSPFS programme in the study area. Only 29.7 percent of the rural households had no knowledge of NFDP unlike the 61.4 percent of the rural households that indicated no knowledge of the NSPFS.

In determining factors that affect positive response to NDFS and NSPFS poverty intervention programmes a Multinomial logistic model (MLM) analysis was carried out using the non response category as the base category. The result showed that sex, marital status, level of education, net annual farm returns, number of sources of information, distance of the farming household's home to the LGA, rural households' self esteem and extension service effectiveness were determinants of positive response to NFDP and NSPFS rural intervention programmes in the study area.. The Nagelkerke pseudo R^2 of 0.404 implied that about 40% of the variables in the model accounted for variations in probabilities of belonging to a certain category. The model fit was significant at $\chi^2 = 152.068$, $P < 0.01$ and log likelihood estimate = 478.22 $P < 0.01$.

Factors determining response capacity of rural farmers to NFDP and NSPFS rural poverty intervention programmes were sex, marital status, level of education, net annual income, extension effectiveness, rural households' self esteem, number of information sources and distance from the residence of the household to the LGA. Constraints such as institutional bureaucracy, lack of access to credit, lack of capital, stringent requirements to qualify for participation and lack of awareness of the programmes were identified as impediments to positive response to NFDP and NSPFS rural poverty intervention programmes in the study area.

On the test of hypothesis one, the null hypothesis which stated that there is no significant association between the socio-economic characteristics and response capacity, was rejected, since there was a significant association between rural households socio-economic characteristics and response capacity. Hypothesis two was also rejected because there was a significant association between agricultural extension effectiveness and response capacity in

the study area. Hypothesis three was rejected since there was a significant association between rural households' behavioural processes and response capacity. Hypothesis four was also rejected because a significant association between rural households link with agricultural institutions and response capacity in the study area was established.

5.2 Conclusion

This study analysed the response capacity of rural households to NFDP and NSPFS rural poverty intervention programme. In this study, awareness of the rural poverty intervention eligibility criteria was conceptualized to create the stimuli in the members of rural households, who react to satisfy these conditions. The level of knowledge the rural households have by virtue of the awareness determines their response to the intervention programmes and the following conclusions were drawn:

1. Rural poverty intervention programmes are important in the process of reducing poverty in the rural areas by engaging the target beneficiaries in activities designed in the programmes.
2. Non response, Undesirable response and Desirable response were the three capacity categories identified in this study. However, developing desirable response capacity among the target beneficiaries is a necessary condition for farmers' participation in the activities of programmes.
3. Behavioural process of the rural households is an important factor related to desirable response to rural poverty intervention programmes.
4. Sex, level of education, net annual farm income, extension effectiveness, farmer's self esteem and number of sources of information are factors affecting desirable response to rural poverty programmes in the study area.

5. Information dissemination develops knowledge of the eligibility criteria in the programmes among the target beneficiaries. The knowledge an individual possesses affects his/her perception and outward disposition towards a social phenomena.
6. Agricultural extension service is the key agency that disseminates information to the rural farmers; however, other agencies (programme facilitators) sponsored by the programme-donors also participate in the activity of information dissemination and sensitization of rural farmers about the programmes.
7. An effective extension service would increase response capacity to rural poverty programmes by educating the rural households to develop behavioural processes needed to have a desirable response to rural poverty intervention programmes.

5.3 Recommendations

Based on the findings of this study, the following recommendations were made:

1. The government through the Ministry of Agriculture and Natural Resources (MANR) should design a policy that will ensure that there is a synergy between public agricultural extension agency (Imo state Agricultural Development Programme) and all institutions that provide information service to rural households in future interventions. This will improve their service delivery and avoid waste of resources that occasion duplication of efforts.
2. The study identified some factors that affect response capacity to rural poverty intervention programmes such as level of education, sex, marital status, annual farm income, extension effectiveness, farmers' self esteem, sources of information and distance to the LGA .These factors should be considered by Government, policy makers and Donor agencies in designing programmes aimed at alleviating and

reducing poverty in rural communities. Such policies should eliminate gender bias, encourage farm households to form cooperatives and improve sensitization and enlightenment in rural areas to eliminate or reduce the group in the Undesirable response category and increase the desirable response group required for participation in the programmes.

