

IMPACT OF YAM ENTREPRENEURIAL ACTIVITIES ON LIVELIHOOD OF FARMERS IN EKITI STATE, NIGERIA

BY

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CERTIFICATION

This is to certify that this thesis has been read and approved as meeting the requirements of the Department of Agricultural Extension and Rural Development, University of Ilorin, Ilorin, Nigeria, for the Award of Doctor of Philosophy (Ph.D.) degree in Agricultural Extension.

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DEDICATION

This research is dedicated to Almighty God.

DECLARATION

I, Sola Emmanuel KOMOLAFE, a Ph.D. student in the Department of Agricultural Extension and Rural Development, University of Ilorin, Ilorin, hereby declare that this thesis entitled “Impact of yam entrepreneurial activities on livelihood of farmers in Ekiti State, Nigeria” submitted by me is based on my actual and original work. Any material obtained from other sources or work done by any other persons or institutions have been duly acknowledged. In addition, the research has been approved by the University of Ilorin Ethical Review Committee.

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ABSTRACT

Globally, entrepreneurship skills development is regarded as one of the sustainable ways out of poverty. Hence, agriculture experts have expressed the need for more empirical studies in agricultural entrepreneurship as a necessity for effective agricultural extension policy process that will translate to improved agricultural production enterprises and sustainable livelihood of rural dwellers. Yam farming is widely practiced for livelihood in Ekiti State, therefore this study examined the impact of yam entrepreneurial activities on livelihood of farmers in Ekiti State, Nigeria. The objectives were to: (i) describe the socio-economic characteristics of yam

farmers; (ii) examine the yam entrepreneurial activities of the farmers; (iii) assess the perceived level of influence of yam entrepreneurial activities on access to livelihood assets of farmers; (iv) investigate the knowledge level of yam entrepreneurial skills of farmers; (v) examine the capacity building needs of farmers on yam entrepreneurial skills; and (vi) identify the constraints to yam entrepreneurial activities of farmers.

A two-stage random sampling technique was used to select 640 respondents from the list of contact yam farmers from Ekiti State Agricultural Development Programme (ADP). Ekiti State ADP consists of 16 blocks. First stage involved a random selection of 2 farming communities from each block. Second stage involved a random selection of 20 yam farmers from selected communities making a total sample size of 640. Data were collected through interview schedule. Only 580 of the instrument were retrieved and analysed with both descriptive and inferential statistics including frequency counts and Multiple Regression Analysis at 0.05 level of significance.

The findings of the study were that:

- (i) majority of the respondents (72.8%) were male, 67.5% literates with mean of 30 years of farming experience and average farm net income of ₦3,738,650 per season;
- (ii) yam entrepreneurial activities of respondents were marketing (73.8%), transporting (56.3%) and processing (47.8%);
- (iii) about 98.8% of the respondents had positive attitude towards yam entrepreneurial activities and it was perceived to have medium level of influence on access to livelihood assets (grand mean= 0.44);
- (iv) majority (62.6%) of the respondents had low knowledge level of yam entrepreneurial skills;
- (v) capacity building skills were needed in identifying market opportunities of yam enterprises ($\bar{X}$ =2.66), sourcing for machinery ($\bar{X}$ =1.85), sourcing for fund ($\bar{X}$ =1.75), record keeping ($\bar{X}$ =2.44), planning of tasks ($\bar{X}$ =2.26), risk management ($\bar{X}$ =1.22), and communication and negotiation skills ($\bar{X}$ =2.36);
- (vi) constraints to yam entrepreneurial activities include destruction of yam farms by cattle/herdsmen ($\bar{X}$ =1.45), unstable pricing of yam ($\bar{X}$ =1.14), and frequent illness ($\bar{X}$ =1.13); and
- (vii) participation in yam entrepreneurial activities identified had positive significant ($p \leq 0.05$) impact to respondents' livelihood.

The study concluded that yam entrepreneurial activities had played significant role in accessing livelihood assets among farmers in Ekiti State. It is therefore recommended that extension agents should train yam farmers in the needed areas of entrepreneurial skills such as marketing, sourcing for machinery and risk management.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Entrepreneurship is the ability and willingness of an individual to seek out investment opportunities, establish and run an enterprise successfully (Akanwa and Akpanabia, 2013). Worldwide, entrepreneurship is regarded as a solution to unemployment, poor economic growth and poverty. The benefits of entrepreneurship for growing the economy of rural communities have been broadly stressed. For example, individuals and families could alleviate poverty through positive attitude and skills development in entrepreneurship (Korsching and Allen (2004), this is because entrepreneurship supports wealth and job creation (Igwe, Adebayo, Olakanmi, Ogbonna and Aina, 2013). Surely education and training of entrepreneurial knowledge can advance the economy of a country (Stevenson, 2005). As value chain practices come to be so essential in agriculture, farmers are gradually known as entrepreneurs, need to develop and practice innovative skills and capabilities to remain competitive in the market (McElwee, 2006). Entrepreneurship is a learnable process that can be taught, nurtured, supported and improved through formal or non-formal types of education and training (Williams, 2011).

Agricultural entrepreneurship education and training of innovative opportunity skills is an important factor for sustainable livelihood of farmers (Food and Agricultural Organization [FAO], 2012). The process of becoming more entrepreneurial can be difficult for farmers that operate small farms, but the problem can be overcome through agricultural extension workers. The roles of extension agents to farmers involves the dissemination of information, building capacity through the use of various communication methods, and guide them to make an informed decision (Adekunle, 2013). It has been suggested that extension and rural advisory services (RAS) are so important in presenting the need of farmers as critical towards

sustainable rural development (Christoplos, 2010). In fact, extension organizations should know that farmers would have less gain unless they improve entrepreneurial skills of farmers in the way they manage their farms and the main purpose of production should essentially be for markets and profits (FAO, 2012). Increase knowledge of entrepreneurship skill in handling farm operations as a business where agricultural produce is mainly for market purpose is connected with improved livelihood among farm families (Meert, Van-Huylenbroeck, Bourgeois and Van-Hecke, 2005). It has been suggested that farmers in Nigeria need extension training that provides the foundation for bringing increase entrepreneurial knowledge (Onyebinama and Onyebinama, 2010). Study had also advocated the need for scientists and governments to identify the need for increase entrepreneurial skills in the agricultural activities. Such improvement in entrepreneurial skills of farmers is an essential matter which needs to be addressed by all stakeholders in the agricultural socio-economic linkage (McElwee, 2005).

Agricultural entrepreneurship most especially crops production enterprise activities in Nigeria is an important element of livelihood means among majority of rural dwellers (Jibowo, 1992). Examples of widely cultivated crop are arable crops; maize, cassava, yam, cowpea, rice and cash crop; cocoa, oil palm banana/plantain, rubber, cashew, timber (Fawole and Oladele, 2007).

Yam (*Dioscorea spp*) in Nigeria is one of the main tuber crops cultivated in large quantity. Yam is an essential food with great esteemed because of its high acceptability, sense of palatable taste and traditional use (Amujoyegbe and Bamire, 2005). Southwestern part of Nigeria is one of the major yam producing areas in Nigeria (Philip, Kedinden and Ganiyu, 2006). When boiled, yam can be consumed alone, pounded into a thick paste (pounded yam) or processed into flour. Ekiti state is one of the major contact centres for yam production and marketing in southwestern Nigeria (Awoniyi and Omonona (2006). Among the people of

Ekiti, yam is known to be the foremost and highly admired main food when pounded (Oluwasusi and Tijani, 2013).

Yam cultivation, processing and marketing enterprise activities are one of the major sources of livelihood to farmers in Ekiti (Akanji, Akpokodje and Ogundele, 2003). Employment in yam entrepreneurial activities across the value chain is essential to diversify sources of farm households' livelihood. A working definition of livelihood of individuals/households by this study is stated as the activities, assets/capitals (financial, physical, social, human and natural), capability/competency, and the access to these (intervened by institutions and social affairs) that collectively influence the living gained. (Revised of Department for International Development [DFID] 1999; Ellis 2000). DFID (1999) also noted that livelihood is sustainable when such livelihood can cope with and recover from shocks and stresses, and maintain or enhance its capabilities and capitals, both now and in the future, while still maintaining the natural resource base.

It has been suggested that attitudinal change for sustainable farming entrepreneurship is possible through agricultural extension services by providing awareness and training for the improvement of entrepreneurial skills of rural farmers (Getz, 2003). Greater impact for poverty reduction is expected only when developmental program is implemented in workforce that constitutes majority of people in the society (Hoekman, Michalopoulos, Schiff and Tarr (2001). Incidentally, yam entrepreneurial activities are some of the major means of livelihood for people in Ekiti state.

1.2 Statement of the Problem

One of the greatest threats to mankind globally is poverty. Poverty reduction with increasing access to essential livelihood assets is the most difficult challenge facing any country in the developing world where on the average most of the population is considered poor (Nnadi,

Chikaire, Echetama, Ihenacho and Utazi (2013). Worldwide, extreme poverty continues to be a rural phenomenon where most farmers reside (Anríquez and Stamoulis (2007).

Nwaobi (2003) asserts that Nigeria presents a paradox of a rich nation occupied by poor people. Data that provides evidence to this was released by Nigeria Bureau of Statistics that rated economy of Nigeria as the largest in Africa and the 26th largest in the world (NBS, 2012). The menace of poverty in Nigeria is undisputable information that upshots deprivation, lack of knowledge, underfeeding, disease, unemployment, and lack of access to credit facilities (Abiola and Olaopa, 2008).

In spite of all the plans, policies, programmes and strategies carried out by past governments (Federal, State, Local Governments) and international/non-governmental agencies in Nigeria to alleviate poverty and increase access to livelihood assets, most Nigerians (Ekiti State indigenes inclusive) especially those that lives in the rural areas where crop farming is largely their occupation still record high level of poverty (NBS, 2012). The household assessment of livelihood by NBS precisely indicated Ekiti State as very poor in SouthWestern Nigeria (NBS, (2012). A study in Ekiti had affirmed that rural farming households were poor (Adebo and Ajiboye (2014). Some of the reasons for poor status of farmers in the rural areas include lacks of management and entrepreneurial skills in their farm enterprises (Fawole and Oladele, 2007).

The problems noted aboved were part of what led to past studies ranging from measurement and effect of poverty/livelihood among farmers in Ekiti state by Apata *et al.* (2010) assessed the determinants of poverty among small holder farmers in south-western, Nigeria; Awotide, Kehinde, Peter and Agbola (2010) investigated the poverty and rural livelihood diversification among farming households in southwest Nigeria; Akerele and Adewuyi (2011) analysed the poverty profiles and socioeconomic determinants of welfare among

urban households of Ekiti state, Nigeria; Idowu (2013) examined the poverty profile of rural farm household in southwest Nigeria; Awe (2013) investigates government spending and poverty reduction in Ekiti State, Nigeria; Adebo and Ajiboye (2014) compared poverty among rural and urban farmers in Ekiti and Ondo States; Sekumade and Osundare (2014) examined the determinants and effect of livelihood diversification on farm households in Ekiti State, Nigeria; Opafunso and Okhankhuele (2014) assessed the impact of government intervention projects on poverty alleviation in Ekiti State, Nigeria; Ekumade and Osundare (2014) determined the effect of livelihood diversification on farm households in Ekiti State, Nigeria.

Studies have also been directed at yam farmers in Ekiti state, some of which include Awoniyi and Omonona (2006) that studied the production efficiency in yam based enterprises in Ekiti State, Nigeria; Oluwasusi and Sangotegbe (2012) examined the perception of climate variation among yam farmers in Ekiti State, Nigeria; Oluwasusi and Tijani (2013) investigated farmers adaptation strategies to the effect of climate change on yam production in Ekiti state, Nigeria; Awosusi (2010) examined the problems of bulk-selling yams in harvest and poverty of farmers in Ekiti State, Nigeria; Etim, Thompson and Onyenweaku, (2013) determined the efficiency of yam production among poor farmers in rural Nigeria; Adisa, Adefalu, Olatinwo, Balogun and Ogunmadeko (2015) examined the determinants of post-harvest losses of yam among yam farmers in Ekiti State, Nigeria.

With the growing prominence to empirical studies in agricultural entrepreneurship as a necessity to develop effective agricultural extension policy process that will translate to improved agricultural production enterprise, sustainable livelihood and poverty reduction of farmers in the rural areas globally (DFID 2002; Gibb, 2000), it is unfortunate that none of the above studies provides information on the impact of yam entrepreneurial activities to sustainable livelihood of farmers in Ekiti state which could constitute the cornerstone upon

which agricultural extension programmes and policies can be drawn for sustainable livelihood and hence reduced poverty among yam farmers in Ekiti State.

