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Socio-Economy Determinants Of Farmers' Participation In Food Market In Oyo State Nigeria

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Abstract

The study investigated the determinants of farmers' participation in food market in Oyo State Nigeria with objective of examining the impact of socio-economic variables in this regards. Well-structured questionnaire was designed and administered to 640 respondents using multistage sampling. Primary data was collected on socio-economic characteristics, various market channel options available to the farmers, their participation level as well as the factors and constraints affecting their participation. Data were analyzed using descriptive statistics and quantitative techniques (Heckman two-staged Model, Probit Regression, Ordinary Least Square and Chi Square).The result indicated that the mean age of the farming household was 58.4years of which 97.3% are male. 93.18% of the respondents are married with an average household size and farming experience of eight and 37.5years respectively. Four market options were available in their locality of which the farm gates followed by local markets were mostly patronized. Household size and farm size were factors that positively affect their market participation while educational status distance to main road and farmers' association were found as significant factors that positively affects their participation. Also, household size, level of education, farm size, distance to main road and farmers' association positively determined their extent of participation. The two research hypotheses tested confirmed that distances to main roads have significant effect on farmers' market participation and Farmers' associations have significant effect on farmers' market participation. With respect to the constraints to market participation, pricing of produce, access to credit facilities, marketing risks and poor motivation from the

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government were the most pressing constraints faced by rural farmers. Based on these findings, it can be seen that the market participation of farmers are determined by various factors which affect their income and welfare. In order to improve on the commercialisation of the rural areas through the encouragement of the rural farmers, it is recommended that formation of policies by the government should be geared towards achieving development in the farming value chain through the provision of adequate market infrastructure, available and accessible credit facilities as well as technical and institutional support.

Keywords: Sociology, Development, Market, Market Participation, Rural, Rurality, Rural Farmers

1. Introduction

The problem of living below the poverty line attributed to Nigerian farmers could be traced to many factors: one of which is market related factors as most of the rural markets in Nigeria are still not developed. It is now evident that achieving and sustaining success in productivity based agricultural growth critically depends not only on achieving agricultural productivity and household food consumption but also increasing better market access and expansion of market opportunities as the livelihoods of most African smallholder farmers are often restrained by poor access to markets and limited entrepreneurial skills that add value to the products (Haggblade, 2004). The question of how to increase the market participation

of smallholder is a major challenge facing many government and non-governmental organizations in developing countries. Holloway and Ehui (2002) opined that the inability to access markets is a major constraint to improving the welfare of rural farmers. Enhancing the ability of poor farmers to reach the markets, and actively engage in them, is one of the most pressing development challenges. In Sub-Saharan Africa, Asia and South and Central America, small scale agriculture remains the major source of rural employment but, confronted with changes in world trade and falling commodity prices (Junior, 2006). Although, previous studies attributed the low market participation to different challenges, there is seldom any framework for ranking the impediment at village level and as a result, privatization and adaptation of intervention becomes difficult. Consequently, there is duplication of efforts and resource

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wastage, leading to a rise in food insecurity and widespread poverty (Balint, 2005). A proper net working of various socio-economic variables of rural development will produce the description given in figure 1 below.

Conceptual Model Showing The Interconnectivity Of Market Participation And Human Development.

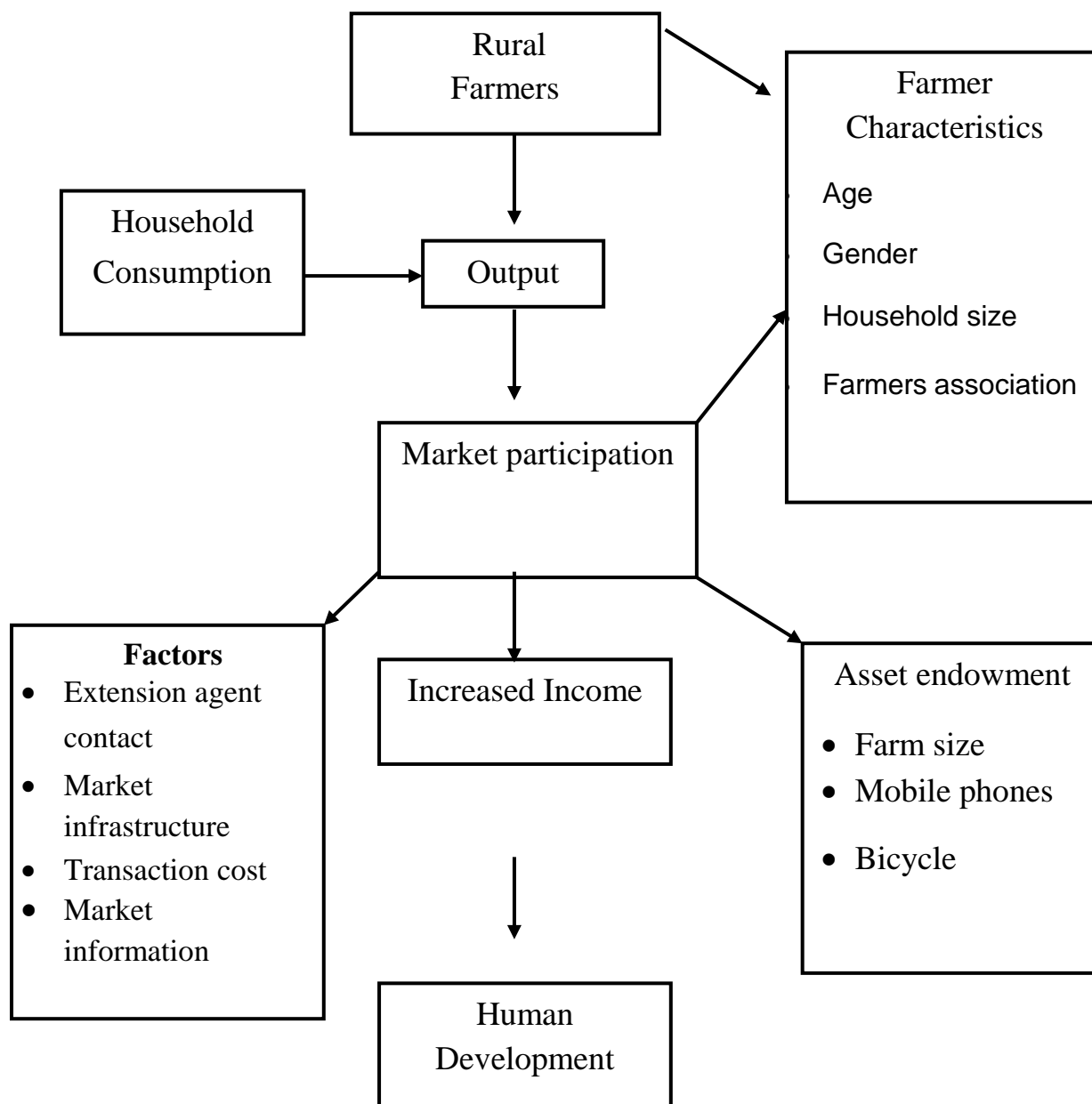


Figure 1. Conceptual model showing the interconnectivity of market participation and human development.

Source: Researcher initiative (2018).

2. Statement Of Problem

The bulk of Nigeria's populace is poor scattered in the rural areas as farmers producing the largest portion of the nation's food and exports (Oluwasola *et al* 2008). It cannot be overemphasized that about 70 percent of the Nigerian population are rural dwellers and that the bulk of the wealth on which the nation depends (that is, mineral and agricultural resources) are located therein (Olutayo 2004).

Despite the pivotal role of rural areas in Nigeria to the overall development of the country as a whole, rural development has remained elusive in spite of the enormous human and material resources devoted to it by succeeding governments at the federal, state and local government levels. Rural population mainly depends on agriculture for food and income. This suggests that agriculture remains the major engine of rural growth and livelihood improvement for any pathway that can lift large numbers of the rural poor out of poverty (Hazel et al, 2007).

It is well established that majority of the smallholder farmers are located in remote areas with poor road networks and market infrastructure, contributing to the high transaction costs, which has been seen to be one of the key reasons for rural farmers' failure to participate in markets (Makhura et al., 2001). In addition, they lack reliable market information as well as information on potential exchange partners.

National and international policy initiatives that aim at addressing this constraint have to address issues associated with socio-economic variables, which are often the embodiment of access barriers to market participation of rural farmers and market risks. Virtually, all Nigerian farmers depend on trading for some household needs and hence seek additional income generating activities. Improvements in market participation is therefore necessary to link rural farmers to markets in order to have better market for agricultural products as well as set opportunities for income

generation of rural farmers. With this the rural areas will spring up in human development at the long run.

3. Objectives Of Write Up

The main objective of the study is to examine of socio-economic determinants of market participation of farmers in Oyo state in juxtaposition of human development concept.

Specific objectives are to:

1. To determine the market output options available to farmers in Oyo state.
2. To determine the level of market participation of farmers in Oyo state
3. To examine the factors affecting the market participation by farmers in Oyo state.
4. To identify the constraints facing farmers in Oyo state.