3. The Imo State Agricultural Development Programme should assign her staff to encourage and educate households to form cooperatives. This will improve information spread, interactions in the community and to build the important knowledge required in positive change to the individual farmer's behavioural process towards meeting the eligibility criteria for participation and sustainability of future rural development or poverty intervention programmes.
4. The agricultural extension service should train the existing cooperatives on the purposes of economic interest groups. This would solve the problem of raising finances for group activities required in opening of group bank accounts and registration with appropriate government agencies.
5. The study identified lack of awareness of NFDP and NSPFS programmes as one of the major constraints to positive response to rural poverty intervention programmes. The extension agencies should spread the awareness campaigns to more rural institutions or organizations like churches and social clubs to facilitate knowledge gain on future rural intervention programmes, since the study showed that 41.7% of the households belonged to church groups.

5.4 Contribution to Knowledge

The study of response capacity was done to cushion the problems arising from failed rural projects and poverty intervention programmes. These projects hardly realized the set goals because the behavioural elements of the targeted beneficiaries were not studied and factored into the programmes. This study has ensured that behavioural elements are identified and human response capacity to poverty intervention programmes are measured while isolating the factors that can improve it for future programmes and development process.

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APPENDIX
FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY
DEPARTMENT OF AGRICULTURAL EXTENSION

QUESTIONNAIRE ON “Analysis of Response capacity of rural households to selected poverty intervention programmes in Imo state, Nigeria

Dear Sir/Madam,

I am a postgraduate student of the above institution, carrying out a study on “**Analysis of Response capacity of rural households to selected poverty intervention programmes in Imo state, Nigeria**”.

The purpose of this questionnaire is to elicit information needed for the successful completion of this Study. All information supplied will be treated confidentially and used strictly for academic purposes.

You are required to tick (√) the option reflecting your choice option and fill in the blank spaces provided, where necessary. Your sincere cooperation is highly solicited and very much appreciated.

Thank you.

Yours sincerely,

Ajaero, Joseph. O.

11. If you are involved in Crop production, please tick (✓) the crops grown: 1. Cassava () 2. Yam () 3. Maize () 4. Cocoyam () 5. Cowpea () 6. Plantain () 7. Banana () 8. Okro () 9. Pumpkin () 10. Amaranthus () 11. Pepper () 12. Waterleaf () 13. Garden egg (). 14. Others (specify)

12. How many plots of land do you have for planting?

12a. Fill in the table below the size of each plot indicated:

<i>S/No</i>	<i>Plot size</i>	<i>Location (name)</i>
1.		
2		
3.		
4.		
Total		

13. Are you involved in fish production? 1. Yes () 0. No ()

14. If the response to question 14 is “yes”, what is the capacity (fingerlings) of your ponds?.....

15. Are you involved in Agro-forestry (Apiculture, Grass-cutter, Rabbits, Timber and Oil palm) 1. Yes () 0. No ()

16. If the response to question 16 is “yes”, What are their sizes? Indicate from the Table below:

<i>S/No</i>	<i>Agro-forestry Type</i>	<i>Size</i>
1.	<i>Bee-keeping/Apiculture</i> <i>(Nos of hives)</i>	
2.	<i>Grass-cutter</i>	
3.	<i>Timber (Plots)</i>	
4.	<i>Oil palm (plots)</i>	

17. If you are involved in animal production, what type of animal(s) do you rear? **Tick** (✓) the appropriate type listed. 1. Pigs () 2. Ducks () 3. Turkey () 4. Goat/sheep () 5 . Cow () 6. Improved chicken ()

18. What is the size of your livestock (number of the animals kept) as indicated above?.....

18a

<i>Type of animal</i>	<i>Pigs</i>	<i>Ducks</i>	<i>Turkey</i>	<i>Goat/Sheep</i>	<i>Cow</i>	<i>Improved chicken</i>
<i>Size/Number kept</i>						

19. What is your major source of labour for farming activities? 1. Family labour () 2. Hired labour () 3. Exchange labour ()

20. Indicate in the table below the quantities and income realized from each of the crop products that comes from your farming activities in a year.

S/No	Enterprises	Quantity (Kg)	Unit price (N)	Returns (N)
1.	Cassava			
2.	Yam			
3.	Maize			
4.	Plantain			
5.	Banana			
6.	Cocoyam			
7.	Cowpea			
8.	Pumpkin			
9.	Amaranthus			
10.	Pepper			
11.	Garden egg			
12.	Water leaf			

13.	Okro			
14.	Palm oil and kernel			
15.	Timber			
16.	Fish			
17.	Bee-keeping			
18.	Grass cutter			
19.	Snail production			
20.	Poultry			
21.	Sheep/ Goat			
22.	Piggery			
23.	Ducks			
24.	Turkey			
25.	Cow			
26.	Others (Please specify)			

21. What are other sources of income? 1. Salary/wage () 2. Rent () 3. Remittances (from children/relatives) ()

21a. Please give an estimate of income made from other sources in Naira (N).....