In addition, Bruton, Ahlstrom and Obloj (2008) had earlier found that investigation on the development of entrepreneurial and managerial competency of farmers is scarce in developing nations. In the light of this research gap, this study seeks to provide answer to the following research questions:

- i. What are the socioeconomic characteristics of yam farmers?
- ii. What are yam entrepreneurs farmers' activities?
- iii. What is respondents' attitude toward yam entrepreneurial activities?
- iv. How has yam entrepreneurial activities contributed to livelihood assets?
- v. What is respondents' knowledge level of yam entrepreneurial skills?
- vi. What are the capacity building needs on yam entrepreneurial skills?
- vii. What are the constraints to sustainable yam entrepreneurial livelihood activities of respondents?

1.3 Objectives of the Study

The general objective of this study was to examine the impact of yam entrepreneurial activities on the livelihood of farmers in Ekiti State, Nigeria. The specific objectives are to:

- (i) describe the socio-economic characteristics of yam farmers,
- (ii) examine yam entrepreneurial activities of farmers,
- (iii) examine farmers' attitude towards yam entrepreneurial activities,
- (iv) assess yam farmers' access to livelihood capitals and assets,
- (v) determine farmers' knowledge level of yam entrepreneurial skills,
- (vi) identify capacity building needs of farmers on yam entrepreneurial skills, and

(vii) investigate constraints to sustainable yam entrepreneurial livelihood activities of farmers.

1.4 Hypotheses of the Study

The following null hypotheses were tested;

HO₁: There is no significant relationship between yam entrepreneurial activities and sustainable access to livelihood assets of respondents.

HO₂: There is no significant relationship between socioeconomic characteristics and capacity building needs of yam farmers.

HO₃: There is no significant relationship between socioeconomic characteristics and attitude towards yam entrepreneurial activities of respondents.

1.5 Significance of the Study

To all problems faced by farmers, many researchers have given their solutions. One among them is farming entrepreneurship skill development. This study suggests the need for more entrepreneurial culture in yam farming activities, and views that the development of entrepreneurial skills of yam farmers is a significant issue to increasingly affect their livelihood, which needs to be a concern for all stakeholders in the agricultural socio-economic system.

The basic idea for this study is that sustainable access to assets requires a yam farming entrepreneurship dimension where resources are innovatively recombined to create value by meeting financial, physical, social, human and natural capitals need of farming communities and thereby provide solution to social problems such as youths unemployment, high rate of rural-urban migration and in general, rural poverty. View of this study on the involvement of yam farmers in all the yam entrepreneurial activities is to champion their involvement in all

yam value chain activities. The promotion of value chains activities among farmers has been viewed as one of the most promising market-orientated approaches that would result in the empowerment of smallholder farmers. It is an approach that focuses on equipping farmers with entrepreneurial skills and knowledge to enable them participate as a co-owner of the value chain, identify profitable yam opportunities, mobilise resources and implement appropriate action in order to access needed assets. Hence, it would be a waste of resources and frustrating to the agricultural extension organizations to design and deliver training on topics and entrepreneurial skills where yam farmers are already able and proficient. Hence, the need for skill gap analysis.

This study would further (i) contribute to knowledge of the roles of yam-based entrepreneurship in the development of sustainable livelihoods of rural people; (ii) recommends some policies and practices that will hopefully lead to increase access to sustainable livelihoods assets of rural farmers in the study area and Nigeria at large. (iii) encourage and strengthens agricultural extension practices that address the holistic needs of yam value chain of rural farmers. (iv) reveal the information and extension training needs of yam entrepreneurs in the study area. This is expected to assist extension organisations in their programme planning for yam farmers in the study area; (v) it may be important and useful for yam farmers as their challenges will be revealed to the extension workers who will provide solution to the pressing needs through technology review meetings, fortnight training, and farm visits and inculcate into farmers the entrepreneurial spirit.

1.6 Scope and Limitations of the Study

Respondents of this study are limited to yam farmers in Ekiti State, Nigeria. Yam farmers for this study are limited to individual yam farmers that are registered (contact yam farmers) of the Ekiti State Agricultural Development Programme (EKSADP), and as such, the list may

exclude some other yam farmers that are not registered with the ADP. The term yam value chain used in this study is limited to cultivation, processing, transporting and marketing activities.

1.7 Operational Definition of Terms and Major Concepts

In this study:

Impact refers to positive or negative influence to accessibility

Yam entrepreneurial activities refer to yam cultivation, processing, transportation, and marketing/distribution activities.

Yam farmers refer to an individual who owns or operates a yam farm

Yam Farmer Entrepreneurs refers to yam farmers who undertake business opportunity in yam entrepreneurial activities in cultivation, processing, and transportation and/or marketing/distribution.

Processing refers to the act of transforming yam tuber into various forms in order to increase its storage life and acceptance by consumers.

Transporting refers to the act of moving yam tubers/processed products from farm/processing point to marketplace.

Marketing refers to selling yam tubers/processed products in the market.

Attitude represent the opinion or feelings that individual farmer has about yam entrepreneurial activities.

Livelihood: refers to sustainable access to capitals and assets, the activities, competency, necessary information and the access to these (mediated by institutions and social relations) that together determine the standard of living by individual yam farmers.

Livelihood capitals refers to resources that can be used to generate economic wealth in yam farming.

Livelihood assets: necessity valuable properties owned, to which a value can be assigned

Accessibility is the right/opportunity to use, manage or control a particular resource for yam cultivation, transporting or processing.

No access means livelihood capital that is not available or affordable to purchase or rent

Restricted access means livelihood capital that is not affordable but available only at purchase/rent in cash or kind.

Free access means livelihood capitals that are owned, affordable for rent and available to borrow for free.

Capacity building Needs: refers to gap between acquired skills and non-acquired skills.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter presents the reviewed related literature in previous studies and reports. There is wide range of entrepreneurship studies related to farming issues found in the literature. For the purpose of this study, related studies and reports were reviewed. Reviewed literature were divided in the following headings: (1) entrepreneurship and entrepreneurs, (2) conceptual issues; rural entrepreneurship, (3) forms of rural entrepreneurship, (4) empirical literatures on farming entrepreneurship, (5) empirical literatures on farming entrepreneurship skill competency, (7) yam farmers entrepreneurs in nigeria, (8) factors affecting rural entrepreneurship, (9) rural entrepreneurship development programmes in nigeria, (10) empirical literatures on impact of government reform programmes, (11) entrepreneurship attitude, (12) conceptual issues; entrepreneurial attitude of farmers, (13) entrepreneurship education and training, (14) roles of agricultural extension in entrepreneurship education and training, (15) literatures on constraints to farming entrepreneurship, (16) empirical literatures on poverty of farmers, (17) theoretical and conceptual framework of the study.

2.1 Entrepreneurship and Entrepreneurs: Conceptual Issues

The word entrepreneurship is derived originated from the French word “*entreprendre*” meaning to undertake, to seek opportunities, to accomplish necessities and desires by novelty; this may comprise running businesses within or without recognized firm. Entrepreneurship is known to have sources from economics and strong relationship with managerial view of enterprises, business growth and business organization (Filion, 1997).

Entrepreneurship viewed from various magnitudes can be described from the view of the roles of an entrepreneur as an imitator, inventor, innovator, or more suitable as a calculated

risk taker (Duru, 2011). Entrepreneurship can as well be defined as the willingness and capability of an entrepreneur to search for investment opportunities, start it and run the enterprise profitably (Akanwa and Akpanabia, 2013). Williams supported this view of definition as he stated that entrepreneurship is a process where persons pursue to practice their talents, energies and resources to start and nurture ventures that take advantage of business opportunities and thus provides value. Such value may include financial status, level of educational, spiritual status, communal and some other value contingent upon the objectives and motivations of the specific organisation. In most cases, working experience of an entrepreneur is a crucial factor in determining the kinds of entrepreneur that person is probably will become (Williams, 2011). It has also been noted that defining and measuring entrepreneurship is associated with a lot of debate about important roles of an entrepreneur (Goetz, Partridge, Deller and Fleming, 2010). Entrepreneurship can be defined as a process which comprises the strength of persons in classifying practicable business prospects in an environment and gaining and managing the assets wasted to achievement the opportunities (Hill and McGowan, 1999). Entrepreneurship as the purpose of being inventive and quick to respond within and around the environment. Entrepreneurship activity is a threatening force, which commences the process of innovative destruction which is the importance of economic growth (Timmons and Spinelli, 2004).

Entrepreneurship process implies starting new venture, have positive attitude and work done by entrepreneurs. Entrepreneurship is based on the process involved in the starting of a newly established business organisation, the attitude of such firm and it works in terms of profits gain (Ogundele and Olayemi, 2004). Entrepreneurship involved the readiness and ability of persons to look for opportunities to invest on and takes such importance of limited resources to use the opportunities gainfully. It is a way of starting new venture with value by allocating the necessary time and energy, supposing the supplementary financial, societal risks at the

end receiving expected gain (Aina and Salako, 2008). Entrepreneurship is the ability to start and manage new venture planned to hunt an exceptional, inventive opportunity and gain steady, profitable growth (Shane and Venkataraman, 2000). Entrepreneurship is defined as, an unprepared grouping of profitable resources prompted by the indeterminate prospect of short-term monopoly gain (Kanothi, 2009). Entrepreneurship requires the act of taking risk, invention, and combination of elements of production in starting new products and services for new and established entrepreneur in human society (Acs and Storey 2004; Minniti and Lévesque, 2008). Entrepreneurship is the progressive process of creating increasing prosperity. This prosperity is created by persons who take the main risks in terms of fairness, time and business commitment of creating value to some products and services. Products and services of entrepreneurship may be unique but value is of necessity to be infused by the entrepreneur by safeguarding and assigning the essential skill and resources (Kuratko, Richard and Hodgetts, 2001).

In existing literature, entrepreneurship has been described and designed in several ways, encompassing a comprehensive range of substitutable meanings and conditions, and as a concept and economic activity is occupied by inconsistencies and associated to conceptual and contextual discussion (Matlay, 2005). The different ranges and shades of meanings include taking of ideas, adapting them into products and, or services and building a business to move the product to market (Johnson, 2002). Risk taking, pro-activity and innovation are important factors for successful entrepreneurship (Dana, 2001).

Social scientist and economist have a different view about entrepreneurship. Sociologist viewed entrepreneurship has being ruled by values of the society and hierarchy status. Characteristics of entrepreneurs include taste of customer, family history, social status, and value system. As viewed by a sociologist, it is assumed that entrepreneurship will succeed in

a society where position drive in the society is dependent on hard work, creativity and respectable performance (Gana, 2001).

From the psychologist point of view, entrepreneurs' qualities from the general population on different personality behaviours including need for achievement, innovation, propensity to take risks, liberation and control. This perception maintained that the inner powers of a person as the ultimate determinant to take risk and adapt innovation. The psychologists have the view that entrepreneurship is gotten about the natural ability of a person to grow innovation.

The economists take into consideration the framework of the economic enticements that are established in the profitable and market environment as significant to the growth of entrepreneurship. This goes hand in hand with the management skills which empower an individual to achieve and obtain economic profit. In the same vein, the economist, further stressed that an entrepreneur is individuals who combine used productive resources, and other assets into groupings that make their value greater than before and also one who introduces changes, innovations and a new order. To psychologists such a person is typically influenced by certain forces, the need to achievement, to investigate, to complete, and to outflow the specialist of others. To a business person, an entrepreneur is a threat, are violent contestant but to another business person, an entrepreneur is an associate, a basis of supply, a buyers, or a person that makes wealth for one another, and also search for means to use our productive resources, minimize waste and provides jobs that others are interested to get (Vesper, 1980).

It has been hard concluding how to define entrepreneurship. It has also been debated that the word entrepreneurship is in three stages of meaning. This as progressive by the view that, in the first stage, entrepreneurship is defined as small industries and business enterprises, in the second stage, it denotes new firm creation, and at the third stage, it involves new ideas and

system-wide management of compound production (Ahmed and McQuaid, 2005). Entrepreneurship is the readiness and the competency of a person/firm/ organisation to find a transforming environment and used the opportunity to produce goods and services for public use (Nwangwu, 2006). In the words of Dangote as stated that entrepreneurship is built on vision, motivation, willpower and standards managerial practices, favourable environment, and access to capitals (Odjegba, 2005). Sidhu and that

Entrepreneurship is the progressive process of making incremental income. This wealth is created by persons who decided the main risks regarding fairness, time and occupation commitment of creating value to products or services. The product or service itself may or may not be new or sole but amount must somehow be infused by the entrepreneur by securing and assigning the essential skill and resources (Kuratko *et al.*, 2001; Kaur 2006; Sathiabama 2010).

Broadly, entrepreneurship entails the willingness to consider calculated risks, both individual (time, intellectual) and financial, and then doing all possible to fulfil ones' goals and objectives. It also entails combining a team of individuals with similar needs and competencies; identifying and acquiring an opportunity where others see disappointment, conflict, and misperception; and mixing and taking over of resources to achieve the opportunity, to ensure that the business does not lack finance when needed. Often time, the entrepreneur needs some particular inputs to commence a business venture, and to actualise a financial business opportunity, either within or without the business.