4. Literature Review And Theoretical Framework

4.1 The Concept Of Development

Generally, development is seen as process by which man increases or maximizes his control and use of the material resources with which nature has endowed him and his, environment. Afigbo (1991) affirmed that development consists of five main ingredients: increasing material wealth for the use of individuals and the modern collectivity known as the nation; eliminating unemployment; eliminating poverty and want; eliminating inequality, and increasing the general availability of labour-saving devices. Development, from its inception, is a kind of totalistic movement and rural development is not an exception. Therefore, rural development is a multi-dimensional process by which the productivity, income and welfare, in terms of health, nutrition, education and other features of satisfactory life of rural people can be improved upon or transformed. According to Igbokwe and Ajala (1995), the earliest attempt at rural development during the colonial era took the form of community development, and later agricultural extension. The community development approach emphasized self-help to improve health, nutrition and community welfare, whereas the agricultural extension approach was concerned with improving the agricultural productivity. The goal of both programmes ultimately was to produce primary products for the feeding of European industries.

The early years of Nigeria's independence witnessed colossal concentration of development efforts on the modern sector of the economy to the exclusion of investment in the rural economic base. Therefore, the problem has been how to make rural development sustainable. Towards this end, a number of development approaches have been pursued by the various governments in Nigeria. These consist mainly in the establishment of projects, programmes, and capacity-building institutions. One shortcoming of these efforts is the limited local community participation in problem identification, project prioritization, design, preparation and implementation. Suffice it to state that most of these development approaches are elitist and urban-biased, such that the rural areas are often given lip attention in virtually all ramifications of modernization process. The rural sector is still largely characterized by absence of basic human needs and underdevelopment in agricultural and non-agricultural activities (Williams, 1994). In line with the fore-going, Diejomaoh in Ayichi (1995) asserted that rural development is a process of not only increasing the level of per capita income in the rural areas but also the standard of living of the rural population measured by food and nutrition level, health, education, housing, recreation and security. It is therefore the process of rural transformation and the monetization of the rural society leading to its transition from traditional isolation to integration with the national economy.

The rural sector of Nigeria is, very vital in the socio-economic development of the Nation. But in recent times this areas witnesses a backward shift in its development. It is observed by Nyagba (2009) that the most important sector of the Nigerian population is the rural areas. For instance, the rural sector is the major source of capital formation for the country and a principal market for domestic manufacturers (Olatunbosun, 1975). As a matter of fact, the rural areas engage in primary economic activities that form the foundation for the country's economic development.

Unfortunately, over the years, the development strategies and efforts in Nigeria has been more urban based or focused resulting to relative neglect of the rural area as evidence in the apparent dearth of basic infrastructural facilities in the rural areas (Abah, 2010). Indeed, as Okoli and Onah (2002) observe, the rural area in Nigeria are characterized by inadequacies of human needs as reflected in the near absence of some basic infrastructures with its attendant features of degradation and deprivation. Ezeah (2005:3) specifically, in this respect observes thus: The Nigerian rural areas are neglected area, even though social amenities are also not adequate in

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some urban areas. The situation in the rural areas is far worse and many communities lack basic amenities like good roads, markets, electricity, pipe borne water etc.

In the same vein, Abonyi and Nnamani (2011:225) note thus:“Today, rural poverty persist in Nigeria despite the prosperity created by the country’s oil wealth and this is evident in the difficulty experienced by many in satisfying their basic needs for food, water and shelter. Lack of these basic needs has held rural development in Nigeria to ransom”.

Indeed, Abah (2010) observed that the most evident display of Nigeria under development condition is the rural areas and that the deplorable condition of the Nigerian rural sector is emphatic.

Even though successive governments in Nigeria have made some efforts towards enhancing rural development, its meaningful realization has remained a mirage. Eke and Oghator (2011) observe this in their comment that most rural development programs in Nigeria has ended up in the pages of national newspapers and television announcements with the rural areas languishing in backwardness, stagnation, poverty and misery. This is evidenced by the apparent lack of basic infrastructural facilities and glaring presence of general low standard of living among the rural populace (Olatunbunso, 1975). Indeed as FOS (1996) and Nwuke, (2004) observe, poverty is prevalent among the rural dwellers as about 70 percent of the people in Nigeria living below poverty line are domiciled in the rural areas.

Specifically, the Nigerian rural areas are, for instance, characterized by deplorable road network and absence of all year-round reliable access road (Ugwuanyi et, al. 2013). Ele (2006) also observed that, there is, indeed, a problem of rural transport as mostly all the rural roads are not accessible and link bridges are dilapidated and in some cases even non-existent. And since accessibility is a necessity for development, its lack in most rural areas holds them back in the dungeon of underdevelopment. It is noteworthy that most of the road networks in rural areas in Nigeria are maintained through community efforts. This cannot really be effective as the contemporary road development needs of the rural areas are such that mere community efforts cannot adequately address.

More so, the quality of education in the rural areas of Nigeria is apparently very poor. Ijere (1992) stressed that rural education is characterized by limited functional or work oriented

education and disdain for handicraft and technical subjects. Okoh and Onah (2002:159) also observed that the privilege of education which, for instance, is supposed to be a birth right of every Nigerian child is an illusion to many poor rural dwellers. In some places, there are no schools at all while in some others the schools are shabby, ill - equipped and poorly staffed. Nigerian rural areas are equally characterized by apparent lack of health institutions as there are hardly any well equipped hospital health centres, clinics, and maternal homes. Similarly, Onah and Okoli (2002) observed that in most rural areas in Nigeria, no medical institution of any sort exists at all and that where they do, the people have to travel very long distances to get to them. Similarly, Olusegun and Mabogunje,(1991) reiterated that there are also low level of health care delivery system, nutrition, hygiene, education and social awareness in the rural areas of Nigeria.

The World Bank (2003) also observed that, rural areas are characterized by dearth of infrastructure, roads, health, water and poor electricity supply. It went further to reiterate that the per capita income of rural dwellers is below \$280, economic and social activities that are power-dependent are incapacitated, thus compounding rural unemployment.

Water supply in the Nigerian rural areas has also been discovered to be grossly inadequate and with the spread of water borne disease increases by the accompanying poor sanitary conditions (Ele, 2006). Abah (2010) also observed that, rural areas in Nigeria are also characterized by depressingly meager annual capital income, poor livable houses and various forms of social and political isolation.

From the fore going it is observed that there is an apparent lack of development in the rural areas of Nigerian as reflected in the near total lack of basic infrastructure, and social services Since the end of the Second World War, particularly during the past three decades, rural development as a concept and as a programme of action has attracted much attention that it has been enthroned as a vital tool in the development of many developing countries. This conviction was predicated on the firm belief that rural development could be the panacea for replacing rural poverty with prosperity in the developing countries of the world. Olisa (1992), however, observed that the results have not been significantly positive in most countries which have received and lived on aid and other income generating investments, especially from the more developed countries. The failure of rural development and the indicators of that failure are as manifest in Nigeria as in the countries in Africa mentioned in a United Nations Food and Agricultural Organization's report

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in 1988. Special issue on Rural Development published in February 1988, the Food and Agricultural Organization (FAO) painted vividly the discouraging picture in the following words: At least 700 million people live in poverty in rural areas of the developing world. And available evidence suggests, many of them are becoming poorer. "This grim picture emerges from the latest review of agrarian reform and rural development in the 1980s".

Nigeria, basic amenities such as pipe-borne water, electricity, hospitals and medical care, primary education and modern communication are inadequate in over 80% of the country's rural area. Agriculture is largely at subsistence level with traditional tools just as the rural agriculturist is without modern agricultural skill and knowledge. Over 80% of the country's population live in the rural areas and are engaged in agriculture and as Olisa (1992) observed, yet the country's internal food supply relative to domestic demands, has been consistently on a steep decline.

In the rural sector in Nigeria, public policy has consistently emphasized "increased agricultural out-put and productivity" as the main instrument for rural communities' development. Similarly, public policy makers also regard rural development as synonymous with agriculture.

As Olisa (1992) puts it, the Nigerian rural development dilemma, is that if all the agricultural and industrial projects started in all corners of Nigeria since 1950s to the present were successful, the country would have recorded a substantial food surplus and much of its rural areas would have undergone substantial transformation. Instead, the present general picture of the country's rural population, is one of economic poverty, malnutrition, poor infrastructure, poor medical facilities, persistence of local endemic diseases which have reduced the quality of labour force, to name but a few.

For example, between 1973 and 2000, Nigeria launched successively, five national rural development programmes with more than eight supportive schemes. These development programmes were in addition to the activities of the Ministry of Agriculture and Water Resources in the sphere of rural development. The programmes include among others: National Accelerated Food Production Programme (NAFPP) of 1973, Operation Feed the Nation (OFN) of 1976 (in addition to the establishment of Agricultural Credit Guarantee Scheme to make the programme to work), Green Revolution (GR) of 1980 (which albeit, a mere show or change in terminology) and the Directorate of Food, Roads and Rural Infrastructure (DFRRI) of 1986.

These rural development programmes were strengthened with more than eight supportive schemes, such as the River Basin and Rural Development Authorities (RBRDA), Agricultural Development Projects (ADPS), Rural and Cooperative Banking Policies of the 1970s, Mass Literacy Cum Nomadic Education Scheme of the late 1980s and the National Agricultural Land development Authority (NALDA) of the 1990s. The programmes and schemes were designed essentially to improve the rural output and thus develop the rural areas.

