2014). In Nigeria for instance, cassava root and leaves do not only serve as an essential source of calories but as a major source of income for rural households. Cassava provides food and income to over 30 million farmers and large numbers of processors and traders in Nigeria (Abdoulaye*et al.,*2014; Solomon, 2010; Solomon *et al.,*2011). To increase productivity, technology must be adopted in the production process and the rate of adoption of a new technology is subject to its profitability, degree of risk associated with it, capital requirements, agricultural policies and socioeconomic characteristics of farmers (Shideed and Mohammed,2005).

The importance of cassava as a staple food crop in addressing the food security challenges of Nigeria cannot be over-emphasized because of the socio-economic potentials of the crop. The Federal Government of Nigeria did set up a Presidential Initiative on cassava production and export in 2002, with the aim of diversifying and expanding the uses of cassava and create opportunities for income generation for the rural populace. In 2004, President Olusegun Obasanjo introduced a policy to incorporate 10% cassava in bread production in Nigeria. In view of this development, the role of increased efficiency vis-a-vis productivity of cassava farm is no longer debatable. Studies have shown that, cassava farmers in Osun State in particular, and Nigeria generally faced with alot of socio-economic constraints and therefore experience low productivity (Edimetta,1987; Enun, 1990; Abang*et al*, 2001; Aji, 2004; Abang and Agom, 2004).

With these issues in mind, what is the potential for cassava in Nigeria? Africa produces 42 percent of the world cassava output. Nigeria and Ghana are the leading producers for cassava but can only process 16 percent of the root tuber for home industrial uses and for export (Ayoade and Adeola, 2009; Knipscheer*et al*., 2007; Nweke, 2004). Cassava processing at the household level is an important income generator in poor rural areas, particularly for women, not only in Africa but also in Latin America and Asia. Cassava has good potential to contribute to economic diversity and could create many opportunities for the development of other processing industries (Kaine, 2011; Sanni*et al.*, 2009; Odebode, 2008; Echebiri and Edaba, 2008; Haggbade, 2007; Olomola, 2007; Ospina and Wheatley, 2007; Nassar and Ortiz, 2006; Nweke, 2003; Camara*et al.*, 2001; Scott *et al.*, 1992). Recent studies have particularly focused on technical, allocative, economic and environmental efficiency (Sekhon*et al.*, 2010; Shamsudeen*et al.*, 2011; Ogundari and Brummer, 2011; Rahman, 2002) as means of improving agriculture performance and outputs.

Yet, while the countries in Sub-Saharan Africa (SSA) countries are experiencing slow increases in levels of food production and export (Rosen and Sapouri, 2012), the yield gap between SSA and countries like China, Thailand, Brazil and Mexico is increasing. These economies, by boosting their agricultural output and export, have reduced the level of rural poverty significantly (Rosen and Sapouri, 2012; Abler, 2010). Therefore, in view of the various government agricultural programmes and policies put in place to raise farmer's productivity, it is imperative to empirically determine farmer's current levels of socio-economic hindrances with a view to suggesting relevant policy options to adopt, in order to eliminate these hindrances. This is because there is a direct relationship between socio-economic factors of production and the overall productivity of the agricultural sector (Ajibefun, 2002).

1.2 Statement of Research Problem Problems

Nigeria has not been able to attain self-sufficiency in food production due to lack of mechanization and the small scale nature of production. The nation is among the countries in Sub Saharan Africa that experience significant food shortages as over 40% of the country's population is estimated to be food insecure(Ospina

and Wheatley, 2007). The food shortage problem is indicative of the high food import bills, consistent rise in domestic food price, high annual growth rates of food demand when compared with food supply and nutritional problems among others (Echebiri and Edaba, 2008; and Haggbade, 2007).

The problem of food shortages and insecurity is exacerbated when we consider the fact that food production in Nigeria is in the hands of small scale farmers who practice mixed cropping system and cultivate between 1-2 hectares of farm land which are usually scattered over a wide area (Kaine, 2011; Sanni et al., 2009; Odebode, 2008; Echebiri and Edaba, 2008; Haggbade, 2007).