The idea of entrepreneurship is determined by various activities which include (a) the capability to start and make something from nothing, (b) the ability to conceive vision the is aline with focus and willpower of creating an enterprise, (c) the skill to see an opportunity where others fail to do so. Others are (d) the ability to create a working team to supplement

ones skills and efforts, (e) the ability to combine, organize and regulate resources meaningfully, (f) the willingness and capability of inventiveness and creativity (g) the readiness to undertake personal and financial risks, (h) the ability to participate in activities despite all chances and in fact surmounting these chances and possibly turn them into your own favours. From those above, one can state that entrepreneurship is more than being smart. A person can collaborate with others and to act in the face of new opportunities. While each of these definitions entrepreneurship from a slightly different perspective, each contains similar notions: changes, newness, organising, creating wealth, risk-taking independence employment generation. It entails the possession of key skills and talents; innovativeness and the combination and usage of all these together with an entrepreneurship skill (Unachukwu, 2009).

The selection of the best entrepreneurship definition that is most suitable for the rural area situation, it is essential to consider the entrepreneurial skills that will be needful to advance the value of life for each person, relatives and communities. In maintaining a strong economy and environment, the first definition leaves small room for inventions that are not on the technological and organisational progressively, such as adoption of aged technologies to a developing country background, or entering into export markets now employed by other organisation. Risk-taking view of entrepreneurship disregards other main features of what we usually reflect of as entrepreneurship, such as a well-grown ability to know the unused market opportunities. Stabilization force view of entrepreneurship also limits entrepreneurship to understanding markets imbalances, through entrepreneurship defined as possessing and functioning a business, contradicts the likelihood of entrepreneurial attitude by non-owners, workers and managers who have no fairness stake in the company. Therefore, the most suitable definition of entrepreneurship that would appropriately fit into the rural settings, discussed here, is the wider one, the one which defines entrepreneurship as. A power

that mobilises other resources to fulfil unsatisfied market request, the capability to make and construct business venture from practically nothing, the way of creating such gain by combining special package of inputs to use an opportunity. It is a pool definition of entrepreneurship (Timmons, 1994).

The dictionary meaning of entrepreneur is an individual who takes business enterprise by organising, managing, and take moderate risks. Thus, the entrepreneur is someone who acts to achieve, to make product and or services. As a result, the entrepreneur intrudes the *current situation* and may, therefore, be considered as a change agent. In such ability, he/she does not just labour for him/herself in a small firm but may be hired in a big organisation (Kirby, 2002).

In modest terms, the entrepreneur is defined as persons with the potential to create a vision to provide goods and services from virtually nothing (Antonites, 2003). According to Drucker (1985), 'most of what you hear about entrepreneurship is all wrong. It is magical, it is not secretive; and has no genes connection. It is a matter of discipline and, like any discipline, it can be learned.' Basu (2004) proposed that entrepreneurs always had ambitions not the same to those of people everywhere. Other individual features that supposedly distinguish entrepreneurship from business holder manager include inventiveness, a readiness to take risks, self-assurance, determination, imagination, independence, influence, tolerance for doubt and ambiguity (i.e. seeing vague situations as encounters rather than as problematics). Others are imagination, high need for accomplishment, and a strong trust in being in switch of one's own purpose (Ibrahim and Soufani, 2002; Llewellyn and Wilson, 2003; Deamer and Earle 2004). Acs and Szerb (2007) noted that entrepreneurship spins around the understanding of the reality of opportunities in mixture with the decision to commercialise them by beginning a new organisation. Entrepreneurs are viewed differently by economists, psychologist, business persons and political figure, and entrepreneurs characteristics can also

be described as being innovative and inventive, possessing the ability to accommodate risk, managing the unknown, creating wealth; and struggle for independence (Ramme, 2000).

2.2 Rural Entrepreneurship: Conceptual Issues

Rural entrepreneurship is an essential fundamental of rural economic growth. Rural entrepreneurship can be defined as creating new employment opportunities in rural areas, via the generation of new business ventures (Stathopoulos *et al.* 2004). A broader definition viewed rural entrepreneurship is the formation of a new business organisation that presents new good and services, functions or makes a fresh market or uses a new knowledge in a rural location (Osuagwu, 2006). Specifically, entrepreneurship in rural parts includes broadening the scope of a farm business to contain all the non-agricultural uses that existing resources can be ventured into or through any main variations in land usage and production level excluding those related exclusively to agriculture (Ahmad *et al.* (2011).

From the above viewpoint, rural entrepreneurs may be viewed persons resides in rural places and add to the formation of local wealth with focus on farming or other areas that relate to natural resources. Although, a popular knowledge of a rural entrepreneur is that of the individual that is independent, take risk, orientation of achievement, self-confident, optimistic, hardworking and innovative (Degei and Martin, 2009). Specifically, Stathopoulos grouped rural entrepreneurship development into three phases; conceptual development; awareness in which entrepreneurs aware of the opportunities; and operational phase is the actual business operations (Stathopoulos *et al.* 2004). The above definitions imply that rural entrepreneurs are the person who undergoes entrepreneurship development in rural area and at the same time they can adapt any changing of environment.

There exists consistent growing of literature on findings on entrepreneurship in the rural area. Study had supported the hypothesis that there is a positive relationship between governance,

rural entrepreneurship and rural development, where goal driven policy, explicit support and efficient law agenda play an essential role (Volk, 2008). Some findings proved that long-time residents have a tendency to commence businesses with emphasis on techniques, arts and other products that are centered on local customs. This is against in-migrants who can use their influences with the ‘outside’ world to exploit on products and services not specific in the local market (Kalantaridis and Bika, 2006).

2.3 Forms of Rural Entrepreneurship

A. Farm Entrepreneurship

Several farm entrepreneurship related definitions have emerged. First, farmers are described as individuals partaking either in part or full-time basis in a different sector of agricultural activities. Farmers are mainly dependent on the farm as their primary source of livelihood. Farmers are engaged in agriculture practices of cultivating the soil, growing crops and raising livestock (McElwee (2004). Recognising farmers as entrepreneurs requires one to seek their opinion that is if farmers see themselves as being an entrepreneur (Vesala and Peura (2002) and Peura *et al.* 2002).

The way entrepreneurship is being described in agriculture has taken a new dimension over the years. Previously, being a good entrepreneur was means being a good craftsman while striving for a high level of production and product quality and making efficient use of inputs (labour, nutrients, crop protection and energy) (De Lauwere, Verhaar and Drost, 2002). Entrepreneurship has come to be one of the main aspects of farming and will evermore continue to be. Several of the efforts to build sustainable rural livelihoods involve moving away from agriculture’s old-style fundamental activities using having a specialization with new on-farm activities or conversion to quality methods of production. The question of how

the function of enterprises that are known to be part of farms in the procedure of rural development (van der Ploeg, 2008).

it is likely to make a distinction between five categories of entrepreneur-farmers. The existing group include cost-effective entrepreneurs, entrepreneurs on a social basis, old-style farmer entrepreneurs, new growers farmer entrepreneurs, and doubtful farmers entrepreneurs. A study of farmers that attempted to examine factors offered farmers a competitive advantage over one another outlined that characteristics of a successful farm and farmer are as follows:

i. Economic production influenced by non-stop monitoring of production, incomes and expenses, ii. Continuous growing of reasoning and professional skills, iii. Farmers entrepreneur that have trust in agricultural activities and are prepared to work hard have a better advantage, iv. Goal-focused on operation (the capability to set objectives, to accomplish them and to set new ones, v. adoption of innovative information related to the farmers' situation and needs, vi. Suitable point of start of the farm enterprise, implying excellent condition of farm machinery, adequate buildings, adequate land and proper ratio between valuing of the farm and investments in farm production, and vii. Use of co-operative or association group (Kallio and Kola, 1999).

In a study that examined factors of entrepreneurial uniqueness in over two thousand farm businesses. The study compared three groups: on-farm business diversifiers, conventional farmers and non-farm rural entrepreneurs along nine dimensions of entrepreneurial identity. The study revealed that only two aspects— economic utility and own independence—did not differentiate the groups from each other, i.e., these values were equally important for all of them. Major findings concerning the group of Finnish business diversifiers imply that they seem to have quite a strong entrepreneurial identity; they see themselves as growth-oriented, prone to risk-taking, innovative and have faith in the success of their enterprise. The agriculture sector comprises of a lot of activities ranging from crops, livestock to fisheries. It

is still seen as a sector which is expected to offer many job opportunities (Vesala and Peura, 2002). In another region of the world, agriculture sector covers a broad array of companies such as animal, non-food processing, fisheries, food processing, plantation, farming and many more (Silva *et al.* (2010))

The other aspect of agriculture entrepreneurship is the management strategies employed by agricultural businesses in response to the structural changes in the farm sector (Man *et al.*, 2002). These strategies are specialisation, diversification, and supplementation. For Dollinger (2003), entrepreneurship is the creation of an innovative economic organisation (or network of organisations) for gain or growth under conditions of risk and uncertainty. This definition, however, assumes that all farmers are engaged in the farm business for financial gain or growth, and this is not the case. Schiebel (2002) showed that successful entrepreneurs differ regarding three personality traits. Locus of control of emphasis (trust in the capability to control project), Problem-solving skills and social initiative is expressed through a person's dominance, liveliness, social boldness and abstractedness.

The role of agro-enterprise in poverty alleviation has long been recognised as vital, and promotion of small and micro- enterprises for women has been realized as a critical factor augmenting family welfare (OECD, 2006). Investments in agro-enterprise for income generating activity are essential and a step in the right way to uplift the lives of farming communities. Rising productive base or capacity can improve farmers' income and decrease food price and make food accessible to women farmer to make ends meet. Agricultural enterprises for income generating activities focus on the group at the producer level and individual actors that provide services within the group (Lundy *et al.*, 2004). Asefa (2007) suggests that agro-enterprises do benefits women groups from broadening their network through information dissemination and strengthening their existing relations with other actors in the supply chain. This will help women groups in responding to markets by changing or

improving what they have produced, cost of agricultural production, and to realise profit more quickly (Santacolomba and Riveros, 2004). Essentially, agrarian enterprise activity furnishes vital inputs and services to the agricultural sector, increasing on cost competitiveness, quality and security of its products, to assist farmers to integrate their operations among other farmers. Also, agro-enterprises engaged in value-added products might also benefit from the increased attractiveness of food products grown under eco-friendly management systems identified with a farm or rural community (Best, 2003). Promoting agro-enterprise and small business increasingly seen as a tool for generating meaningful and sustainable employment opportunities particularly for those at the margins of the economy such as women, the poor and people with disabilities. Therefore, rural agro-enterprise approach will continue to play a supporting role in improving the household economy, using profits to meet household necessities and amusements.

According to Adebayo and Okuneye (2005), the importance of agricultural sector is more pronounced in developing countries like Nigeria, where it is the main thrust of national survival, employment, income and food. Agriculture can contribute significantly to poverty reduction in a country. This is because of its direct link with income generation among the rural poor whose sources of income are mainly from agricultural production. Through agricultural extension its effect on the purchasing power of the urban poor who depends on food from agriculture and tend to spend a substantial proportion of their income earned from non-agricultural sources on food coming from the agricultural output. The implication is that poverty reduction in a country depends largely on per capita gross domestic product from agricultural and non- agricultural sectors of the economy.

Some authors in a paper produced by DFID (2004) classified the correlation between agriculture and poverty reduction into four specific areas; improved income, cheaper food, creating opportunity in non-agricultural sector and stimulating economic transition from

agricultural base to industrial and services support. They stressed further that the potential for poverty reduction through the four areas depends mostly on the ability of a country to achieve an increase in agricultural productivity.

The reports by World Bank (2007) stressed that agriculture contributes more significantly to economic growth and poverty reduction in most countries in Sub-Saharan Africa as compared to non-agricultural sector since the poor are concentrated in rural areas. As a result, the critical policy agenda in these countries is to enable agriculture serves as an engine of growth and poverty reduction. Although, countries in Sub-Saharan Africa such as Nigeria are characterised majorly by poor resource-based agriculture, predominantly dominated by small farm holdings, fragile soils, rain-dependent, minimum inputs and poor yield. Hence, with these characteristics, there is a direct link of these countries' agriculture to poverty issue.

World Bank, (2007) report that bringing about sustainable development require emphasis on agricultural extension as an essential development intervention and knowledge transfer strategy for increasing the growth potential of agricultural sector. The focus should be on facing of rising demand and supply-side pressures and for promoting sustainable development, growth and agriculturally induced poverty reduction particularly in developing economies such as Nigeria. Agricultural extension, therefore, is one of the leading institutional components of agriculture that promotes the effective transfer and exchange of information and knowledge that can be converted into functional use for agricultural growth and poverty reduction.

According to Anderson and Feder (2003), agricultural extension is the instrument which is helpful in developing enterprises that promote productivity and generate income in the present scenario of change, which can maximally reduce poverty in both growing and developed counties.