These efforts at developing the rural areas in Nigeria have not yielded the desired results, due largely to their inability to accelerate the development of this sector. The initiatives failed because of the exclusion of the people not only from policy making and planning but also from implementation. Other attendant factors for the low level of development of the rural areas include the failure to harness available resources within the rural areas, inability to sustain these programme managerial problems and the failure to take into cognizance the socio-cultural background and historical experience of the benefiting rural communities.

4.2 Marketing Concept

A market is often seen as a place or location where people meet to buy and sell goods. Marketing is concerned with all stages of operation which aid the movement of commodities from the farms to the final consumers or the market and these include assemblage of goods, storage, transportation, processing, grading, financing etc and also the dissemination of information to participant in the marketing process. All the these physical activities are designed to give the product increased time, place and form utility, and the auxiliary activities such as and also dissemination of information to participants in the marketing process (Abbott, 1993). Increase in income is stimulated among those who participate in the market given the capital and production constraints as well as the cost of market participation. It is necessary for the build-up of productive asset and public infrastructure that support agricultural production and marketing in-order to encourage smallholder farmers (Boughton, 2007). Agricultural marketing is viewed as a complex process and it involves a large number of connectivity and intermediaries handling a variety of agricultural commodities, which are characterized by seasonality, bulkiness, perishability, etc (Folarin 2013).

4.3 Marketing System

A marketing system involves the production, physical assembly, handling, storage, transport, processing, wholesale, and retailing of agricultural products, associated with services directly linking these activities, such as market information, establishment of grades and standards, financing of marketing activities, and price risk management (World Bank, 2006).

A market that is integrated and effective is an important factor that encourages smallholder farmers to increase their output which eventually makes them increase their participation in the market (FAO 2003). An important route to reduce poverty in rural areas is to enhance the market participation of rural farmers, as this can increase the net returns to agricultural production (World Bank, 2007). Effective market participation by smallholder farmers is a key factor to pulling rural people out of poverty and allowing them to also benefit from the economic opportunities the major dairy industries have access to.

According to Barrett 2007, marketing is a major determinant of agricultural growth and contributes to the overall development. They are prerequisites for enhancing agriculture-based economic growth and increasing income for the rural poor households. Subsistence dairy production cannot improve rural incomes without market-oriented production systems. This requires the intensification of dairy production systems and increased commercialization.

rural farmers contribute towards food security, and linkage creation for economic growth .The low performance of smallholder dairy farmers is attributed to the fact that most of the farmers who constitutes a large percentage of the agricultural sector are still faced with problem of accessing essential input for production and participating in the market thus, having a negative effect on the expansion of Nigeria farming industry (Dorosh and Haggblade, 2003).

An efficient marketing system enhances output and therefore improve marketable surplus. It involves the technical efficiency that is measured in terms of physical input: output ratios, e.g. amount of cheese per unit of milk. It also measures the ratio of actual output to potential maximum output per unit of input, given technology, location and environmental conditions and Operational efficiency, also referred to as price efficiency which is the level of output at which the value of marginal product equals marginal factor cost for each factor of production or

marketing, it also concern with how effectively the price reflects the cost of moving the produce through the marketing system that will result in the profit maximizing level of output.

4.3 Concept Of Market Participation

Market participation has to do with the pillar of commercialization that strictly deals with increased output market orientation of households. High degrees of rural farmers' market engagement have better potential of better standards of welfare. Based on the work of Barrett (2008), two basic interpretations can be inferred. He asserts that households can participate in the market either as sellers or buyers. Both the decision to enter the market as a seller or a buyer is motivated by the theory of optimization where the household seeks to maximize utility subject to the cash budget and available non-tradable resources. In line with this, Goetz (1992), Key et al., (2000), and Holloway et al., (2005) view market participation as a two stage phenomenon: in the first stage households decide whether to be net buyers, net sellers, or autarchic in the market for that commodity and in the second stage, net buyers and net sellers determine the extent of market participation.

Market participation is often used as a proxy for commercialization or the two terms are basically used interchangeably. Cazzuffi and McKay (2012) assert that commercialization can be conceived of and measured in a number of ways and often understood in terms of market participation Spot market, farm gate and contract market are the major market channels involved by the rural farmers in Nigeria. In spot market there is no contractual agreement or commitment between the seller and the buyer prior to the sales of a commodity, goods are sold majorly based on quality and quantity although there is high transaction cost due to the risk and uncertainty related to the search of buyers including the quality and quantity to be sold which eventually may lead to low return per unit for the smallholders. In contract market, a legal agreement is made by both the seller and commodity buyer which could be for a particular period or on a continual basis. The farmers are provided with the necessary input for the production of goods which is motivated by the buyers' investment under the contractual obligation that requires consistent access to raw materials to meet the minimum quality standard. Quality requirements and other marketing conditions may further increase the potential returns, but increase the risk of financial loss for smallholders who participate .Contract market reduces the transaction cost of these smallholder farmers however, there is a barrier to the entry of these smallholders due to need of

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the contract buyer to ensure the efficient and effective combination of input that will be used in production.

A farmer with greater asset endowment leads to greater- Output and thus a higher probability of market participation as a seller and a higher sales volume conditional on market participation. Also, production technology choices fundamentally affect its market participation choices by affecting its productivity thus promoting technological advance is essential to inducing broader based market participation and aggregate supply response to price -based policy instruments. (Gabre -Madhin et al.,2002).

5. Methodology

5.1 Study Area

Oyo state approximately has a land area of 28,454 square kilometers and it is the 10th largest state in Nigeria. The landscape consists of mostly old hard rocks and domed shaped hills. There are also vast cattle ranches at Saki, Iseyin, and Ibadan. It lies between latitude 8° 11 N and longitude 3° E. it has an estimated total population of 6,617,720 (National Population Commission, 2007); with a population density of 211 people per square kilometers and its population makes up 4% of the Nigeria's total population.). According to survey conducted by Oyo State Agricultural Development Programme (OSADP) there are 415,030 farming household and 8,276 Villages/Wards in Oyo (OSADP, 2000). Oyo state is one of the six states that make up the south west geopolitical zone of Nigeria. It shares an international boundary with the republic of Benin to the west, Interstate boundaries with, Kwara state to the north, Ogun state to the south and Osun State to the east. Oyo State Agricultural Development Programme (OSADP) divides Oyo into four agricultural zones. These zones are: Shaki, Ogbomoso, Oyo and Ibadan/Ibarapa (OSADP, 2001).

Eight Local Governments Under The Agric Zones:

Ibadan North West Local Government Area

There are eight villages/wards were identified and total number of household was estimated to be 325. Four ethnic groups reside in the 'area but the Yorubas formed the major stock. 46.9% of the household can speak English Language. Farming and trading were identified as the major

primary and secondary occupations. A total of 50.0% of the household obtain water from wells and the rest from rivers/streams (OSADP, 2001).

Electricity is available to 50.0% of the household. Primary schools are within 2.5km radius of 37.5% of the villages/wards. However, 25.0% of the villages/wards households have access to secondary education located 2.5-5.0km away. Extension service is not available in the area. Some important institutions and facilities in the area included: Primary Health Centres, MANR and RD Office, Farmers' Cooperative Societies and FADAMA Users Associations (OSADP, 2001).

Ibarapa North Local Government Area

There are 336 villages/wards identified with a total estimate of 8,754 household. Thirteen ethnic groups were identified in the area and the Yorubas (87.2%) were the major ethnic group. 6.3% of the household speak English Language. Farming (100.0%) and trading (25.9%) were the primary and secondary occupations of the people. 6.6% of the farm families obtain water from, tap/borehole, 39.6% from well and 52.7% from rivers/streams. 99.4% do not have access to electricity (OSADP, 2001).

Primary and secondary schools are less than 2.5km to 71.1% and 45.5% of the villages respectively. 46.1% of the villages/wards benefit from Extension services. Other important institutions and facilities in the area are: Primary Health Centres (PHC), Banks, OYSADEP Dam, Farm Settlement, Farm Service Centre (OSADP, 2001).

Saki West Local Government Area

There are 224 villages/wards identified 21,3085 estimated household. There are nine ethnic groups of various extractions residing in the area. The Yorubas (50.2%) expectedly are in majority Crop farming and Livestock farming were identified as the primary and secondary occupations in the area. Water supplies to 1.3% of the villages is by tap/borehole. However, 23-5% and 75.2% obtain water from well and rivers/streams respectively. 11.3% of the villages/wards have access to electricity. Primary and secondary-schools are less than 2-5km to 16.5% and 9.6% of the, villages/wards. 52.3% of villages/wards benefit from Extension Services (OSADP, 2001).

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Some important Institutions and fatalities existing in the area include: Primary Health Centres (PHC), General Hospital, Customary Court Police Posts, Government Ministries, Banks, Farm Service Centres, OYSADEP Programme headquarters, The Polytechnic, Ibadan Satellite Campus, School of Nursing and Midwifery.

Irepo Local Government Area

There are 241 villages/wards identified with 8,919 estimated household-Yoruba (84.9%) is the major stock of the eleven ethnic groups residing in the area English Language is spoken by 9.3% of the household. Crop farming and trading are the primary and secondary occupations identifiable. 9.7% of the villages have access to tap/borehole water. However, 11.5% and 78.0% use water from well and rivers/streams. About 89.9% of the villages do not have access electricity supply. 10.8% and 89% of the villages/wards, have primary and secondary schools within 55cm radius (OSADP, 2001).