In addition, the productivity of these farmers is often affected by factors such as age, cropping patterns, years of farming experience, and lack of access to credit which tend to impact negatively on productivity and efficiency. According to Kaine, (2011); Sanni et al., (2009); Odebode, (2008); Echebiri and Edaba, (2008) and Haggbade, (2007), despite all human and material resources devoted to Nigerian agriculture, the productive efficiency of farmers for most crops still fall below 60%.

The inefficiency problem is attributed to factors such as use of low input technologies, lack of knowledge of high input technologies and poor farm management skills, poor extension services, unavailability and high cost of inputs (Ospina and Wheatley, 2007). Previous studies on efficiency of resource utilization and productivity (Olomola, 2007; Ospina and Wheatley, 2007) showed that there are wide variations in the levels of productivity and socio-economic factors affecting the production of the major food crops, and the levels are far from the optimum. This indicates therefore that ample opportunities exist for the farmers to increase their productivity and production output in cassava farming. It is against this backdrop that the study will examine the factors affecting the output and productivity of cassava farming in Osun state the main objective of determining and isolating the factors that affect farmers' productivity in the area.

The socio-economic progress of Osun state rests on the performance of the agricultural sector, which is dominated by smallholder farmers. As it is well known, in peasant agriculture the goal of development is undoubtedly changing the scope and efficiency of food crops production (Nord and Andrews, 2002). There are many different factors that affected food security; like drought, pests and diseases, unbalanced rainfall, unequal distributions of land holding, unstable political situations, limited infrastructure, lack of finances, lack of asset holding awareness and skill, lack of storage for produced products, climate changes, new technology adoptions, marketing situations, lack of incentives from stockholders, soil fertility status problems, limited water for irrigations, lack of extension visits, education, income, working conditions and etc.

In order to tackle these and other factors associated with food security problems, cassava production has gotten an international attention and currently different organizations and foundations are involved in research and development activities. For instance, according to Mahungu (2010) The Clinton Foundation, Pan African Cassava Initiative and Kellogg Foundation through pan African cassava initiatives were assisting farmers in planting high yielding cassava varieties that grow in relatively dry conditions to ensuring food security and enhance incomes for thousands of families in Sub-Saharan Africa (Alwang and Siegel, 2003; Moyo et al., 2007).

Main weaknesses of many studies were that they do not explicitly point out a causal effect of agricultural production on farm households' wellbeing or in other word; they fail to establish an adequate counterfactual situation and identify the true causality of change. Indeed, in order to assess the impact of cassava production in ensuring food security or income generation, the researcher should be able to assess what the

situation would be like if the cassava production had not been adopted, *i.e.*, the counterfactual situation. If not, that can lead to misleading policy implications, as at the household level many other factors may have changed along with technology.

However, no single study has so far closely looked at how to improve productivity and efficiency of cassava root tubers (CRT), especially with regard to its processed products such as gari. As discussed earlier, there are also controversies regarding farm size and productivity in agricultural crops in general. Therefore, it is important to understand the relationship between farm size and productivity performance of cassava, as well as gari, in a Nigerian context. Furthermore, the discussion above has highlighted that other socio-economic factors may affect performance of producing CRT as well as gari. In addition, little is known about market performance, marketing margins, market structure and marketing constraints of cassava and its processed products in Nigeria.

Therefore, this study is to analyze the socio-economic factors influencing the output and profitability of cassava farms in Osun State, with a view to determine the output of the farmers, ascertain the factors that influence the cassava productivity and profitability as well as derive policy implications and make recommendations based on the findings of the study.

1.3 Study Objectives

The main objective is to investigate the socio-economic factors influencing the output and profitability of cassava farms in Osun state. This will be done by assessing cassava production profitability, production output andsocio-economic constraints in production of cassava, in thestudy area. The specific objectives are to:

Profile the socio-economic characteristics of the cassava farming respondents in the study area;

assess the total cassava output produced in the production season by the farmers in the study;

assess the profitability oftheir cassava farms and

identifysocio-economic factors affecting the output and profitability of the cassava farms.