Sustainable development in agriculture necessitates the development of the entrepreneurial and organisational competency of farmers. In some countries of the European Union, researchers have taken on the study of investigating the factors and educational approaches, that affect the development of entrepreneurial skills of farmers with the aim of bringing successful growth in the agricultural sector (Pyysiäinen *et al.*, 2006). Increasing productivity to ensure farmers' survival as well as the improvement of their environment (Marsden and Smith, 2005). Surprisingly, the function of entrepreneurship in economic growth has enticed less professional interest than the function of other factors, includes the accumulation of physical capital, increase of the labour force, Rural Development, technological progress and education in Nigeria (Okezie *et al.*, 2013).

2.4 Types of Enterprises in Agriculture

While promoting rural agro-entrepreneurship, this study may consider different types of enterprises. i. **Farm as Producers:** At the individual family stage, each farm is to be regarded as an enterprise, to maximise the production by making increase use of the technology, inputs and demand in the market. (ii) **Service Providers:** For optimising agriculture by every family enterprise, there are several types of services needed at the village level. These comprise the input procurement and sharing, hiring of implements and tools like harvesters, tractors, seed drills, dryers, sprayers and technical advisory services. Advisory services may include the installation of irrigation facilities, weed control, transportation, plant protection, harvesting and storage. Related opportunities are present in the livestock husbandry sector of agriculture for the distribution of disease diagnostic, breeding, vaccination, and treatment services, separately from sharing of cattle feed, mineral mixture, forage seeds, etc. (iii) **Input Producers:** There are many prosperous enterprises, which require critical inputs. Some of such resources which can be made available by the local

entrepreneurs at the village level are biofertilizers, vermicompost, biopesticides, soil amendments, plants of various species of fruits, ornamentals, root media for raising plants in pots, agricultural tools, irrigation accessories, production of cattle feed concentrate, mineral mixture and complete feed. There are excellent opportunities to support sericulture, fishery and poultry as well, through the promotion of critical service facilities in rural areas. (iv)

Marketing and Processing farm produce: Effective management of post-production activities needs a greater scale of innovation and venture. Enterprises can be controlled by organisations of people, moreover in the kind of cooperatives, service citizens or combined stock firms. The greatest kind of successful ones are the farmers cooperative of different specialization. However, the achievement of such business is the only dependence on the trust and competence of the manager influencing the process. Successful business also need good expert support for supervising the activities as a modest business and to finish well with other partners in the market, majorly the middlemen and retail businessmen (Hedge, 2005).

2.5 Successful/unsuccessful farming entrepreneurship

McElwee (2005) is of the view that over the years the definition of entrepreneurship in agriculture has changed. A good entrepreneur in the past was synonymous with being a good craftsman while striving for a high level of production and product quality, and the efficient use of inputs. A study by McElwee (2005) in South-East Finland suggests that the business of rural entrepreneurs active in food processing, wood processing and tourism aimed at exploring factors that influence start-up and success of enterprises in the rural areas. This view supports the stereotype that entrepreneurship could only be associated with craftsmanship.

A successful entrepreneur was discerned from one that is not successful by the reasons to start a business. These were subjective evaluations of both researchers“ and entrepreneurs“ based on the income derived from the market. Hashemi *et al.* (2012) suggest assessing the

contribution of entrepreneurship to economic development by creating employment activities, innovation and creativity. It is by their very nature and characteristics that entrepreneurs are creators of wealth in any economy, therefore, suggests that high return on investment is a crucial factor to be considered if they are to be successful. It is not surprising that other studies like Hashemi *et al.* (2012) found that successful entrepreneurs were motivated by market-related factors. Such factors include demand, favourable location and recognition of a market niche, while unsuccessful entrepreneurs were motivated by income-related factors such as unemployment, need for compensating income and factors relating to health. The major distinction between the two group was that the former appeared to benefit from favourable external circumstances related to product demand, while the latter seemed to have started the business because of external pressures. Empirical studies show that labour market experience, management experience and indeed previous entrepreneurial experience all impact strongly on entrepreneurial success (Block and Sandner, 2006).

Kirzner (1973) provides the best analysis of the role of the entrepreneur in the market process. Kirzner (1973) argues that market equilibrium is a theoretical abstraction that is reached when all buyers and sellers decisions are dovetailed. If however, it is assumed that there is a certain level of ignorance either based on lack of education or technology, as we have here with black agricultural entrepreneurs because of unjust historical past, a competitive process will be expected to transpire in which buyers and sellers continually revise their positions in search of greater returns. Opportunities for the above-normal profits exist because of the fundamental ignorance of market participants, but there are opportunities and benefits, which are pursued for. Kirzner (1973) postulates that market opportunities are not static so that competing for the profit becomes a never-ending cycle.

Kirzner (1973) emphasises that entrepreneurship is a function, so the entrepreneur is any individual who carries out this function of risk-taking for a high return on investment.

Entrepreneurship essentially becomes the driver of the market process, for without it no progress is made towards the bridging or dovetailing of supply and demand.

With regards to farming entrepreneurs, five groups of farmers are grouped as economic entrepreneurs, socially responsible entrepreneurs, traditional growers, new growers, and doubting entrepreneurs (Kirzner, 1973). Another study of farmers in Finland, by Kallio and Kola (1999), sought to determine factors that gave farmers competitive advantage and suggested the following characteristics of a thriving farm and farmer:

- Profitable production linked to continuous follow-up in output, incomes and expenditures (proper finance management);
- Constant development of cognitive and professional skills (education, skill development);
- Strong self-belief and readiness to work hard (commitment);
- Having goal-orientated operations (proper planning);
- Using up-to-date information relevant to the farmers' circumstances and needs;
- The favourable starting point for the enterprise – good condition of machinery, buildings, and land; appropriate proportion between the pricing of the farm and investments in production; and
- The use of corporation (team building/work).

Locus of control of reinforcement – belief in the ability to control events, problem-solving capabilities and social initiative – was shown by Schiebel (2005) to be the success determinants that prosperous entrepreneurs have. In a study of weakness in entrepreneurship, seven significant success factors were noted. They are management and strategic planning, staff, chain perspective craftsmanship, ecosystem, search and learned behaviour, and personal characteristics (McElwee, 2005).

2.6 Empirical Literatures on Farming Entrepreneurship

FAO (2012) in a document on “understanding entrepreneurship in farming” written by David Kahan, highlighted that:

- ❖ Entrepreneurship is the main reason for the continued existence of small-holder farmers in an ever-shifting and growing multifaceted worldwide economy.
- ❖ An entrepreneur is somebody that produced for the sales in the market and always seeking for opportunities to advance and extend farmers enterprises. An entrepreneur is willing to take moderate risks, and take responsibility for both losses and gain. An entrepreneur is zealous for advancing their business venture and is always seeking for fresh innovative opportunities.
- ❖ Farmer-entrepreneurs view their farms as a business. Farmers in this category take the farming business to earn a profit. They are often zealous about farming business and are ready to take moderate risks to run their farms for business growth and profit.
- ❖ Farmer-entrepreneurs operate in multifaceted and vibrant environs. They are part of a larger gathering of farmers comprising other farmers, suppliers, traders, transporters, processors and many others. Each of these entrepreneurs has an important function to produce products and taking the entrepreneurs via market and value chain.
- ❖ The FAO document further questioned that, can smallholder farmers become entrepreneurs? Yes. Small-scale farmers worldwide have proven an outstanding capability to adjust. Entrepreneur farmers seek for better means of organising their farming activities. They often adopt new crop seeds and cultivars, improve animals, and advanced technologies to increase productivity, expand production, minimise risk and increase gain. Such farmers have come to be additional market-oriented and have

been aware to take risks at a moderate level to start new markets and to sell their agricultural produce. Most of the smallholder entrepreneur farmers have various qualities of an entrepreneur.

- ❖ The document affirmed that for small-scale farmers to become more ‘entrepreneurial’ helps from extension workers and supporting institutions is needful.
- ❖ Successful farmer-entrepreneurs are technically knowledgeable, innovative and plan so they can direct their farm businesses through the stages of enterprise development.
- ❖ Also, growing farm enterprise as a business can occur in five phases, namely establishment, survival, early growth, rapid growth and maturity.
- ❖ A series of challenges must be minimized to start and sustain an encouraging environment for agri-entrepreneurship. Such environment includes poor or absent infrastructure, unfavourable government laws and regulations, dearth of financial assistant, social constraints, absence of training equipment, lack of helpful services and skilled extension staff, and poor market orientation.
- ❖ Some significant constraints facing smallholder farmer-entrepreneurs include lack of market, access to capital, information, low bargaining-power, susceptibility to financial shocks, and absence of agri-entrepreneurial training.
- ❖ Entrepreneurial farmers need the entrepreneurship skills to effectively run farms businesses to make a profit, devote profits again into the agri-business and look for long-term improvement.
- ❖ Extension officers also need to be questioned to clarify precisely what training the farmers-entrepreneurs need and what approaches and strategies of extension implementation that will work best. Extension workers need to be educated of the

status of farmers in the entrepreneurial ladder for them to effectively design extension programmes that equal the farmers' ability and advance the entrepreneurial skills.

- ❖ Farmer-entrepreneurs should be skilful at seeking and adopting new farming innovative opportunities to expand their agri-businesses. Farmer-entrepreneurs also need the skill for efficient utilisation of agricultural resources and abilities in transporting and marketing agricultural produce.

Emerole, Dorcas and Kelechi (2014) studied what influence the choice of a graduate in agri-business in Abia state, Nigeria and found that age, access to credit and engagement status had positively influenced to decide to engage in entrepreneurship in agricultural. Findings Raman *et al.* (2014) evaluated the use of agri-technology for entrepreneurship and found that early reception of interceded change to entrepreneurs whereby increasing farmers' skill, attitude and knowledge. Esiobu, Onubuogu and Ibe (2015) studied the development of agri-entrepreneurship in arable crop among farmers in Imo State and found that practical percentage of the farmers recognised private intention, wanting independence and dislocation in life as the primary determinant to entrepreneurship improvement in the region. Entrepreneurship enterprises were reported to be invaluable to farmers in the area. However, farmers complained of poor access to entrepreneurship information, low start-up capital and long distance between farms and market in the area. Regardless of this inadequacies farmers professed to be entrepreneurship motivation and involvement has been great. The findings suggested that active and satisfactory entrepreneurship programmes and policies should be established for farmers while immediately addressing the unfavourable factors that obstruct its progress and improvement in the area. Promotion entrepreneurship education at very points to guarantee capability for various enterprises in farming was similarly encouraged.

Participation in agricultural enterprises has a relationship with marital status, age, gender, family size, primary occupation, farm size and educational level of youth with a shortage of agro-resources as their main challenges in Adamawa in Nigeria (Gwary, Kwaghe, Ja'afar-Furo and Dennis, 2011). Use of active farming entrepreneurial processes is supported by diffident communication skills and solid confidence in one's personality to be successful. Prosperous farmers had various means of linking to income generation enterprises and directing the entrepreneurs for backing could make have better effectiveness (Apata, 2015). The entrepreneurial skills required for secondary school graduates to succeed in cocoa production include skills for effective planning, management, production farm level processing and marketing in coco production (Okeme, Alawa and Akwagiobe, 2014).

Survey of the effect of risk attitude of agri-entrepreneurs in Ogun state. The study shows that only one agri-preneurs farmer insured his farm while few was aware of the activities of the Nigerian Agricultural Insurance Company (NAIC) and that risk attitude has no influence on the level of poverty of farmers, but a straight association between the two was noted (Ajijola, Egbetokun and Ogunbayo, 2011). Agri-entrepreneurs in Malaysia learned agricultural practices from their parents and inner instinct, and one of them had influenced by their immediate situations. They were expert in their field, business inclined, and very devoted to their business undertaking. All farmers adopted the use of technology in applying in cultivating crops. The study showed quick receipt of intermediated change to agri-entrepreneurs whereby advancing their knowledge. Hence, entrepreneurship traits displayed in them are planning and aim, years of farming experience, a conviction in their personal ability, and endurance to advance businesses in farming. This study shows farmer can succeed in doing agri-business endeavour through the willingness, focus on achievement and profit (Abdul, Asmuni, Idris, Saad and Azmin, 2014).

Only a few indigenous crop farmers in Kenya are involved in entrepreneurial activities involving cassava, selling only the raw tubers. Among the approaches being followed to attain this objective is agribusiness development through strong point being the small scale of Kenya farmers of entrepreneurial ability and elevation of indigenous crops production and utilisation. The study suggested that for farmers to promote food surplus, a market-oriented strategy that focuses on enabling farmers for the entrepreneurial exploit is of important (Milcah, Mulu-Mutuku, Dolphine, Odero-Wanga, Adijah, Ali-Olubandwa, Joyce and Amos, 2013). Causes affecting feeling for agri-entrepreneurship of students in agricultural institutes were social significance, personal norm, social attitude, closer estimate and professed interactive control (Abdullah and Samah, 2014).