Extension Services are available to 38.1% of villages/wards. Some important Institutions and facilities existing in the area include: OYSADEP office, Farm Service Centres, Primary Health Centres (PHC), Customary Court, Police Posts, Government Ministries, OYSADEP Dam, Forest Reserve, Old Oyo National Park, anti Banks (OSADP, 2001).

Ogbomoso North Local Government Area

There are 5 villages/wards identified the total estimated household was 438. There are six identifiable ethnic groups and Yoruba (96.8%) is the predominant group. 2% of the household speak English Language. Farming and trading were identified as the primary and secondary occupations of the people. 20.0% of the farm families have access to tap/borehole, 60.0% to well and 20.0% use water from rivers/streams. None of the villages/wards identified have access to electricity. Primary and secondary schools are less than 2.5km to 60.0% and 40.0% of the villages/wards respectively (OSADP, 2001).

The area has Post Offices, Customary Courts, Police Posts, Farmers' Cooperative Societies, Banks, Government Ministries, Commercial farms, Forest Reserve, Ladoko Akintola University of Technology among others (OSADP, 2001).

Ogbomoso South Local Government Area

There are 8 villages/wards in the area and the total estimated household is 334. Yoruba (97.5%) is the dominant ethnic group out of the seven identified. 3.3012, of the household speaks English Language. Farming and trading are identified primary and secondary occupations of the people in the area. 12.5% of the wards/villages are served by tap/boreholes. 25.0% use wells and 62.5% take water from rivers/streams. Also 12.5% of the wards/villages have access to electricity and the rest use bush lamps (OSADP, 2001).

Primary and secondary schools are less than 2.5km to 75.0% and 50.0% of the villages/wards respectively. About 75.0% of the villages/wards benefits from Extension services. Other facilities available in the area are: Postal Agencies, Farmers' Cooperative Societies, Plantation, Farm Settlement, OYSADEP Office, Government fish pond. Community Bank. Primary and secondary schools are less than 2.5km to 22.6% and 14.2% of the ward.

Extension services are available in 55.0% villages. Other physical and social infrastructures available in the area include: Primary Health Centres, Farm Services Centres, Customary Courts, Police Posts, Farmers' Cooperative Societies, Community Banks, College of Education (OSADP, 2001).

Oyo East Local Government Area

There are 222 villages/wards with a total estimated household of 10,831. Seven ethnic groups were identified and the Yorubas as expected are in majority (93.3%). 4.8% of the household can speak English Language. Farming and trading are the primary and secondary occupations identified in the area. 2.0% of the villages/wards are served by tap/borehole water. 12.7% use well and 84.6% take water from rivers/streams. Primary and secondary schools are less than 2.5km to 18.7% and 23.4% of the villages/wards. Electricity is available to 6.5% of the villages/wards. 53.6% of the villages/wards benefit from extension services (OSADP, 2001).

Other important physical and social infrastructures are Primary Health Centres, Farm. Services Centres, Postal Agencies, Customary Courts, Police Posts, Farmers Cooperative Societies, Banks Commercial Farms, Forest Reserve, Plantation, Fish pond and Government' Ministries (OSADP, 2001).

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Oyo West Local Government Area

There are 137 villages/wards identified and the estimated household is put at 13,331. There are nine ethnic groups residing in the area and Yoruba is the first major group. Also, 46% of the household can speak English Language. Farming and trading are the identified primary and secondary occupations. 1.4% of the villages/wards use tap/borehole water. 1.4% wells and 97.2% fetch water from rivers/streams. Also, 97.3% of villages are not supplied with electricity (OSADP, 2001).

More so, 21.6% and 20.3% of the villages have primary and secondary schools respectively located within 2.5km radius. 66.1% of the farm families have access to extension services. Other recognizable physical and social facilities in the area are: Postal Services, Customary Court, Police Post, Commercial Farm, Government livestock farm, Forest Reserve, plantation, St. Andrew's College of Education, OYSADEP Zonal office, Farm Services Centre, Old Oyo National Park, TAR and T, Banks and Government Ministries (OSADP, 2001).

Population And Sample Size

The population of the study comprises of all the 415,030 farmers in Oyo State (OSADP, 2001,5) This constitutes the working population.

Determining Sample Size

A Simplified Formula For Proportions

Yamane (1967:886) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample sizes limit has shown below. A 95% confidence level and $P = .5$ are assumed for Equation below.

$$n = \frac{N}{1 + N * (e)^2}$$

n - the sample size

N - the population size

e - the acceptable sampling error

$$n = \frac{415,030}{1 + 415,030 * (0.05)^2} = 399.61486$$

: n=400 (approximately)

Base on statistical assertion that the larger the samples size the more the reliability of the sample population, the researcher settled with sample size of 640.

Sampling Technique

A multi- stage sampling technique was employed in the selection of the respondents from these agricultural zones: Shaki, Ogbomoso, Oyo and Ibadan/Ibarapa. (OSADP, 2001). The first stage is the purposive selection of eight Local Government Areas from the four agricultural zones in Oyo State. That is, two local government areas were purposively selected on the basis of the concentration of farming activities in these areas: Ibadan North West Local Government Area, Ibarapa North Local Government Area, Saki West Local Government Area, Irepo Local Government Area, Ogbomoso North Local Governmeini Area, Ogbomoso South Local Government Area, Oyo East Local Government Area and Oyo West Local Government Area. The second stage involved random selection of six villages from each Local Government Area (LGA). The third stage was random selection of 16 farmers from each village. Finally, a total of 640 farmers were randomly selected from the list of famers obtained from these Local Governments.

Sources and Method of Data Collection.

Primary data was used to collect data for this study using a well-structured questionnaire administered to farmers in the study area and. Some of the data included the information about the socio economic characteristics (such as age, sex, level of education, marital status, household size, occupation and likes), labour cost, ownership of vehicles, access to credit and membership in groups, institutional factors (like distance to market, access to information and contact with extension workers) and. marketing behaviour of farmers (agencies to which sold, amount sold, etc)

Method Of Analysis

Descriptive statistics such as the use of statistical table, pie chart and percentages were used to analyze the socio-economic characteristics of the farmers. Socio economic characteristics; gender, household size, education, asset endowment, institutional services such as credit, extension, etc, access to market and non-farm activities were considered in the analysis to see how they affect market participation.

This study adopted a two-step analytical approach by Heckman (1979) involving the decision to participate and the intensity of participation in the markets. The Heckman models deal with a sample selection problem by computing a selection term from the first equation and including it as a regressor to correct for self-selection in the second stage regression involving observations from the selected sample. The Heckman model consists of two stages; a selection equation is estimated using a Probit model. This model predicts the probability that an individual household participate or does not in the market oriented system, and the Inverse Mill Ratio (IMR) is obtained. Then the OLS regression equation including the inverse Inverse Mill Ratio (k) as a regressor is estimated for the volume of farm produce sold annually. The purpose of the FPR is to account for sample selection in the study so that the estimates would be unbiased. The second equation is referred to as the outcome equation. It is estimated using the Ordinary Least square's (OLS). The OLS estimation is done with the inclusion of the Inverse Mill Ratio (IFPR) as a regressor. The first and the second models incorporate the same variables except that the second model includes some other variables suggested by Wooldridge (2006) as exclusion restriction variables.

$$(1) pr \left(z_i = \frac{1}{w_i}, a \right) = \varphi(h(w_i, \alpha)) + \sum_i i$$

where Z_i is an indicator variable equal to unity for households that own farm is the standard normal cumulative distribution function, the w is a vector of factors affecting market participation, the α is a vector of coefficients to be estimated, and ϵ_i is the error term assumed to be distributed normally with a mean of zero and a variance σ^2 . The variable Z_i takes the value of 1 if the marginal utility of the household i gets from participating in market is greater than zero, and zero otherwise. So we have:

$$(2) z_i = \alpha w_i + v_i$$

Where Z_i is the latent level of utility the household gets from farm ownership (i.e., market participation, $v_i \sim N(0,1)$)

$$(3) z_i = 1 \text{ if } z_i > 0$$

$$(4) z_i = 0 \text{ if } z_i < 0$$

In the second step, the Inverse Mill Ratio (IMR) is added as a repressor in the sales function regarding level of participation in order to correct for potential selection bias. If only the households who participate in the market are included in the second step, the IFPR is computed as following

$$(5) \lambda = \frac{\phi(h(w_i, \alpha))}{\phi(w_i, \alpha)}$$

Where ϕ is the normal probability density function. The second-stage (sales) equation is then given by:

$$(6) \quad E \left(\frac{y_i}{z} = 1 \right) = f(x_i, \beta) + \gamma \frac{\phi(h(w_i, \alpha))}{\phi(w_i, \alpha)}$$

Where E is the expectation operator, Y is the (continuous) extent of market participation, x is a vector of independent variables affecting sales or market participation, and β is the vector of the corresponding coefficients to be estimated.

So Y_i can be expressed as following:

$$(7) \quad Y_i^* = \beta x_i + \lambda Y_i + u_i$$

Where $u \sim N(0, \sigma_u)$ Y_j is only observed for farm owners ($Z_i = 1$), in which case $Y_j = Y_j$. The market participation regression is estimated by full maximum likelihood using the Heckman procedure in STATA.