1.4 Statement of Research Hypothesis

The research hypothesis evaluate and test the objectivity of the research. In view of the above research objectives, the following Heckscher-Ohlin Hypothesis (HO) were formulated:

HO: socio-economic factors do not affect the cassava farming in the study area.

H1: socio-economic factors do affect the cassava farming in the study area.

1.5 Justification

Many studies have argued that efficient land use, value addition through processing, good links between producers and consumers, available market opportunities, good policy frameworks and provision of required infrastructure provisions are key factors influencing Africa's agricultural productivity, as has been the case in other countries like China, Thailand, Brazil and Mexico that resulted in a substantial reduction of rural poverty (Abler, 2010; OECD, 2010; FAO, 1999).

One main issue that has featured in several studies worldwide is the role of socio-economic factors on agricultural productivity which shows mixed results depending on the particular nature of case studies. For example, Wadud and White (2000) suggested that in Bangladesh socio-economic factors decreases with farm size and that farmers with good soils were significantly more productive. Studies carried out by Gul Unal (2008) and Van Zyl (1995) also supported the view that large-scale farms are generally inefficient when compared to small-scale farms.

Adesina and Djato (1996) and Udry*et al.* (1995) noted that small wheat farmers in the Nigeria were more economically backward than large-scale farmers (also found in in Burkino Faso). The same conclusions were reached in Nigeria by Anyaebunam (2012) and Okoye*et al.* (2009). Similarly, Taddese and Krishnarmoortly (2007) reported significant differences in socio-economic characteristics across farm size groups of paddy farmers in Pakistan, arguing that small and medium-sized holdings were operating at higher productivity on the average than large farms. The reason forwarded by them is that since accessibility to institutional finance depends on asset positions, small farms were forced to utilize more family labours with their meagre resources more efficiently, as they cannot receive finance as easily as large farms. However, Alvarez and Arias (2004) noted that there are also a number of studies that failed to come up with concrete evidence of differences in socio-economic status, allocative and economic efficiencies between small and large farm sizes. Thus, Murthy *et al.* (2009) Al-hassan (2008) and Ghose (1979) all argued that land size does have significant impacts on the level of socio-economic stability and output level. Cornia (1985) also asserted that those who find inverse relationships between farm size and profitability often advocate land redistribution into smaller-units for small farms from land taken from large-scale farms.

 On the other hand, Perdomo and Mendiata (2007), Chirwa (2003), Owen (2003) and Rahman (1998), among others, argued that large-scale farms are more profitable than small sized farms – a tendency also supported by Oyewo, (2011), Ogundari and Brummer (2011), Agom*et al.* (2011), Ebong*et al.* (2009), Rahman and Umar (2009), Yusuf and Malomo (2007) for Africa. Overall, therefore, substantial debate continues about farm size as a driver/indicator of profitability.

Groundnut production in Osun state is not well developed compared with other Nigerian states countries such as in middle belt. There is a need to transform the agricultural sector from smallholder subsistence farming into larger scale commercial farming. This study addresses socio-economic factors that limit cassava output and profitabilityOsun state region. The study aims to inform policy makers at both local and national level on short-and long-term policy responses to address socio-economic constraints on cassava production in the area. By examining the process of land acquisition, ownership and utilization among smallholder farmers, the study further seeks to help smallholder farmers in planning and utilizing land sustainably. In addition, the study identifies affordable techniques to add value to cassava production that can be used by producers to increase sales and profit.

1.6   Chapterization of the Research

The thesis is organized into five chapters. Chapter one introduces the study. It presents the background to the research problem, statement of the problem, research objectives and questions, and justification of the study. Chapter two describes the theoretical framework underpinning the current research and reviews literature relevant to the study topic. Chapter three describes the methodology and tools used in the study. Chapter four presents and discusses the findings. Concluding remarks and recommendations are provided in chapter five and references and appendix (es) followed ends the work.