It has been argued that entrepreneurship is far beyond management practices, but prosperous venture requires effective managerial capabilities. The variance rested in the originality in starting new investments; the opportunity sensitivity, the growth of thoughts into viable opportunities and combining business resources (Anderson and Jack, 2000). The study had also stated that different financial means, favourable culture, entrepreneurial linkages and helpful, active general support were main factors that look to be significant for entrepreneurial activity (Pages and Markley, 2004).

2.7 Entrepreneurial Skills and Competency

The skill needed by entrepreneur can be grouped into three main parts which including i. Technical skills, ii. business management, and iii personal entrepreneurial skills. Technical skills consist of writing, listening, oral presentation, organizing, coaching, being a team player, and technical know-how. Business management skills include those areas involved in starting, developing and managing an enterprise. The personal entrepreneurial skills differentiate an entrepreneur from a manager. Skills covered in this classification are inward

control (discipline), risk-taking, innovativeness, change-orientation, persistence, and visionary leader among others (Osuagwu, 2006).

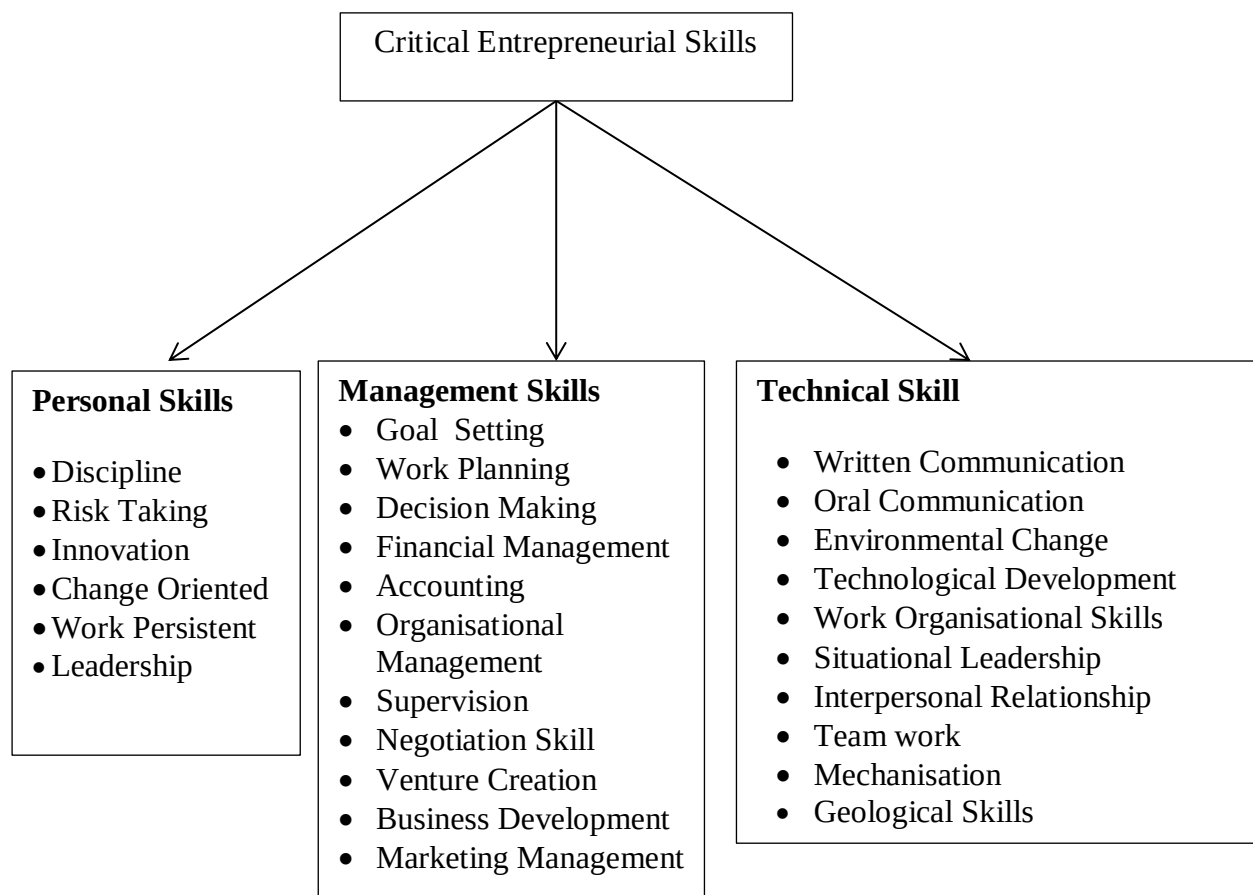


Figure 1: Three dimensions of critical entrepreneurial skills
(Kuratko and Hodgetts, 2001)

Competency has been defined to cover clusters of abilities, skills, knowledge, and attitude required for a person to make gain (Davis, Naughton, and Rothwell, 2004). Sarwoko, Surachman, Armanu, Hadiwidjojo (2013) defined entrepreneurial competency as the individual characteristics including attitude and behaviour, which allow the entrepreneur to achieve business success.

Entrepreneurial ability is a set of advanced-level characteristics including knowledge, personality traits and skills. They can be seen as the aggregate capacity of the entrepreneur to do his role successfully (Man, Lau and Chan, 2002). Moreover, Kiggundy (2002) noted that entrepreneurial competency is the total of the entrepreneur's necessary attributes for successful and sustainable entrepreneurship, including attitudes, values, beliefs, knowledge, skills, abilities, personality, wisdom, expertise (social, technical, managerial), mindset and behavioural tendencies.

According to Bird (1995), competencies are seen as behavioural and observable but only partly intrapsychic characteristics of an entrepreneur. Consequently, skills are changeable and learnable, allowing intervention regarding the selection, training and development of entrepreneurship. Man *et al.* (2002), identified six major areas of entrepreneurial competencies about an SME context, including opportunity, relationship, conceptual, organising, strategic, and commitment competencies. These competencies are supposed to play different roles in affecting an SME's performance with their direct and indirect effects.

Inyang and Enuoh (2009) analysed nine areas of entrepreneurial competencies which they suggested as the missing link to successful entrepreneurship in Nigeria. These are time management, communication, human resources management, marketing management, business ethics, social responsibility, leadership, decision making and financial management.

2.8 Entrepreneurial opportunity and Innovation

The concept of entrepreneurial opportunity is core to entrepreneurship, like the ability to identify and select viable opportunities is essential to entrepreneurial success (Shane & Venkataraman, 2000; Phelan and Sharpley, 2012). The field of entrepreneurship is referred to 'as a scholarly examination of how, by whom, and with what effects opportunities to create future [products] are discovered, evaluated and exploited' (Shane and Venkataraman, 2000).

Therefore, the field of entrepreneurship encompasses studying sources of opportunities, which involves the processes of discovery, evaluation, exploitation and the set of individuals who perform these three tasks (Shane and Venkataraman, 2000).

An opportunity has been defined in different contexts. Sarasvathy, *et al.* (2010) explain an opportunity is any possibility of combining resources to better utilisation. McMullen, Plummer and Acs (2007) also stated that business opportunities are often an opening to do something and are, therefore, strategies to an end [and] these ends are often mean themselves. More specifically, Ardichvili *et al.* (2003) stated an opportunity [as] the chance to meet a market need ... through a creative combination of input resources to deliver superior value.

A similar theme is developed by Shane and Venkataraman (2000) who, describe entrepreneurial opportunities as ‘situations in which new [products], raw materials and organising methods can be introduced and sold at greater than their cost of production’. Entrepreneurial opportunities are linked to concepts such as innovation, information about markets and resources, information asymmetries, and information diffusion (Vaghely and Julien, 2010).

Although profitable entrepreneurial opportunity may exist, individuals can enjoy the profit associated with such a chance only if they can establish the existence of such an opportunity and its accompanying value (Shane and Venkataraman, 2000). To identify entrepreneurial opportunities requires critical observation and analysis since opportunities are not immediately evident to all people all the time.

It has been debated that the capability to identify entrepreneurial opportunities is largely determined by the ‘stock of information’, unique to individuals, which serves as the ‘framework for recognising new information’ (Shane and Venkataraman, 2000). Consequently, prior knowledge of individuals creates a ‘knowledge corridor’ (Ardichvili *et*

al., 2003) which offers them the chance to recognise a particular opportunities (Ardichvili *et al.*, 2003). Hence, as noted above, differences exist amongst people in society regarding specific information that could enhance opportunity recognition. Therefore, people recognise information that is related to information they already are familiar with (Ardichvili *et al.*, 2003). It is, therefore, noted that the utilisation of prior knowledge in the entrepreneurial discovery process involves three dimensions or, more precisely, three forms of knowledge, namely, prior knowledge of markets, knowledge of ways to serve markets, and knowledge of customer problems (Ardichvili *et al.*, 2003). There are two types of prior knowledge as relevant in the opportunity identification process. First, there is knowledge in an area of special interest to an entrepreneur, described as ‘fascination and fun’ (Ardichvili *et al.*, 2003). Consequently, the entrepreneur is encouraged to devote much time and effort to develop the skills to become knowledgeable in these areas. The second is about the long-term accumulation of knowledge acquired from previous work and experiences which are not linked to the first domain of fun and fascination but based on ‘a rational choice often on the advice of other people’ (Ardichvili *et al.*, 2003). The claim is that when these two are combined, they facilitate the discovery of new opportunities, markets or solutions to solving customer’s problems (Ardichvili *et al.*, 2003). This view of prior knowledge differs from the cognitive properties perspective.

Shane and Venkataraman (2000) observe that not all identified entrepreneurial opportunities are exploited, primarily owing to the nature of the opportunity and the differences between individuals. In this regard, entrepreneurial knowledge and skills are critical for opportunity recognition and exploitation (Asitik, 2015). They provide the ability to recognise and assess valuable opportunities and motivate people to exploit such an opportunity. Arguably, opportunities with greater value are those that are perceived to earn potentially higher entrepreneurial profits sufficient to compensate for any forgone alternative. However, it is the

nature of the opportunity that counts. For example, a high-value opportunity that requires a level of investment that the entrepreneur lacks is unlikely to be exploited (Shane and Venkataraman, 2000).

Agricultural entrepreneurs are oriented to a specific industry and sector, which implies, among other things that they should be committed to innovation and must be at the heart of their strategic management process (Kuratko and Audretsch, 2009). In this regard, Collis and Montgomery (2005) argue that a consistent flow of expenditure needs to be directed towards innovation to ensure acceptable long-term levels of strategic intellectual stock that can provide a sustainable competitive advantage to successful agribusiness. Terminating change as vital input and effort during bad times may have the consequence of promising initiatives within agribusiness being cut off (Wolpert, 2002).

Knudson *et al.* (2004) argued in favour of public support for fostering innovation and entrepreneurial activity in the agricultural sector to see a shift in focus from a traditional commodity-orientated activity to one that is customer-orientated.

According to Knudson *et al.*, (2004), innovation is defined as:

“The introduction of new quality of a good, the introduction of a new method of production, the opening of a new market, the acquisition of a new source of raw material or the carrying out of an alteration of an existing industry structure”. He posited that innovation and the entrepreneur are central to economic growth and development and that change introduced by the entrepreneur is a source of creative disequilibrium, which forces less qualified firms out of business as firms adopt the innovation until a new equilibrium is reached (Schumpeter, 1961). This is one primary school of thought in economics concerning innovation and entrepreneurship.

Under the Austrian school of thought, theorists emphasise the entrepreneurs' ability to take advantage of imperfections in information to make innovations (Knudson *et al.*, 2004). This is explained by the use of superior details by the entrepreneur to introduce an innovation that earns profits. Hence, it increases the amount of knowledge in the market, thus moving it towards a new equilibrium.

According to Knudson *et al.* (2004), in theory, entrepreneurship and innovation interact to form a grid with four different possibilities namely:

[1] *Master entrepreneurs* are skilled managers and risk bearers but not innovators. They see market gaps and fill them with existing business models, products and services such as privately held grain merchandising firms and food manufacturers. Entrepreneurial in approach they lack innovation as they follow corporate guidelines and make the most out of given resources.

[2] *Master innovators* are skilled innovators, but not entrepreneurs. Although they see market gaps, they are not driven to take new ideas to the market despite developing new business models, products and processes.

[3] *Innovative entrepreneurs* are skilled entrepreneurs; they are also innovators in that they portray primary entrepreneur traits first then secondary innovator traits. They seek for a new approach to performing a task and are not content to use tried business models, products and processes. Driven to improve these products and processes they aim to carve out a niche in the marketplace.

[4] *Entrepreneurial innovators* are skilled innovators that are also entrepreneurs. They portray primary innovator and secondary entrepreneur traits. Seeking out change, they are driven to take risks that see their innovation reach the marketplace. They fill market gaps

with new business models, products and processes that they are willing to take personally to the marketplace (Knudson *et al.*, 2004).