Exogenous Variables Used In The Regression Model

1" stage-Independent variables used in determining the factors affecting market participation:

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X₁ = Age (in years)

X₂=Marital Status (yes = 1, otherwise = 0)

X₃ = Household (size in numbers)

X₄ = Level of Education

X₅ = Farming Experience (in years)

X₆ = Farm Size (in hectares)

X₇ = Farm Produce Size (in naira)

X₈= Distance to main road (in km)

X₉= Farmers' association (If yes =1, No =0)

X₁₀= Extension agent visit (If yes =1, No =0)

X₁₁= Means of information (If yes =1, No =0)

2nd stage-The independent variables used in determining the level of market participation:

X₁ = Age (in years)

X₂= Marital Status (yes = 1, otherwise = 0)

X₃= Household size (size in numbers)

X₄= Level of Education (in years)

X₅ = Farming Experience (in years)

X₆ = Farm Size (in hectares)

X₇ = Farm Produce Size (in naira)

X₈= Distance to main roads (in km)

X₉ = Farmers' association (yes = 1, otherwise = 0)

X₁₀= Credit accessibility (If yes =1, No =0)

X₁₁= Extension agent visit (If yes =1, No =0)

X₁₂= Means of information (If yes =1, No =0)

6. Data Analysis And Result Discussion

Socio-Economic Characteristics of the Respondents.

The socio-economic characteristics of the respondents as revealed for the study are analyzed and discussed. The socio-economic characteristics discussed include age, gender, marital status, household size, educational status, primary occupation, secondary occupation, etc.

Age Distribution,

Age is a predominant factor in determining the type and amount of labour involved in farm production. The distribution of respondents by age is shown below. Table 2 reveals that the study area has a very low number of young farmers which is 3.2% of the population which portends danger for the enterprise at the long run. 4.5% of sampled farmers are 31-40 years of age, 41-50 years are 6.7%, 51- 60 years are 45.9 % and 39.6 % of the population are 61 years upward. Based on this result, food production and marketing is much practiced by matured adult in the area which may create a vacuum in the future of agricultural production in the area. This is in line with Duguma (2011) and Zamasiya et al (2012) both explained this. The older and more experienced members have greater and repeated contacts, which may enhance and allow trading opportunities to be undertaken at lower costs and can influence market participation through experience and access to resources. Contradicting this findings Arega et al .,(2007) stated that market participation declines with age because the older people are perceived to be risk averse and reluctant to adopt new technologies and the young have the strength needed to carry out high labour demanding nature of farming activities.

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TABLE 2. Distribution of Respondents by Age

Source: Field Survey, 2018.

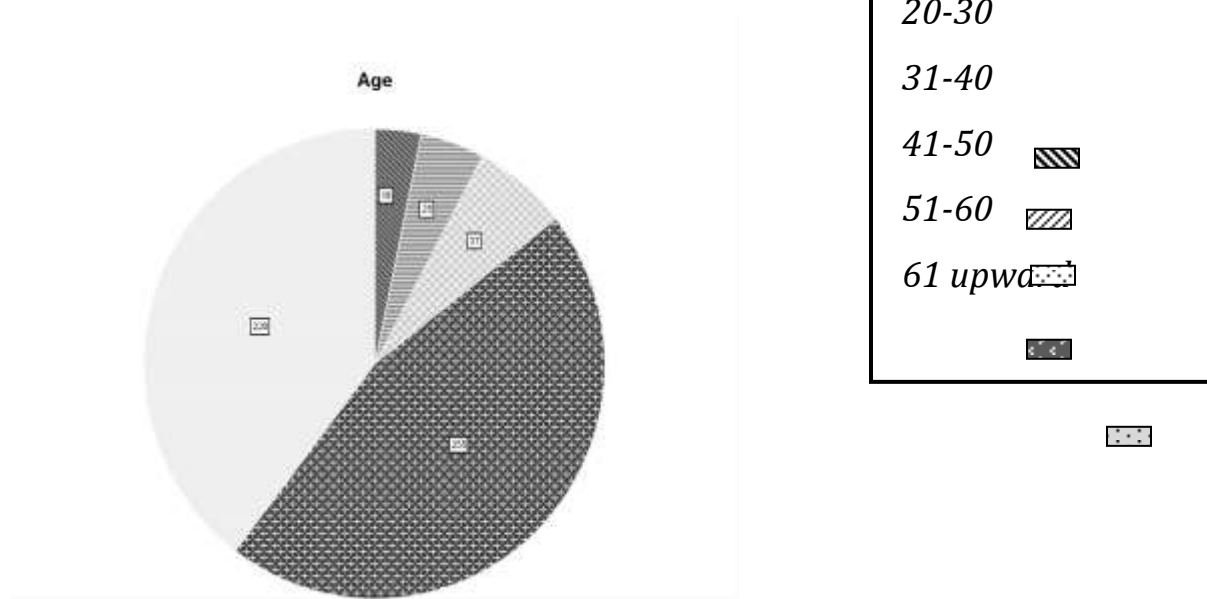


FIGURE 3. Pie Chart On Age Of Respondents

Age	Frequency	Degree	Percentage
20-30	18	11.68 ⁰	3.2
31-40	25	16.22 ⁰	4.5
41-50	37	24 ⁰	6.7
51- 60	255	165.41 ⁰	45.9
61upward	220	142.70 ⁰	39.6
Total	555	360 ⁰	100

Gender

Majority of the farmers sampled from the table below indicates that 97.3% (350.3⁰) are males while 2.7% (9.7⁰) are females. This shows that the Nigerian culture of male being the head of the household as long as lives. There is a lower chance for female-headed households to participate in the market as sellers compared to male-headed households (Ouma,2009).Female-headed households are more likely to be autarkic than to be net sellers and are more likely to be net buyers than to be autarkic. A plausible explanation for this is that female headed households are

resource constrained, thereby affecting production of a marketable surplus (Bellemare,(2004), Cunningham et. al. (2008) and Adenegan et al,(2013)).

Table 2. Distribution of Farmers by Gender

Gender	Frequency	Degree	Percentage
Male	540	350.3 ⁰	97.3
Female	15	9.7 ⁰	2.7
Total	555	360 ⁰	100

Source: Field Survey, 2018

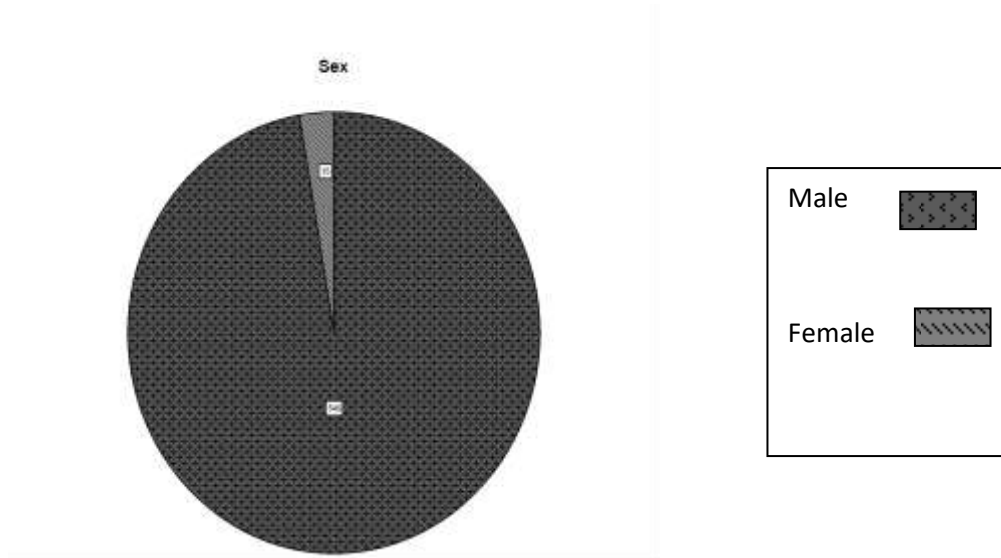


FIGURE 4. Pie Chart On Respondent Sex

Marital Status

The table 3 below shows that non out of the 'respondents interviewed was single while 542 respondents were married constituting 97.6% of the population. Similarly out of the respondents interviewed were widowed which constitutes 2.4% of the population sampled. This infers that married individuals form the majority and more participatory individuals in farming within the study area, This therefore leads towards an increased productivity as farm labour being supported by their children could reduce cost of labour and will enable farmers access to a wider market

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and enhance their market participation. The implication of this is in line with Ohen (2013) and Lawrence (2014)

TABLE 3. Distributions of Farmers by Marital Status.

Marital Status	Frequency	Degree	Percentage
Single	-	0	-
Married	542	351.57 ⁰	97.66
Widowed	13	8.43 ⁰	2.34
Total	555	360 ⁰	100

Source: Field Survey 2018.