22. Membership of social organization: 1. Yes () 0. No ().

23. If “yes”, what is/are the type(s) of primary activity of the social organization you belong? (Multiple entries is admissible) 1. Pastoralism (sedentary or normal) () 2. Crop production only () 3. Agro-processing () 4. Agro-input marketer 5. Agricultural marketing () 6. Vulnerable groups (disabled, widows, women and youths) () 7. Animal production only () 7. Religious organisation () 8. Political organisation () 9. Other Economic Interest Groups (EIGs) () please specify activities

24. Number of years in the organization?Years

25. How many poles exist distance between your home and the local government headquarters?

SECTION B: Awareness of Rural poverty programmes

National Fadama Development Programme (NFDP)

1. Have you heard of National Fadama Development Programme (NFDP)? 1. Yes () 0. No ()
2. If ‘yes’ answer the following questions/statements by indicating ‘Yes’ or ‘No’

S/N	VARIABLE	YES	NO
1.	Do you know that the NFDP is a Government initiative for the alleviation of poverty?		
2.	Do you know that the state, Local governments and communities are involved in the funding arrangement?		
3.	Do you know that NFDP has a desk office in your Local		

	<i>government headquarters?</i>		
4.	<i>Are you aware that only members of economic association or cooperatives are beneficiaries in the programme?</i>		
5.	<i>Do you know that State Fadama Coordinating Office provides trainings to cooperative organisations on improved and mechanized agriculture?</i>		
6.	<i>Are you aware that the programmes seek to improve beneficiaries' income and eliminate poverty syndrome?</i>		
7.	<i>Are you aware that the programme provide infrastructure such as feeder roads, market structures and water boreholes?</i>		
8.	<i>Are you aware that the programmes provide beneficiaries with improved farm inputs?</i>		
9.	<i>Are you aware that FADAMA Program does not discriminate between male or female, married or single, young or old?</i>		
10.	<i>Do you know that the Desk office is responsible for sending the facilitators to communities?</i>		

3. Indicate your source of information about NFDP: 1. Friends/Relatives/Neighbours ()
 2. Fellow farmers () 3. ADP Extension workers () 4. Radio () 5. Television () 6.
 Others (specify).....

National Special Programme on Food Security (NSPFS)?

1. Have you heard of National Special Programme on Food Security (NSPFS)?
 1. Yes () 0. No ()
2. If 'yes' answer the following questions/statements by indicating 'Yes' or 'No'

<i>S/N</i>	<i>VARIABLE</i>	<i>YES</i>	<i>NO</i>
1.	<i>Do you know that the NSPFS is a Government initiatives for the alleviation of poverty?</i>		
2.	<i>Do you know that the state and Local governments are involved in the funding arrangement?</i>		
3.	<i>Do you know that NSPFS has a desk office in your Local government headquarters?</i>		
4.	<i>Are you aware that only members of economic association or cooperatives are beneficiaries in the programme?</i>		

5.	<i>Do you know that NSPFS provides trainings to cooperative organisations On improved and mechanized agriculture?</i>		
6.	<i>Are you aware that the programmes seek to improve beneficiaries' income and eliminate poverty syndrome?</i>		
7.	<i>Are you aware that the programme provide infrastructure such as feeder roads, market structures and water boreholes?</i>		
8.	<i>Are you aware that the programmes provide beneficiaries with improved farm inputs?</i>		
9.	<i>Are you aware that NSPFS does not discriminate between male or female, married or single, young or old?</i>		

3. Indicate your source of information about NSPFS: 1. Friends/Relatives/Neighbours () 2. Fellow farmers () 3. ADP Extension workers () 4. Radio () 5. Television () 6. Others (specify).....

SECTION C: Households' response to rural poverty intervention programmes

Instruction: Tick (✓) 'yes' on the activities you participated and 'No' otherwise

1. Did the Imo ADP extension agents interact with you concerning Fadama or NSPFS?
1. Yes () 0. No ()
2. Did you participate in the community sensitization exercise of any of the poverty intervention programmes (Fadama or NSPFS) in the state by the Imo State Agricultural Development Programme (ADP)? 1. Yes () 0. No ()
3. Did you join any Cooperative society or Fadama User Group (FUG) after the interaction? 1. Yes () 0. No ()
4. If your response to question 3 above is 'Yes', is the cooperative society registered with the Ministry of Commerce, Industry and cooperative? 1. Yes () 0. No ()
5. Did your FUG open a Current Bank account with a Bank? 1. Yes () 0. No ()
6. Did you introduce a new member into the user group/cooperative society? 1. Yes () 0. No ()

SECTION D Rural households' Behavioural processes

Instruction: Please objectively complete the matrix table below showing activities you were involved in each of the qualification step of the poverty intervention programmes. Please **tick** (✓) as appropriate.