With caution, Knudson *et al.* (2004) add the existence of a useful entrepreneurial/innovation type or a mix of classes may be necessary for entrepreneurship and innovation to take shape in a particular situation, but it is not likely sufficient". Individuals are not expected to be stuck in one type, as firms that are flexible enough can switch between categories. Capabilities required in addition to necessary training depend on which of the types an individual [enterprise] falls into most naturally (Knudson *et al.*, 2004). What kind of strategies would black South African farmers, who fall into these segments, require to succeed? In what kind of environment are they operating? Are there barriers confronting farmers in their situations? A problem is defined as a political, economic, social, technical or personal phenomenon that poses a restriction, either temporarily or indefinitely, on the capacity of the farmer to develop the business, (McElwee, 2005). Also, specific potential barriers to the development of the farm enterprise include:

- Economies of scale;
- Capital requirements of entry;
- Access to distribution channel;
- Position on the experience curve;
- A reprisal of known businesses to a new entrant in the market;
- Legislation and regulation;
- Poor management skills of farmers;
- Lack of entrepreneurial spirit;
- Limited access to business support; and
- Geography and proximity to markets.

Other barriers to the growth of business put forward by McElwee (2005) can be found in farmers themselves:

- Level of education;
- Readiness to cooperate;
- Poor and inconsistent advice;
- The utilisation of minimal category of trusted advisors; and
- Lack of use of social networks for financial information.

Entrepreneurial identity was explored in Finland by Vesala, Peura and McElwee (2007) and compared on-farm business diversifiers, conventional farmers, and non-farm rural entrepreneurs, using nine dimensions of entrepreneurial identity. The study revealed that two aspects, namely economic utility and own independence, were equally important for all Finnish groups. Significant findings of the group of business diversifiers suggest as a likely consequence that they have a robust entrepreneurial identity, see themselves as growth orientated, prone to taking risks, innovative and have faith in the success of their enterprise.

McElwee (2005) distinguishes the difference between running a small business and being an entrepreneur, positing that they are not the same thing. Being able to operate an organisation requires skills and abilities that are different from those of an entrepreneur, suggesting that managerial skills are needed for a successful long-term operation of business while being an entrepreneur involves innovation skills. McElwee (2005) supports this view for the following reasons:

- The methods used to analyse business entrepreneurs in other sectors can be applied to farmers;
- Farmers have traditionally been entrepreneurial ;

- Farmers are primarily business owner-managers and that farms can be characterised as businesses; and
- Parallels can be drawn between portfolio entrepreneurship in non-farm (business) sectors, suggesting that farmers have numerous business intention, which promotes employment creation and rural economic development.

The importance of innovation, about the character of entrepreneurs and entrepreneurship, was emphasised by Lumpkin, Dess and Ramme (2001). The authors propose that innovation is the single dimension that has to be employed by all entrepreneurial business, including agri-business run by black farmers. It can, therefore, be argued that, even in the presence of the other dimensions, if innovation is not employed there is no business level entrepreneurship (Gurbuz and Aykol, 2009). Even in agri-business, innovativeness reflects a business tendency to encourage, engage in, and support new ideas, novelty, experimentation and creative process that may result in new products, services or processes (McFadzean, O'Loughlin and Shaw, 2005). Mechanisation in agri-business is absolutely an innovative result. Product and services innovation presents a change in the product or service range that a business takes to the market and has proved to be a potentially significant source of strategic advantage (Cooper, 1998). An innovative example in agri-business was a farmer by the name of Vivian Beukes who introduced his, Bio-Boost Solution" into livestock feed. This innovation is proving to be revolutionary in intensifying the red colour of meat and reducing the odour of pork. From a market point of view, these qualities are highly advantageous when meat is displayed in shelves and boost sales dramatically.

Product or services innovation is most clearly understood from innovation and consists of disruptive, radical and incremental innovation (Schilling, 2005). This process of innovation can also apply to systems development. Most process innovations result in additional improvement in key performance parameters, for example cost reduction, quality

enhancement and time reduction. Disruptive process innovation is radical shifts to new process routes for the business and perhaps, for the industry (Bessant, 2003). The relationship between innovativeness and agri-business performance presents the highest degree of consensus (Casillas and Morena, 2010), with most studies finding a positive relationship. Rauch *et al.* (2009), Morena and Casillas (2008), Subramanian and Nilakanta (1996), and all found a positive correlation between innovativeness and business performance and growth. As a consequence, there is an increasing knowledge that innovation has become the only sustainable means of growth, competitive advantage, and new wealth (Dreyer, 2006). According to Wiklund and Shepherd (2003), innovative business can generate extraordinary performance and has been described as the engine of economic growth

2.9 Entrepreneurial Leadership

Effectiveness in leadership is connected to the success of all sizes and variety of firms (Daily *et al.*, 2002). A specific kind of leadership, entrepreneurial leadership is the skill to affect others to manage resources effectively to emphasise both opportunity-seeking and advantage-seeking behaviours (Rowe, 2001).

Leadership is a significant factor in long-term success and an answer to alleviate failing organisations (Currie *et al.* 2007). Kuratko (2007) noted the significance of entrepreneurial leadership. Entrepreneurial leadership is vital for business organisations of all sizes to prosper and flourish. The problems of leaders are to create internal entrepreneurship as an integrated concept that encourages individuals in a new manner. It is this perspective that has revolutionised the approach business is carried out at every stage and in all country. It is a viewpoint that promotes individuals to search the innovative spirit. It is, in effect, the essence of Entrepreneurial leadership (Kuratko, 2007).

1. Nourish an entrepreneurial capability: Human capital is the source of SE behaviours. A vision emphasizing the importance of SE as well as a commitment to develop human capital facilitates individuals' efforts to develop entrepreneurial capabilities such as agility, creativity, and skills to manage resources strategically (Alvarez and Barney, 2002).

2. Protect innovations threatening the current business model: Individuals sometimes see disruptive innovation (defined later) as threatening—to them personally as well as to their organizations. Effective entrepreneurial leaders openly share information with organizational members to describe disruptive innovations' potential benefits (e.g., stimulating development of new competitive advantages).

3. Make sense of opportunities: The probability that individuals will accept the need to pursue entrepreneurial opportunities and to develop unique competitive advantages needed to exploit them increases when those opportunities are a part of the firm's opportunity register. Entrepreneurial leaders are able to communicate the value of opportunities and how exploiting them contributes to the firm's overall goals as well as to individuals' goals.

4. Question the dominant logic: Dominant logic describes how leaders conceptualize their business and evaluate resource allocation decisions. Key assumptions about industries and markets that influence the firm's opportunity and opportunity seeking behaviours should be periodically questioned to ascertain their validity (i.e., challenging the dominant logic). Entrepreneurial leaders evaluate the assumptions underlying the dominant logic to make certain that the firm is successfully positioned to identify value-creating entrepreneurial opportunities.

5. Revisit the “deceptively simple questions: Entrepreneurial leaders examine questions about the viability of the markets in which the firm competes, the company's purpose, how success is defined and the firm's relationships with different stakeholders. Revisiting these

questions over time is vital in that the answers influence what the firm identifies as opportunities and how it manages its resources to exploit those opportunities.

6. Link entrepreneurship and strategic management: Effective entrepreneurial leaders believe that to create the most value, firms must be “*strategically entrepreneurial*” (Covin & Slevin, 2002). This desired end state is achieved when leaders’ entrepreneurial mindsets help them develop a culture in which resources are managed strategically (i.e., advantage-seeking behaviour), yet entrepreneurially (opportunity-seeking behaviour).

2.10 Risk Taking in Entrepreneurship

Risk taking, growth orientation and innovativeness are prominent in economic theories of entrepreneurship, suggesting an expectation that a proper entrepreneur is engaged in active dynamic and competitive pursuit of opportunity and economic growth (McElwee, 2005). De Lauwere, Verhaar and Drost (2006) is of the view that entrepreneurs have always played an important role in economic practice, as they are held responsible for economic development by introducing and implementing innovative ideas (product, process, market and organisational innovation). Hashemi *et al.* (2012) acknowledge the importance of entrepreneurship to economic and social development, while Urban (2007) notes that entrepreneurs act as catalysts of economic activity. Whether this can be said about agricultural entrepreneurs is debatable. Policy makers and scholars are thus turning to entrepreneurship as a solution to organisational performance and economic prosperity (Urban, 2007).

Agricultural entrepreneurs should operate independently and deliver high-quality products. These should be produced in a manner that respects social values, and these entrepreneurs should receive social appreciation in return (de Lauwere *et al.*, 2006). Despite the dependence

of economic results of agricultural enterprises on internal and external conditions, the role of the agricultural entrepreneur as a risk-taker is critical (de Lauwere *et al.*, 2006).

Not too differently, Caliyurt (2011) defines innovation as being positively related to business performance in small firms, whether demonstrated by the introduction of new products, services and processes or by the re-invention of existing products and processes. A competitive edge in innovation is extended to companies that can harness all of their internal resources and that extend sources of support (Caliyurt, 2011). It, therefore, stands to reason that agricultural entrepreneurs, compared with other types of entrepreneurs in other industries and sectors of the economy, cannot be indifferent about innovation or taking the risk.

Dewett (2004) defines the term risk-taking as the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of the decision will be realised. In this regard, Mullins and Forlani (2005) characterised risk as either the potential to act too quickly on an unsubstantiated opportunity or the potential to wait too long before activity. The risk is inherent in the operations of any business and almost every decision was taken by entrepreneurs involves risk (Von Stamm, 2008). Often, a corporate entrepreneurial company that has an entrepreneurial orientation, like agri-business, is typified by risk-taking behaviours, such as incurring heavy debt or making large resource commitments in the interest of obtaining high returns by exploiting opportunities in the marketplace (Bhardwaj, Agrawal and Momaya, 2007).

Another aspect of risk-taking is the assumption, which is often made, correctly so, that innovativeness and risk-taking are directly correlated, and that being more innovative involves taking higher risks. According to Morris *et al.* (2008), this relationship is more complex. Risk is also high when business ignores new product/service opportunities and engages in little or no innovation. In this regard, Burns (2008) notes that while not innovating

presents a minimal risk in the short-term, it does create a high risk in the long-term. In essence, businesses that do not innovate are faced with high risk of not perceiving market and technology shifts that are capitalised on by competitors. The converse to this theory is also true. To be successful in future, business will need to exploit an entrepreneurial orientation with the ability to rapidly sense, act and mobilise under high risky conditions (McGrath and MacMillan 2000). Given factors such as globalisation, deregulation, technology, social change and information technology that businesses are facing, it is important to cope with rapid and unexpected change, which has long been central to theory of entrepreneurship (Shane, Locke and Collins, 2003). The relationship between risk-taking and success of a business is not clear. Rauch *et al.* (2009) and Wiklund and Shepherd (2005) argue that while tried-and-true strategies may lead to performance, risky strategies may result to variations in performance since some programme flop despite the fact that others succeed. The greater the risk, the greater the profit is the widely used slogan by entrepreneurs.

2.11 Empirical Literatures on Farming Entrepreneurship Skill Competency

Mujuru (2014) targeted at assessing the effect of strategic entrepreneurship seminars of Dotito Irrigation Scheme and Mitchell and Mitchell on the entrepreneurial skills and capabilities of farmers in rural areas. The study used the several method to increase chances for higher validity and reliability of the findings. The study postulated a relationship between strategic entrepreneurship workshops and entrepreneurial ability and skill of the respondents. The study established that strategic entrepreneurship workshops allowed the higher number of the rural farmers to fulfil their buyers, educate children in the farming venture and become accustomed to the environmental variations and ability to source for customers. Farmers in the study areas had poor marketing and planning skills which could enhance their ability to increase productivity and gain better profits.

Deakins and Freel (2003) listed entrepreneurial teaching skills that are applicable everywhere. Entrepreneurial teaching and training skills for trainers are Interpersonal skills (interacting with others efficiently, negotiating, communicating effectively, leadership skills). Personal Skills (initiative, taking responsibility, ability to deal with the unknown with ease, innovation, risk-taking, seeking opportunities in change and accepting challenge process skills (planning and organizing skill, analytical skill and skill to assess and capability to undertake plan).

As Defra (2007) itemised the competencies in business skills is vital to the effective commencement of specialised business venture. Skills needed for successful agricultural business investment for increasing profit are planning and management skills. A small number of farmers can now depend only on their traditional knowledge of primary crop production. Several farmers have already taken of other agri-business with the existing one and have added value to produce to increase profit. The skills needed are marketing, customer relation and staff managing skills.

Categories the Skill for farmers according to Christine Rudmann are:

- A.** Basic skill categories: Professional skills (Plant or animal production skills and technical skills management skills, financial management and administration skills, human resource management skills, customer management skills and general planning skills).
- B.** Entrepreneurial skill categories: Recognising and realising business opportunities (Risk management skills, and customer orientation, knowledge of threats, Innovation skills and Recognising business opportunities and market).
- C.** Emerging and assessing a business approach (strategic planning skills, reflection skills, monitoring and evaluation skills, conceptual skills, receiving and giving feedback. Others are goal setting skills and tactical decision-making skills), Networking and

cooperating with contacts (leadership skills, and organisation skill, networking skills, team-working skills and skills in collaborating with fellow farmers).