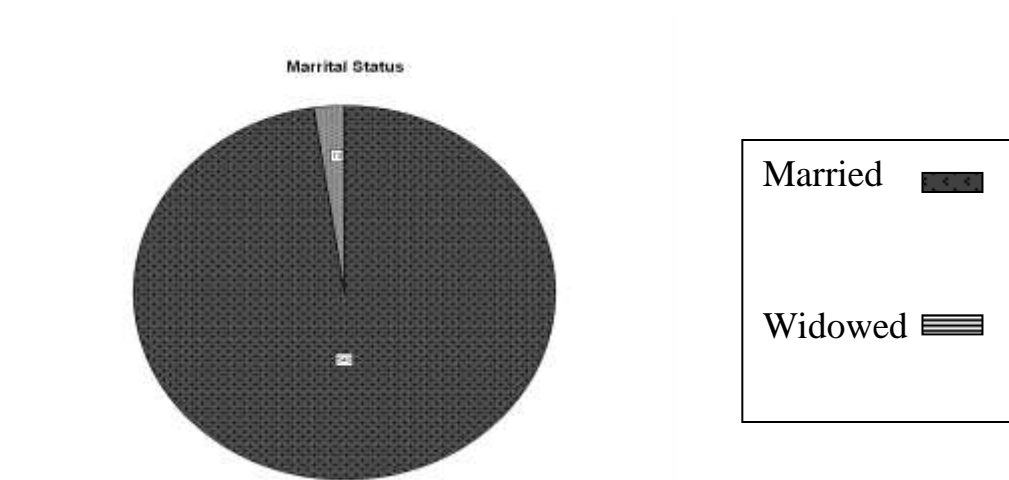


FIGURE 5. . Pie Chart On Respondent Marital Status

4.1 .4. Household Size

The household size affects consumption level, labour utilization and effective participation in the area in which credit availability helps to sustain farming activities. Farmers' response about their family size from the table below shows the family distribution. Table 4 shows that majority of the farmers' household has large household size of 6-constitutes 78.79% while other falls between the range of 11-15 and 1-5 which con: 14.39% and 6.82% respectively. The household size explains the family labour supply production and household consumption levels as a larger household provides cheap and produces more output such that the proportion sold remains higher than the pro] consumed (Alene et al, 2008). However, contradicting this result, Siziba (2010) findings argued that there is a negative association with household size and the proof to sell their produce meaning that households with large family sizes tend to satisfy consumption needs over marketable surplus.

TABLE 4. Distribution of Farmers by Household Size

Family Size	Frequency	Degree	Percentage
1-5	20	12.97 ⁰	3.6
6-10	427	276.97 ⁰	76.9
11-15	78	50.59 ⁰	14.1
16 upward	30	19.46 ⁰	5.4
Total	555	360 ⁰	100

Source: Field Survey, 2018

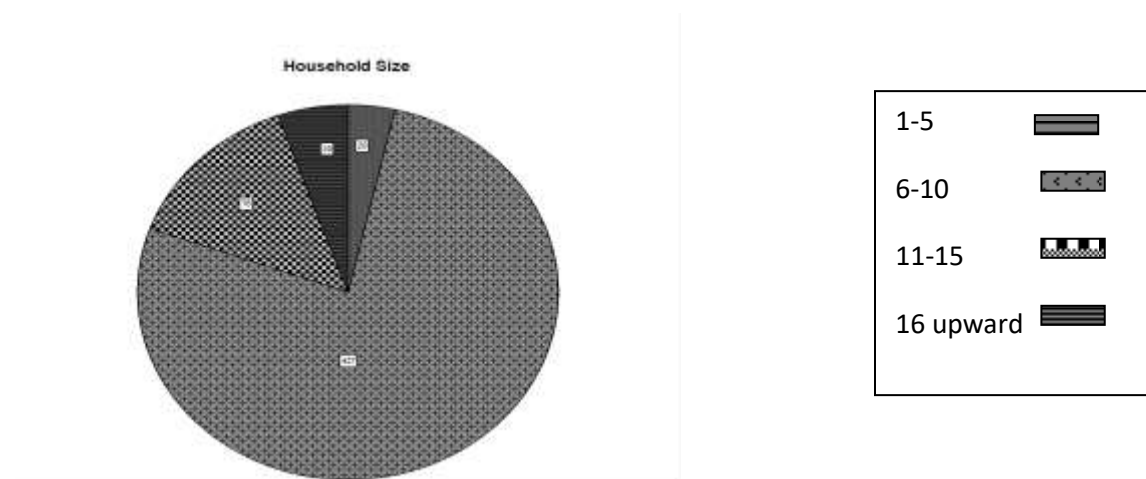


FIGURE 6. Pie Chart On Respondents Household Size.

Religion

The study shows that 59.28 % of the farmers were Muslims while 31.17% were Christians and 9.55% were Traditional believers (table 4).

TABLE 5. Distributions of Farmers by Religion

Religion	Frequency	Degree	Percentage
Christianity	173	112.22 ⁰	31.17
Islam	329	213.41 ⁰	59.28
Traditional	53	34.38 ⁰	9.55
Total	555	360 ⁰	100

Source: Field survey, 2018.

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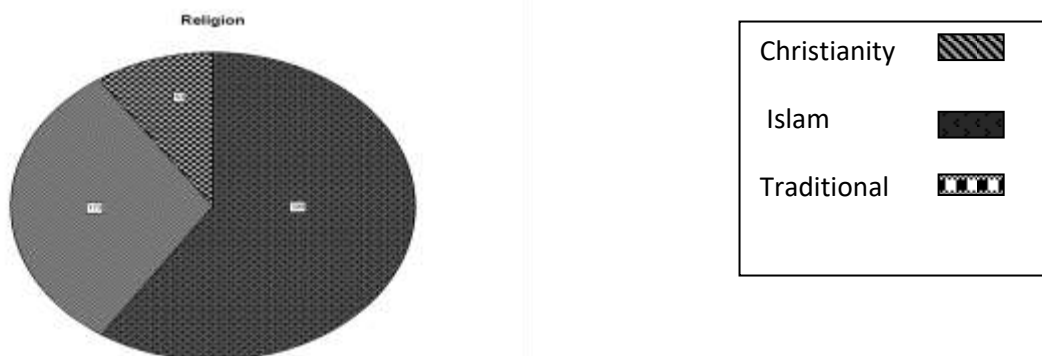


FIGURE 7. . Pie Chart On Respondent Religion

Educational Status of Respondents.

The educational status of farmer affects progress of farming operation, experience and techniques. The significance of the education level of household head to market participation is supported by Makhura et al. (2001) who argued that human capital represented by the household head's formal education is proposed to increase a household understanding of market dynamics, obtaining necessary information and therefore improve decision about the amount of output to be sold. This would assist them in the area of adoption of innovations and in making decisions that will enhance their marketing strategies Lawrence (2014).

From the table below, 0.84% of the respondents had tertiary education and more appropriate marketing strategy is expected due to the educational status and enlightenment. Also, 5.88% of the respondents had secondary education while 23.53% and 69.75% had primary and no formal education respectively which may hinder their marketing operations and techniques. Hence, majority of the farmers are not formally educated.

TABLE 3 Distributions of Farmers by Educational Status

Education	Frequency	Degree	Percentage
No Formal education	492	319.14 ⁰	69.75
Primary	43	27.89 ⁰	23.53
Secondary	12	7.78 ⁰	5.88
Tertiary	7	4.54 ⁰	0.84
Total	555	360 ⁰	100

Source: Field Survey, 2018

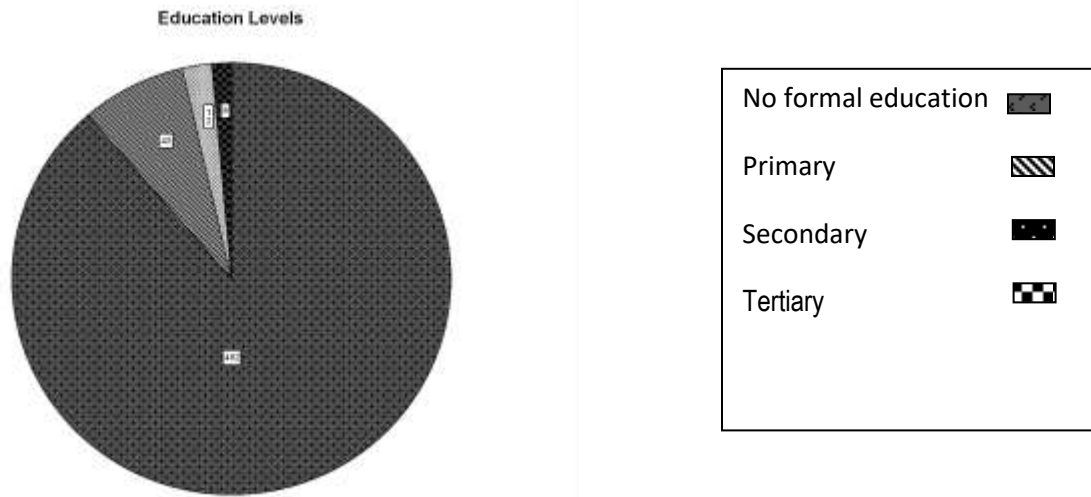


FIGURE 8. . Pie Chart On Respondents Education Level

Primary Occupation

The result from table 4 indicates that majority of the respondents primarily major in farming which is 100% (360⁰) of the population while some of respondents have secondary economic engagement-this can be seen in table 5.

TABLE 4 Distributions of Farmers by Primary Occupation

Primary Occupation	Frequency	Degree	Percentage
Farming	555	360 ⁰	100
Total	555	360 ⁰	100

Source: Field survey, 2018.

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Secondary Occupation

The analysis from the survey indicates that 205 of the respondent engage secondary occupations.

Out of these respondents 42.44% involves in trade, 26.83% civil servant while 30.73% of the respondents engage in other activities. .