Eligibility criteria	Behavioural process elements					Commitment
	Attendance to meeting	Group discussion	Attentiveness	Ideas contribution	Consent	
Awareness						
Baseline survey						
Formation of EIGs						
Registration of EIGs						
Opening of bank account						

SECTION E: Rural households' Self-esteem evaluation

Please answer the following questions by **ticking** (✓) in the appropriate box provided.

1. Do you like joint ownership of physical assets like crop processing mills, market stalls, cold storage rooms etc? 1. Yes () 0. No ().
2. Have you attended a free-medical examination? 1. Yes () 0. No ().
3. Do you support government policies like subsidies, aids and grants on farm inputs? 1. Yes () 0. No ().
4. Do you have a community market where agricultural produce are bought and sold? 1. Yes () 0. No ().
5. Have you participated in government organized assisted programme and projects? 1. Yes () 0. No ().
6. Do you have good infrastructural facilities in your community like; safe drinking water, Health centres, roads, drainage, VIP Latrine etc? 1. Yes () 0. No ().
7. Have you benefitted from government sponsored farm-input distribution scheme? 1. Yes () 0. No ().

SECTION F: Agricultural Extension Effectiveness

Instruction: Tick (✓) in the option that represents your opinion.

1. Are you aware of extension service? 1. Yes () 0. No ()
2. Do agricultural extension agents visit your community? 1. Yes () 0. No ()
3. Do you have contact with ADP agricultural extension agents? 1. Yes () 0. No ()
4. How did you get information about Fadama (NFDP) and NSPFS poverty interventions? 1. ADP extension () 0. Otherwise ()
5. Did agricultural extension agents assist you in joining or formation of the Economic interest group/cooperatives? 1. Yes () 0. NO ()
6. Did agricultural extension agents assist you in opening Current Bank account for the intervention? 1. Yes () 0. No ()
7. Have you undergone any training on improved farming techniques such as cultivation methods, soil fertility management, use of agro chemicals and facilitation skills organized by the agricultural extension agency? 1. Yes () 0. No ()
8. Have you participated in the ADP Extension agents On-Farm Demonstrations? 1. Yes () 0. No ()
9. Did ADP extension agents assist your FUG in making the Local Development Plan (LDP)? 1. Yes () 0. No ()

10. Did ADP extension agents assist you in facilitating needs assessment of your FUG? 1. Yes () 0. No ()

11. Did ADP extension agents educate you on the goals and procedures of FADAMA ? 1. Yes () 0. No ()

12. Did ADP extension agents educate you on the goals and procedures of NSPFS? 1. Yes () 0. No ()

13. Have you ever received information from extension service? 1. Yes () 0. No ()

14. If 'yes', what type of information?

15. To what extent do you perceive the effectiveness of extension service in mobilizing people for poverty intervention programmes? Indicate your position by ticking (√) beside the different extension activities.

<i>S/No</i>	<i>Activities</i>	<i>Very effective</i>	<i>Effective</i>	<i>Not effective</i>
1.	<i>Dissemination of information on FADAMA programmes</i>			
2.	<i>Dissemination of information on NSPFS programmes</i>			
3.	<i>Mobilizing and Formation of Cooperatives/farmers' groups</i>			
4.	<i>Linking farmers to credit institutions</i>			
5.	<i>Training farmers on improved farming technologies</i>			
6.	<i>Input procurement/distribution</i>			
7.	<i>Development of the local development plan (LDP)</i>			
8.	<i>Opening of Bank current account</i>			
9.	<i>Farm visits for diagnostic surveys</i>			
10.	<i>Facilitating the needs assessment of the FUG.</i>			

SECTION G: Constraints

To what extent do you consider the following constraints as responsible for your level of response to FADAMA or NSPFS rural poverty intervention programmes in your community.

Tick (✓) as appropriate.

<i>S/No</i>	<i>Constraints</i>	<i>To a great extent</i>	<i>To an extent</i>	<i>To a little extent</i>	<i>To no extent</i>
1.	<i>Lack of awareness about FADAMA programme</i>				
2.	<i>Non-membership of a cooperative society/farmers' group in the community</i>				
3.	<i>Lack of capital to contribute to counterpart fund</i>				
4.	<i>Lack of bank current account</i>				
5.	<i>Lack of interest in the programmes</i>				
6.	<i>Lack of awareness about NSPFS programme</i>				
7.	<i>institutional bureaucracy at obtaining planned benefits of government programmes</i>				
8.	<i>Lack of access to credit</i>				
9.	<i>Stringent requirements to participation in the programmes</i>				

Thank you, for your unquantifiable cooperation.