Entrepreneurs need various skills to manage an enterprise successfully. Wickham (2006) defines such skills as mere knowledge as performed in doing. Entrepreneurial performance is as a result of bringing companies personal knowledge, motivation and management skills. Rae (2007) agreed that managerial skill and entrepreneurial skill-set are needed to undertake productive farming business agreeing with the concept as 'entrepreneurial management capabilities'. This capabilities strategies spreads the list of skills now include: strategic planning, leading and managing people, managing finances, investigating opportunity, and personal organisation, innovation. Though, indifference view to skills and capabilities, the approach to competency has occurred as a progressively more popular way of examining entrepreneurial characteristics. Man *et al.* (2002) assess skills competency as greater level of business characteristics, signifying the ability of the entrepreneur to undertake a job function successfully. Consequently, entrepreneurial skills and competencies can be represented in accurate frameworks for the succeeding research among farmers.

Indeed, two important uses of the term competency exist, firstly, skill as the behaviour one demonstrates and, secondly, competency as minimum performance standard (Mitchelmore and Rowley, 2010). Knudson *et al.* (2004) which examines farmers entrepreneurial skill set. However they 'acknowledge that additional research is needed to determine what capabilities entrepreneurs need to develop, and what training is necessary to be successful in their businesses.

Entrepreneurs need not be a professional in skill but, in its place, is needed to be do all. Lazear noted that successful enterprises require adequate skills in different sectors to combine various resources and to create a successful business (Lazear, 2005). Moreover, the JAT view

of entrepreneurship is supported by Wagner (2006) and Asteboro and Thompson (2011) who suggest that having a balanced skills mix stimulates entrepreneurship. In contrast, Silva (2007) proposes a more cautious interpretation of the JAT approach, having found in a longitudinal study of Italian entrepreneurs that acquiring a wider skill set was not significant.

2.12 Yam Farmers Entrepreneurs in Nigeria

Awoniyi and Omonona (2006) examine the production competence in yam centred enterprises in Ekiti State, Nigeria. The study establishes that three kinds of yam production structures. These are wetland, upland and addition of the two types of production systems. The study shows that farm size and weight of yam set and farm size were the main variables determining aggregate margin in wetland yam centered enterprises. Increase in gross margin occurred along with farm size of farmers although reduce along with yam set load. The efficiency concept used for the study indicated that the three farming structure totally, as crop variation increases, there is a decrease in income capacity of farmers in the study area. The wetland yam centered enterprises has the utmost economically efficient tailed by upland yam centered enterprises. Also, wetland and upland yam centered enterprises had the smallest financially efficient. Productivity of inputs used shows that yam set is overused across the three yam farming systems. Furthermore, inputs such as family labor and fertilizers were over-utilized in wetland yam centered enterprises.

Oluwasusi and Sangotegbe (2012) investigated the perception of yam farmers on the impact of climate variation in Ekiti State. Results showed that majority of the respondents were males, married with formal education. Farmers in Ekiti state have a high knowledge of climate change. They also perceived unfavourable perception about the effect of climate variation. Chi-square analysis of inferential test indicated significant relationship between

occupation, farm size, education, years of farming experience and farmers perception of climate variation.

Awosusi (2010) examined the challenges of an immediate sale of yams in bulk while harvesting, and poverty status of yam farmers in Ekiti State, Nigeria. The study sampled 300 respondents comprising of yam farmers and marketers. Results from this study show that improper storage amenities, poor marketing approach, challenges of income and traditions of the respondents explained for the bulk-selling of yams among farmers and marketers in Ekiti State Nigeria.

Oluwasusi and Tijani (2013) investigated adaptation approach of farmers and how it affected different climate conditions in yam cultivation in Ekiti State. Findings obtained reveals that farmers in Ekiti State were mostly males with a mean age of fifty-three years. Inferential analysis showed a significant association between occupation other than yam cultivation, farm size and production level among farmers. Pearson product moment correlation also showed that there was a significant and positive association of socioeconomic characteristics such as age, adaptation means and yam production status, while negative association existed between challenges and yam production status of farmers. Also, Analysis of Variance showed a significant difference in the status of yam production of farmers in the years 2008, 2009 and 2010.

Okeke, Oraka and Obasi (2015) itemised factors influencing entrepreneurship behaviour among yam based agri-business farmers in Benue State Nigeria. Data were collected from two hundred and eighty-eight yam based agribusiness farmers and entrepreneurs. The result of factors analysis indicated that economic status of income and demographic factors had determined the kind of behaviour of farmers for yam based entrepreneurship business.

Mbam and Nwibo (2013) examined the entrepreneurship advancement as an approach for poverty reduction in farming families in Enugu State, Nigeria. The study indicated that regardless of farm families' involvement in various entrepreneurial activities, its appropriate developmental approaches are yet to be adopted. So, it can be accomplished that the development of entrepreneurial activities did not statistically impact on poverty reduction of the farm families in the study area. The growth and achievement of entrepreneurship capability of the farmers were hindered by lack market opportunities, low access to credit facilities, insufficient market information, poor management skills, inadequate electricity supply, high tax, and poor and inadequate government policies for entrepreneurial development.

Hussin, Asaari, Karia and Hamid (2012) study was conducted to itemise the factors encouraging smallholder farmers to participate in agri-preneurship activities. Four hundred smallholder farmers who were cultivating crops, fruits, vegetables, and rear fishes were considered for the study. Findings from the study showed that the participation of youth farmers among the sampled respondents was low. Virtually fifty per cent of the farmers under the study were aged over fifty years as the majority had only primary and secondary level education. As regards of entrepreneurial factors that motivate farmers were management knowledge farming business and marketing skills. Capital capacity, the environmental factors, and available training were the challenges that hindered smallholder farmers from undertaking in agri-business and entrepreneurial activities.

Ogbonna *et al.* (2012) identified the poverty status and then food demand pattern of yam based farming families in Southeastern Nigeria. Six hundred and seventy-eight naira was found per day for the poor families and three hundred and thirty-nine naira was found per day for very poor yam based farming families. The number of head in ratio showed that fifty-three percent of the families were poor while fourteen per cent of the families were abysmal

in the study area. The degree of poverty among the very low-income families cultivating yam was found to be forty two per cent while that the degree of poverty among the poor families growing yam was found to be twenty two per cent. The attitude of families in search for food for poor and very poor yam farming families was calculated. The results showed that food require was significantly influenced mainly by prices palced on food and income. This is not the case with socio-economic characteristics of the poor yam farmers and very poor yam farmers. Though, the food demands pattern of poor yam-based farm households were highly responsive to income and prices tag than are farmers of very poor yam-based families in the South-eastern Nigeria.

Nwibo (2012) studied the financial side of yam marketing among 120 yam marketers in Anambra State, Nigeria. It was found that the respondents were within the average age of forty-one years and were majorly women. The average family size of respondents was eight people. The average income of marketers was one hundred and eighty thousand naira while the aggregate gain was one hundred and fifty nine naira which means that for each one naira invested in the yam marketing, twenty-one kobo was gained as profit. Yam marketing demand was unitary while supply was elastic. The study, on the other hand, identified increase prices of transportation, long distance from market, long days of market interval, high rate of perishability of yam, no good road network, lack of capital, distance to and lack of storage facility as the main challenges of yam marketing.

Oluwatosin and Shittu (2014) assessed the influence of socio-economic characteristics on performance of one hundred and twenty yam farmers in Nigeria. Findings revealed that eighty per cent of the yam farmers can be considered to be economically active working age. It was also showed that eighty-four per cent were men and fifteen percent of the farmers were women. Furthermore, the analysis of yam production function showed that the major determining factors of yam production performance in the study area were aged, educational

level, years of farming experience, kilometre farm income and distance of the farmers had positive significant relationship. However, households size had a negative significant yet not statistically significant; this contradicts the prior results. Some suggestions were therefore made as to increase the performances of yam farmers along with food security in the state.

Onumadu and Nwaobiala (2012) assessed the participation of youth in yam minisett technologies among one hundred and twenty yam farmers in Ivo LGA of Ebonyi State. The study revealed that most of the yam farmers had age bracket between fifteen to thirty years, twenty-six percent had farming experience of between eleven to fifteen years, and fifty-five percent has farm sizes ranging between one to three hectares. The study further indicated that eighty per cent of the youths were fully involved in yam minisett technology. A correlation analysis revealed that age, years of farming experience and farm size in hectares were determinants of youths participation in yam minisett technology.

Ebewore, Egbodion and Oboh (2013) evaluate the profitability of yam production in Ika South Local Government Area of Delta State, Nigeria. The gross margin analysis (GMN) was employed to assess the economics of yam production in the study area. T-test was used and showed that the profitability status of yam farmers significantly higher than zero. Inadequate access to preservative facilities, lack of access to credit, inadequate and low support by wholesalers and low price of yam are the main constraints hindering yam producers in the study area.

Izekor and Olumese (2010) examined the determinants of yam production and profitability in Edo State, Nigeria. Questionnaire was used to collect information from one hundred and twenty farmers in Edo state. Mean score, frequency, percentage, Gross Margin analysis (GMA) and production function assessment with the Ordinary Least Square (OLS) procedure was employed to calculate the indices of the production function. The result indicated that most of

the farmers was ageing, male and had no formal education. The modal family size was seven to eleven people. Budgetary examination shows that yam production is gainful in the study area. The average gross margin of fifty-eight four hundred naira was found. Farm size, staking, yam sets and the operating cost were found to be positively associated with output. Labour was found as the main determinant. The result also showed a profit to scale of five representing in a growing return to scale, indicating inefficiency in the utilisation of input resources in the agro-enterprise as production was in the unreasonable stage of production.

Anozie, Usanga and Okelola (2014) study were carried out to examine the level of adoption of yam minisett technique by farmers in Imo State. The study was carried out among ninety farmers. The farmers were administered with questionnaire to collect for the study. The finding revealed that higher percentage of the farmers interviewed were aged, had partners, educated, with long years of farming experience but had low income from yam production. The study further showed that the low use of yam minisett technology among farmers. Number of years of age, educational status, number of years in farming experience were determinant factors influencing the adoption of the yam minisett technology. The farmers were also constrained by the scarcity of inputs, low capital outlay, difficulty in obtaining loans, the poor market for products and poor extension visit.

Ibitoye and Onimisi (2013) found that farm income, age and education level have significant effects on yam output in the study area. Sobalaje and Adigun (2013) study focused on the use of ICTs by yam farmers in Boluwaduro Local Government Area of Osun State. The result supports the assertion that ease of access and availability were the major factors that influence the preference for ICTs use by the yam farmers in the LGA, and also, television, radio and mobile phone were the most preferred ICTs tools for agricultural information by the yam farmers. It was discovered that infrastructural facilities are the major problem constraining the use of ICTs by the yam farmers in Boluwaduro, and that demographic factor

does not have any significant relationship with the use of ICTs by Boluwaduro yam farmers. While greater association existed between obstacle encountered and ICTs used by farmers in the study area. Better infrastructure provision was also advocated to encourage the use of ICTs by the yam farmers.

Osayande and Osabuohien (2016) examined the influence of yam-Based production on poverty level among one hundred and twenty farmers in Kabba/Bunu Local Government Area of Kogi State, Nigeria. The results revealed that in the absence of income from yam production. Higher number percentage of farmers was under the poverty indicator. Few of the farmers questioned were higher than the poverty line. With increase yam production, the yearly income of the farmers statistically increases with the ratio of the poor and non-poor farmers. Respondent agreed that benefits obtained from yam-centred production were without the hunger in the farm families affording and accessing improved medical services, payment of house charges and capability to recompense school fees. Finally, the results also revealed that three variables in the logit regression model was significant in explaining variation in the poverty status of the farming households. These are farm size, income from yam-centred production and non-farming activities.

Okoedo-Okojie and Onemolease (2009) examined the factors influencing the adoption of improved storage technology among yam farmers in the northern ecological zone of Edo State, Nigeria. Data were gathered from over hundred yam farmers. Results analysis shows that yam barn is the main indigenous storage method utilised by all farmers. Farmers adoption of improved yam storage technology was little with shelving being the main widely used. Logistic regression analysis pointed that contact with extension agents, farming experience, age, and farm size with had a significant influence on farmers' level of use of improved storage technology of yam. The main challenges hindering the farmers' use of

storage technologies were non-availability, lack of knowledge of technology and the high cost of storage technologies.

Zaknayiba and Tanko (2013) examined the costs and returns assessment of yam production in Nigeria. A multiple sampling methods was employed to represents farmers for the study. Principal data were gathered with the use of questionnaire income gotten in one hectare and returns in one naira put into the business. The main challenges facing farmers were lack of access to capital, incidences of pests and diseases, poor road network facilities, no of access to input resources, high cost of inputs, poor producer prices, and inadequate extension services. Questionnaire and interview schedule. Data were assessed using frequency count, percentage and gross margin analysis.