TABLE 5. Distribution of Farmers by Secondary Occupation

Secondary Occupation	Frequency	Degree	Percentage
Civil servant	55	96.59 ⁰	26.83
Trade	87	152.78 ⁰	42.44
Others	63	110.63 ⁰	30.73
Total	205	360 ⁰	100

Source: Field survey, 2018.

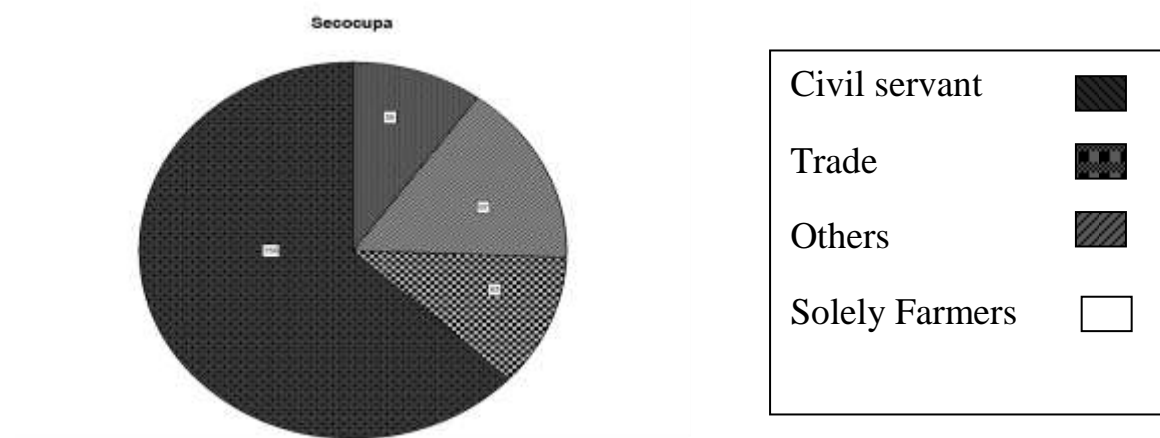


FIGURE 9. Pie Chart On Respondents Secondary Occupation

Market channels available to the farmers

The study examined different channels by which the farmers reach out to their consumers. Marketing channel choices among smallholder farmers are influenced by both institutional technical and socio economic factors (Ohen, 2013). Table 9 shows that four market options available to the farmers include farm gate, local market/village market, contract sales and family and friend. The marketing channels taken by farmers revealed that almost half (49.91%) of them sell their produce at the farm gate. Although, the price offered is often not competitive, the

farmers opt for this due to lack of storage facilities and high transaction cost. This serve as an informal form of market, as accessibility of this channel seems to be the best as majority of the farmers choose this medium. This is followed by those selling their produce in the local market, which representing 30.27% of the farmers. Only 12.97% patronized the family and friends while contract sales of 6.85% are not common. Considering the fact that the most commonly used sales outlet does not guarantee a competitive market price for the farmers, it could serve as a disincentive for market participation or increase in quantity of farm produce sold and this was also supported by Omamo et-al (1998). Contrary to this, was Jari and Fraser (2009) find that farmers who were under contract in marketing had higher probability of increasing the proportion of sale due to availability of ready market.

Table 9 Distribution of Farmers based on Market Channel

Market Channel	Frequency	Degree	Percentage
Local Market	168	108.97 ⁰	30.27
Farm gate	277	179.68 ⁰	49.91
Contract Selling	38	24.65 ⁰	6.85
Family and friend	72	46.7 ⁰	12.97
Total	555	360 ⁰	100

Source: Field Survey, 2018.

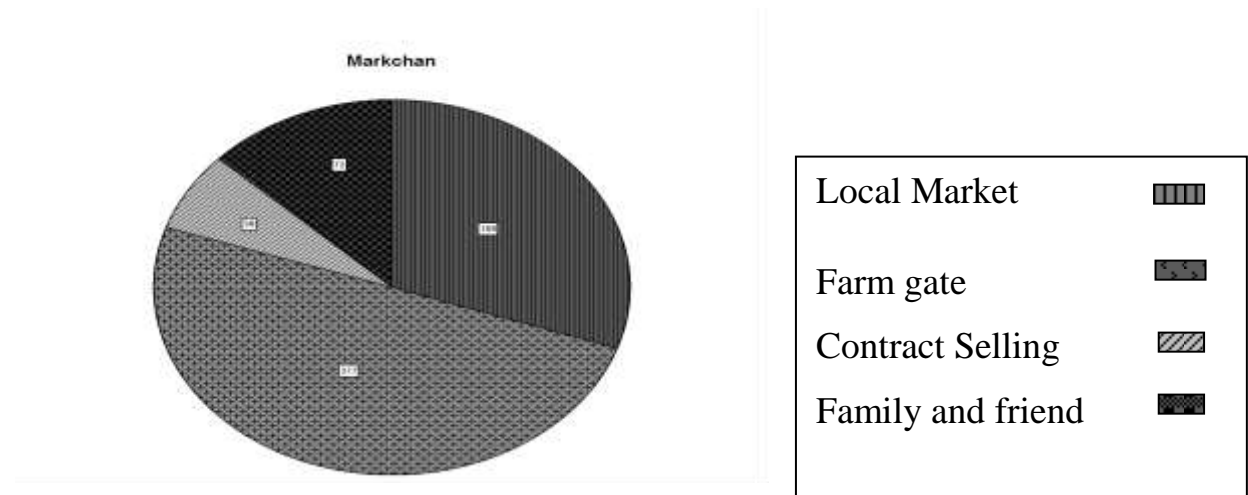


FIGURE 10. . Pie Chart On Respondents Market Channel

Constraints towards Market Participation

The study determines various constraints of the farmers towards effective market participation and the result is presented below. The table 10 below explains the 13 different constraints militating against the market participation of the farmers in the study area. It establishes that high transportation cost, pricing of produce, access to credit facilities, marketing information, marketing risk and poor motivation from government are major constraints militating against farmers market participation in the study area and they constitutes 73.87, 60.54%, 70.09%, 78.9%, 78.92%, 74.8%, and 74.95% respectively of the respondents population.

Furthermore, it is found that nearness to market , farm produce quality , lack of limited number of collection centres, lack of improved technology, lack of labour and high cost of production does not pose market participation threat to the majority of the farmers surveyed in the area and they constitutes about 55.30%, 74.41, 57.66%, 57.66%,71.17% and 73.69%, 61.54%, 71.21% respectively. This is line with study done by Ugwu(2010) and Shittu,(2008). Finally, it is found that access to resources is slightly a constraint militating against market participation of the dairy farmers in the study area and constitutes 48.29% of the respondents' population.

TABLE10. Distribution of Respondents Based on Constraints

Constraints	Yes		No		Total Frequency	Total percent
	Frequency	Percentage	Frequency	Percentage		
Nearness to market	249	44.86	306	55.14	555	100
High Transport cost	410	73.87	145	26.13	555	100
Farm product quality	142	25.59	413	74.41	555	100
Lacking market information	438	78.92	117	21.08	555	100
Produce Price	389	70.09	166	29.91	555	100
Credit Access	438	78.9	117	21.1	555	100
Limited collection centres	235	42.34	320	57.66	555	100
Lack of improved Technology	213	38.38	342	61.62	555	100
Marketing risk	415	74.8	140	25.2	555	100
Access to resources	268	48.29	287	51.71	555	100
Lack of govt. Support	416	74.95	139	25.05	555	100
Lack of Labour	160	28.83	395	71.17	555	100
High Production cost	146	26.31	409	73.69	555	100

Source: Field survey, 2018.

Factors influencing the decision to participate and level of participation in market

Heckman model was used to estimate the above objective, the model constitute two stage which include Probit regression at the first stage to estimate possible factors that are influencing the farmers in market participation while the second stage is ordinary least square which was used to estimate the extent of participation. The OLS estimated result showed a good fit with R^2 of 0.64 and F-ratio that is significant at 1% level. This implies that the explanatory variables jointly explained about 89.28% of the variation in the dependent variable. Eleven explanatory variables are selected for the factors influencing market participation which are age of the farmer, marital status, household size, level of education, farming experience, farm size, farm produce size, distance to main road, farmers' association, extension agent visit and means of information. However, only five of the variables (regressors) were significant. Out of the eleven variables household size, level of education and distance to main road were found to be significant at 5 percent while farm size and farmers' association were found to be significant at 1 percent. This significance were negative and positive effect on the factors influencing market participation respectively.

Household size was found to be significant and positive as factor influencing 'market participation. Table 4 shows that majority (76.9%) of the respondent have a large household size which has a possibility of increasing the labour used in production activities. This therefore enhances their productivity in terms of increase in farm output. More so, a unit increase in the household size will increase the likelihood of market participation by 0.076. Also, farm size was found to be significant with a negative impact. This means that a unit decreases in the size of farm size by 0.184 will have negative effect on the market participation of such farmers. This result agreed with other researchers (Adenegan et al., (2004); Eskola (2008); Heltberg and Tarp, (2002)) .In regards to the educational status, it was found be significant at 5 percent with a positive coefficient. This is with an indication that educational attainment has a positive influence in market participation. This corresponds with Ourna (2009) as household heads that have educational attainment will have a lower probability of participating in the market as sellers but as buyers due to access to off-farm income. Although Bardhan (2012) showed that the probability of market participation increased with the level of education. A unit increases in the level of education by 0.083 increases the probability to participate in market as it helps a farmer

to develop better skills, ability to analyze market situations and better empowerment to participate in the market.