1.7   Defination of Terms

Household: Callens and Seiffert (2003) defined a household as a unit of people living together headed by a household head. This is often a man or a woman, in case there is no man. Increasingly, grandparents are taking up this role, as well as adolescents, in those households where both parents have deceased. Apart from the head of the household, there may be a spouse, children and permanent dependants like elderly parents or temporary dependants like a divorced daughter or son. Ellis (1993) defines a farm household as

an individual or a group of people living together under one hearth deriving food from a common resource, obtained mainly from farming activities. In this study a household is considered as a unit of people living together headed by a household head.

Total income: According to Ellwood, 2000; Danziger *et al*, 2003, GDP is the total income from the production of bread, which equals the sum of wages and profit. $TI = NI – CP – SIC – Ni + D + GT + PII$. Where**:**TI is Total Income , NI is National Income, CP is Corporate Profits, SIC is Social Insurance Contributions, Ni is Net Interest, D is Dividends, GT is Government Transfers to Individuals and PII is Personal Interest Income. The total output of an economy equals its total income. Because the factors of production and the production function together determine the total output of goods and services, they also determine national income. Total income is divided among the return to labor, the return to capital, and economic profit. Total income is also divided among wages, return to capital, and economic profit. It is derived from national income figures; total income is the sum amount of money received by individuals for their own use in a given period of time. It is made up of all types of income: wages and salaries, proprietor and rental income, farm income, dividends and personal interest and transfer payments. The latter comprises income from pensions, social insurance and social-service payments. In recent years transfer payments have become a more important segment of personal income and as well as total income (Bagchi, 1994).

Cassava and cassava production: Cassava (*Manihotesculenta*) is a shrubby, tropical, perennial plant that is not well known grown in the temperate zone with eventually some periods of dormancy (if temperature is low). In cultivation, however, it is treated as annual crop. During the growth there are five distinct phases. These are sprouting phase, leaf and root system development phase, canopy establishment phase, high carbohydrate translocation phase and dormancy phase (Lebot, 2003). The cassava plant grows tall, sometimes reaching 15 feet or 4.57 meters, with leaves varying in shape and size. For most people, cassava is most commonly associated with tapioca or starches. However, the edible parts are the tuberous root and leaves. The tuber (root) is somewhat dark brown in color and grows up to 2 feet long. According FAO (2002) there are two types of cassava varieties such as sweet and bitter cassava varieties. Sweet cassava variety is normally used directly by human consumption which has less than 100 mm of the total Cyanogenic Glucosides (CGs) per kg of the peeled fresh roots. And bitter cassava type is not suitable for human nutrition as it is fresh but it needs further processing, which have higher starch content (more than 100 mm of CGs), which is used for animal feed or processed into industrial inputs (Vessia, 2007 and Lebot, 2009). However, Out of 242 million tonnes of total cassava produced in 2009, only a fifth was globally traded (FAO, 2009). The bulky and low value nature of the crop makes efficient transportation necessary for cross border trade to be viable (Tijaja, 2010).

Output: Measured as kilograms of cassava root tuber harvested

Profitability: The productivity of a production unit means the ratio of its output to its input, and productivity will vary according to differences in technology, in the efficiency of the production process and in the production environment (Kaitpathomchai, 2008). The terms productivity and efficiency are often used interchangeably but they are not the same (Jayamaha and Mula, 2011). Productivity is an absolute concept and, as mentioned above, is measured by the ratio of outputs to input. The maximum possible output becomes relevant in order to find answers to certain economic questions, such as the measurement of the efficiency of an enterprise.   According to Liverpool-Tasie *et al* (2011), agricultural productivity is measured

as the ratio of final output, in appropriate units, to input. It also refers to output produced by a given level of input in the agricultural sector of a given economy (Fulginiti and Perrin, 1998). According to Olayide and Heady (1982), agricultural productivity could also be described as the ratio of the value of total farm output to the value of total input used in farm production. Umeh*et al* (2006) assert that agricultural production means the amount of agricultural production in relation to inputs (land, labour, capital, material and technologies, etc.).

SOCIO-ECONOMIC FACTORS INFLUENCING THE OUTPUT AND PROFITABILITY OF CASSAVA FARMS IN OSUN STATE