Distance to tarmac road, which is an indicator of travel time and cost to the market, shows it is significantly and positively associated with the decision to participate in the market. However, road condition had a positive influence on market participation decisions, and it is statistically significant at 5% level. It means that an improvement on the condition of rural access roads influences farmers' participation in the market positively (Barrett, 2007). Farmers would be willing to practice commercial farming if road networks are good in the rural areas through which they can move their produce to the market. Again, estimated coefficient for membership of a producer society was positive and significant at 1 percent. This suggests that being a member of producer group motivate farmers to participate in the market through networking and provision of up-to-date information to members. This agrees with the findings of Moyo (2010). Kirsten and Vink (2005) support this argument that belonging to a group empowers farmers to bargain and negotiate for better trading terms. This enhanced trading term increases the extent of market participation among the farmers.

Table 11: The Heckman two-step selection equation result

Variable	Coefficient	t-value	p-value
Age of the farmer	.0131572	0.61	0.544
Marital Status	-.0104299	-0.12	0.901
Household Size	.0762271	2.05 **	0.041
Level of Education	.0828924	2.66**	0.008
Farming Experience	.0209093	0.81	0.426
Farm Size	-.1839499	-6.30*	0.000
Farm Produce Size	.0063517	0.59	0.556
Distance to main road	.0833564	2.40**	0.017
Farmers' association	.5629446	13.48*	0.000
Extension agent visit-	1008039	-1.62	0.106
Means of information	-.0153616	-0.35	0.729

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* Significant at 1% ** significant at 5% ***significant at 10%

The second stage of the Heckman model utilized ordinary least square to estimate extent of participation. The OLS estimated result showed a good fit with R^2 of 0.64 and F-ratio that is significant at 1% level. This implies that the explanatory variables jointly explained about 81.83% of the variation in the dependent variable. Twelve explanatory variables considered were age of the farmer, marital status, household size, level of education, farming experience, farm size, farm produce size, distance to main road, farmers' association, credit accessibility, extension agent visit and means of information. Out of the twelve variables, household size, education level, and distance to main road were found to be significant to be significant at 5 percent. Also, positive and significant relationships exist between the extent of market participation and farmers' association, while farm size has a significant and negative effect on the extent of market participation. Household size was found to be significant and have a positive relation in determining the extent of participation. As it was indicated in table 4, that majority (76.9%) of the household has a moderately large household size which implies that a unit increase in the member of a household increase the extent of market participation by 0.083. However this contradicts the result by Grebremedlin et al (2010) and Kuma (2013) both revealed that the larger the household size the more the volume of produce consumption and lesser amount for the market.

Level of education was found to be significant and positively determine extent of market participation. This can be explained by the fact that as an individual access more education he/she is empowered with the marketing skill and knowledge that will spur individual to participate in the market. This is in line with Astewel, (2010) who illustrated that if paddy producer gets educated, the amount of paddy supplied to the market increases; this suggests that higher level of education provides a greater opportunity for the farmers to participate in market. With respect to farmers' association, it was found to be significant and positively determine extent of market participation. Group marketing positively and significantly influences the extent of market participation. The result showed that the farmer who belongs to marketing group had a higher probability of increasing the market participation by 0.563. Marketing in group has enabled the farmers to pull their resources together and take advantage of economies of scale. Kirsten and Vink (2005) argued that belonging to a group empowers farmers to bargain and

negotiate for better trading terms. This enhanced trading term increases the extent of market participation among the farmers. It further strengthens information of farmers on the markets situations and by so doing increasing their propensity to participate in the market.

The study revealed that the distance to main road was positive and significant by 5 percent. This means that the longer the distance to the main road market, the more farmers tend to be autarkic other than net buyers and net sellers other than autarkic *ceteris paribus*. Chapoto and Jayne (2011) found a high degree of correlation between the distance travelled to the point of sale and the distance to the nearest place where vehicular transport can be accessed yet many of the autarkic farmers cannot access such places and infrastructure.

Table 12: The Heckman two-step selection equation result

Variable	Coefficient	t-value	p-value
Age of the farmer	.0148422	0.68	0.496
Marital Status	-.0124752	-0.15	0.882
Household Size	.0834322	2.18**	0.030
Level of Education	.0850681	2.71**	0.007
Farming Experience	.0167326	0.62	0.533
Farm Size	-.1880776	-6.33*	0.000
Farm Produce Size	.0068784	0.64	0.525
Distance to main road	.0914389	2.52**	0.012
Farmers' association	.5635746	13.49*	0.000
Credit accessibility	.0813221	0.77	0.444
Extension agent visit	-.1633319	-1.59	0.112
Means of information	-.020284	-0.45	0.650

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Test Of Hypotheses

First Hypotheses:

Null Hypotheses (H₀): Distance to main road has no significant effect on farmers' market participation.

Alternative Hypotheses (H_A): Distance to main road has significant effect on farmers' market participation.

Results:

The result on Table 13B shows there is a significant relationship between distance to main road and market participation. Pearson Chi-Square statistic = 216.06, and $p < 0.001$ ($\chi^2 = 216.06; DF=2; P = 0.001$). The null hypothesis which states that distance to main road have no significant effect on farmers' market participation is rejected and alternative hypothesis which states that distance to main road have significant effect on farmers' market participation is then accepted. .

TABLE: 13A

Market Participation * Distance To Main Road Crosstabulation

			Distance To Main Road			Total
			Less than 5km	5km-10km	more than 10km	
Market Participation	no	Count	116	211	93	420
		Expected Count	189.9	159.7	70.4	420.0
	yes	Count	135	0	0	135
		Expected Count	61.1	51.3	22.6	135.0
Total	Count	251	211	93	555	
	Expected Count	251.0	211.0	93.0	555.0	

Source: Author compilation from computer printout, 2018.

TABLE: 13B

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	216.061 ^a	2	.000
Likelihood Ratio	269.296	2	.000
Linear-by-Linear Association	169.115	1	.000
N of Valid Cases	555		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.62.

Source: Author compilation from computer printout, 2018.

Second Hypotheses:

H₀: Farmers’ association has no significant effect on farmers’ market participation.

H_A: Farmers’ association has significant effect on farmers’ market participation.

The result on Table 14B shows there is a significant relationship between farmers’ association and market participation. Pearson Chi-Square statistic = 337.27, and $p < 0.001$ ($x^2 = 337.27; DF=1; P = 0.001$). The null hypothesis which states that farmers’ association have no significant effect on farmers’ market participation is rejected and alternative hypothesis which states that farmers’ association have significant effect on farmers’ market participation is then accepted.

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TABLE: 14A

Market Participation * Membership Of Association Crosstabulation

			Membership Of Association		Total
			no	yes	
Market Participation	no	Count	363	57	420
		Expected Count	274.7	145.3	420.0
	yes	Count	0	135	135
		Expected Count	88.3	46.7	135.0
Total	Count	363	192	555	
	Expected Count	363.0	192.0	555.0	

TABLE: 14B

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	337.274 ^b	1	.000		
Continuity Correction ^a	333.465	1	.000		
Likelihood Ratio	382.270	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	336.666	1	.000		
N of Valid Cases	555				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 46.70.

7. Conclusion

The study of the farmers' participation in food market in Oyo State revealed that farm gate channel as against the other market channels available to them is mostly used by the farmers due to the easy access. They preferred selling at the farm gate or village market due to lack of good roads and information which resulted into high transportation cost and lower farmers' return as a result of middlemen's exploitation. Also, the farmers were affected by some constraints that hindered their market participation rate. Those constraints include, pricing of produce, access to credit facilities, marketing risks and poor motivation from the government. Household size, level of education, farm size, distance to main road, and farmers' association were identified as factors

affecting farmer's participation and their extent of participation. The reason being that increase in household size reduced the cost of labour and increase their efficiency in production and marketing, more available.

It is therefore known that market participation is crucial in improving the rural farmers production and local industry. This in turn will help increase their income and improve on the welfare of the farmers that is, bring about human development.

8. Recommendation

Based on the study findings, some of the suggested policy recommendations include:

1. The need to foster development of producer groups and cooperative societies in order to boost farmers' market participation. Government should encourage formation of local or community associations where farmers can have a common voice get information about market situation and assist one another via collective works.
2. Effort should be geared at improving the status of rural infrastructures especially road networks. Investment in rural road infrastructure would lead to more traders penetrating the rural areas and this will increase competition and could benefit farmers through higher prices.
3. There is the need to build capacity of these farmers through adult literacy programme and government should formulate appropriate policies and programmes that would mobilize and encourage the farmers to go to school. This will better enhance adoption of modern farming techniques that will invariably lead to increased output and incomes for the farmers.
4. Incentives in the form of price support should be put in place to encourage the farmers to earn better returns for their effort.
5. Extension worker-farmer ratio should be improved upon for a better service delivery by the agent and understanding by the farmers. This way there can be easy dissemination of information and the farmers can easily adapt to the new techniques and innovation.
6. Provision of basic facilities by Government and credits to poor farmers by agricultural banks or microfinance bank in order to overcome production and marketing constraints.

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