2.13 Diversification in agri-business

In this section, this study reviewed the essence farm entrepreneurship strategies which include farm divergence, pluriactivity and specialisation. As diversification turn out to be an virtually estimated agricultural practice, crop farmers are gradually known as entrepreneurial, wanting to develop innovative skills and abilities to remain modest (McElwee, 2006). Smit (2004) also viewd that entrepreneurship is gradually coming to be the major essential sector of improved farming technology.

Previous study of farm difference, different agricultural specialization was described a strategically universal planned deviating away from vital activities of the business, as a results of outside pressures, in a struggle to keep on in and progress the business. McElwee (2004) noted that agricultural diversification' definition is never an effort to remove activities such as diversification in farming related activities and did no remove non-farm jobs. Meert *et al.* (2005) also recommended that work done that are not related to farm activities. Some arguments proved that specifications in agriculture are the common strategy. Though, it may

thrive be the situation that for few farmers, it is in elevation specialisation, which could be the significant suitable strategy to confirm business achievement and continued existence of the farm business. For instance, in a study by Rantamäki-Lahtinen (2002). The forestry and agriculture have locally been the main essence means of income in rural areas of the study area. From before years before the survey, the study area is moderately practised different specialisation in agriculture in pigs, poultry and dairy. Nevertheless, growing agricultural specialisation has happened, but the majority of the farms are diversified in the view that farmers have forestry activities work. Diversification has also been proven to increasingly encourage increase growth of farm size (Pyykkönen, 1996). The proportion of farms sites has gone down steadily, and the amount of people taken as workers in agriculture has decreased. In contrast, agricultural productivity has improved, and the farms produce are much higher. However, vast portions of farms in the study area are produced specific agricultural goods. There looks to be that for some farmers, agricultural diversification is a vital path out of agriculture. Yet, several specialized farms enterprise will often remain in diversification in years to come (one reason being that their non-farming activity is carefully related to agriculture. However, there is also another large category of farmers. This includes farms that have diversification in agricultural practices but are likely to re-emphasis back on agriculture. Why this event looks to be completely understood. Notably, the researcher noted that neither crop diversification nor specialisation alone is the finest solution for the challenges in agriculture they are balancing to each other. Diversified farms have a tendency to utilization the services and products of the specialised. For McElwee (2004), these farmers who are involved in different crop cultivation activities lean towards reactive, rather than taking the initiative strategies. In addition, several of the different farming activities looks to be prompted and accomplished by constitute activities and the female farmers, which have

locally been related with the function of the women in agriculture. For instance, performing farm shops and lodging.

What the new roles of farmers need to undertake is expected to be successful. On this, it has been suggested that pressure for farmers existed to be extra multifaceted entrepreneurs. Agricultural production different from the production of crops and livestock as raw materials for industrial products step up the supply linkages. For instance, they include the provision of services to fellow farmers, production of speciality food products. Others are rural entrepreneurial businesses, the agricultural assets usage such as farm animal and farmhouse to entice paying visitors. Jobs enrolment farm families' members in other occupations such as civil service, trading, teaching craft-work, and consultancy were also inclusive (Warren, 2004)

2.14 Factors Affecting Rural Entrepreneurship

Rural entrepreneurship does not operate in a vacuum. It exists within an environment which is the totality of the factors that affect its operations. Stoner *et al.* (1995) defined environment as “all element outside an organisation that is relevant to its operation”. Ultimately, the context in which a business owner operates cannot be ignored because it influences and shapes motivations and the type and amount of resources that are available (Meccheri and Pelloni, 2006).

The major environmental factors affecting rural entrepreneurship include:

1. Physical Environment

According to Osuagwu (2006), the three major features of the physical environment that affect entrepreneurship in rural areas include location, natural resources and landscape. Location is related to the distance from major markets and accessibility to customers/ clients,

suppliers, information sources and relevant institutions. The existence of important natural resources as well as the landscape affects entrepreneurial activity by presenting opportunities for the environmentally sound utilisation of resources. Distances and remoteness have favoured the preservation of unique views and environmental features, important traditions or traditional methods of production that may give rise to entrepreneurial opportunities. Physical environment also determines the type of ventures, for instance, rural entrepreneurial ventures are mostly Agricultural and processing.

Infrastructure shows an important role in its contribution to the success of rural entrepreneurship. This include road networks, increase access to potable water (Walzer, 2009). For a well-developed infrastructure, the increase rate of prosperous rural entrepreneurs that result (Okurut, 2008). Increase access to utilities including communication, electricity, markets and road, impacted to the greatly to the development of the smallscale businesses in the rural areas (Kirubi, 2006). Infrastructure could be physical and non-physical. Physical infrastructure means energy or roads.

2. Economic Environment

The remoteness and consequently high transportation imposed significant constraints in the establishment of competitive small business enterprise in rural areas. Investment in infrastructure is highly desirable feature of entrepreneurship in rural places. Other economic variables that exert influences on rural entrepreneurship include the economic policies of government (i.e monetary and fiscal policies), the income and wage level of rural dwellers, the price level of goods and services and the level of competition.

3. Political/ Legal Environment

The political system in a country is an important force which also produces threats and opportunities for rural entrepreneurs, such forces comprise government system, philosophy

and policies. For instance in 1990, government established the people Bank of Nigerian and followed it up with the licensing of community (now Micro Finance) banks to complement the effort of rural banking scheme by addressing the financial problems of rural entrepreneurs. Another instance is the Nigerian enterprises promotion decree of 1972 as amended in 1977 designed to promote entrepreneurial activity in Nigeria.

4. Socio-Cultural Environment

The social factor relates to the nature and attitude, norms and behaviour of people (Olagunju, 2004). The value systems of the people in terms of their orientation will go a long way to affect the operations of rural enterprise. For instance, in the northern Nigeria and in strong Christian community, many people do not take alcohol because of religious demand. The implication is that all the rural potentials for brewery remain untapped. In the rural area, the cultural heritage and occupations of the people play vital role with respect to the nature of business, for instance, cloth weaving is predominantly small venture in Akwaete's in River state Igbo's are predominantly traders, poultry is predominant in Ilorin, carving in Benin Kingdom, liquor processing in coastal area, Hausa are predominantly Farmers, Fulani's are predominantly Herds men etc. Such cultural beliefs as witchcraft, charms, ill-luck, misfortunes, superstitious belief etc are detrimental to rural entrepreneurship. Schields (2005) agreed the significance of family relations, social and culture factors had stronger effects on successful management rural entrepreneurship and networking individuals farmers to rural development programme.

5. Technological Environment

Osuagwu (2006) points out that, the limited scale and scope of local markets, force rural entrepreneurs to develop innovative products and effective marketing to compete with urban-based counterparts, and that, information and communication technology hold a central role in this process. On the other hand, area which fail to participate in developments of ICT risk

increasing marginalization. The adoption of ICT by rural small business enterprises is also highly dependent upon external pressure and organizational size. Proper use of ICT in rural small business enterprises is important for the growth of entrepreneurship in rural areas.

Other Factors Affecting Rural entrepreneurship

Literature have found the major influencing factors determining the development of rural entrepreneurial businesses. The determinant factors is expected to be broadly grouped as internal factors (i.e features of entrepreneurs and the business). External factors should also include the population change, access to natural resources, support from government, description of of the labour and available good market, quality level of supply chain of produce and access of finances). Risk taking, innovation, motivation, opportunity seekers and taker, self-inspiring, ownership of business, are all characteristics of an entrepreneur (Martin and Osberg, 2007).

Age of entrepreneur have a parabolic figure as two variables. This means that efficiency of the business performance first rises then declines as owner ages. Although young entrepreneurs may lack experience, training should be given to them and they should also be encouraged to become entrepreneurs. Okurut (2008) stressed that positive effect of education and business knowledge on the performance of small scale enterprise, and the joint view of rural entrepreneurship and female ownership decreases business achievement. There is a positive relationship between number of ventures that started and educated owners, not pointing to only secondary education certificate (Acs and Armington, 2005). The substantial entrepreneurial activity is to be influenced by positive entrepreneurial climate in the close regions, giving a special place to social interactions, as one of the main entrepreneurial drivers that also enhance faster learning through social effect. (Gianneti and Simonov, 2008)

2.15 Rural Entrepreneurship Development Programmes in Nigeria

It is understood that the success stories of rural entrepreneurship development programs usually depends of government policy and strategy. Over the last decades, there are diverse ranges and complex structure of programs and policies which targeted at rural enterprises, while others are national programs that include firms in rural areas alongside their equivalent in the other country. The entrepreneurial orientation to rural development sometimes is contrary to the developmental aims centred on encouraging in investment from outside and human capital, is based on promoting local entrepreneurial ability. This encouragement would provide employment and complement economic essence to a state and communities. Altogether, keep limited resources in the community. To speed-up economic growth in the rural areas, it is important to increase the source of entrepreneurs, therefore build up the important mass of initial generation entrepreneurs (Petrin, 1994).

From the policy viewpoint, every country has developed its own entrepreneurship policy. The policy usually reflecting specific characteristics of the country such as cultural and ideological histories of the country, the role of private enterprise, the economy, and the role of state policy in relation to enterprise. It is also associated with differences in government structures and the degree to which regional and local tiers of government have been involved in economic development. For example in the United States many different types of strategies and programs have evolved support the entrepreneurship and small business (Wortman, 1990). In predominantly rural areas, the strategies and programs have infrequently been related to rural entrepreneurship (Wortman, 1990). Whatever the location of the program, Petrin (1994) suggested that rural entrepreneurship policy or strategy must be relevant to the entrepreneurial needed.

For several years, many programmes to promote entrepreneurship have been presented in various countries worldwide. Some of the such programmes associate entrepreneurship with fresh venture and management education about smallscale entrepreneurship and enterprise

instead of education for entrepreneurship. Not often, the main purpose is on developing and growing of skills, attitude and attributes of a successful entrepreneur (Kirby, 2002). Interman (1991) listed three kinds of programme that can be aimed at entrepreneurship development. They are:

- Entrepreneurship awareness, knowledge and orientation programmes which are directed towards broad information about entrepreneurship and motivate participants to reasons in the direction of entrepreneurship as a profession.
- Newly introduced enterprise awareness programmes focused at developing competences of entrepreneurs. Such programmes will results to employment that is personal and easily created for provide economic self-sufficiency and
- Entrepreneurship programmes with a focus directed at increase survival of smallscale business and growth.

2.16 Empirical Literatures on Impact of Government Reform Programmes

A study was conducted to examine government programmes directed towards the development of entrepreneurship in Nigeria. The study further investigated the employment creation capacity of some government initiatives on the beneficiaries. Over one thousand beneficiaries were selected for the study across the country. Questionnaires was employed to gather information from the targeted beneficiaries. The study found that credit policies of the government have no significant influence on the growth/development of entrepreneurial activities in Nigeria. The study also found that higher percentage of the beneficiaries do not get great contentment from government initiatives (Tende, 2013).

Okpara findings in 2011 determined the factors that hinder the growth and continued existence of smallscale trading in Nigeria. He employed the use of questionnairee method to collect data from over two hundred smallscale entrepreneur and managers chosen in selected

towns in Nigeria. He carried out various statistical analyses to assess the factors hindering the development of small scale enterprises in Nigeria. The author revealed that the main constraints hindering small business development in Nigeria are lack of access to financial support, poor management skill, lack of training and knowledge, few years of experience, corruption, poor infrastructure, low profits, and poor market structure for product and services.

Ogundele and Akingbade (2012) examined degree of entrepreneurship education and training as approach to reduce poverty in Nigeria. Authors selected two hundred and fifty entrepreneurs as sample size in Lagos state. The study revealed that entrepreneurship training and education were significantly related to youth empowerment and social welfare services. They also found that empowerment youths determined the gained entrepreneurial technical skill. They recommend that effective technical education, youth empowerment, and social welfare service as a catalyst for poverty alleviation.

Adofu and Akoji (2013) assessed the impact of entrepreneurship skill acquisition on poverty in Kogi State of Nigeria. They used structured questioners for collecting primary data from six Local Government Area of the state and utilized descriptive statistics including frequencies and percentages. They found that majority of the farmers agreed that lack of entrepreneurship skills in the midst of youths is accountable for the elevated rate of poverty in Nigeria. The finding further showed that higher percentage of the entrepreneurs that benefitted in the skill empowerment programme could afford the primary needs of life.

Mensah and Benedict (2010) were engaged in desk study through survey method among the poorest parts of location in South Africa. The study seek to find out the contribution of government programme in reducing poverty by entrepreneurship development effort. Authors found that training and educating entrepreneurship and improved access to basic needed

facilities can provide poor entrepreneurs of small scale enterprises chances to grow their enterprises. Adebo and Ajiboye (2014) investigated poverty status and differences in urban and rural families in two state of Nigeria. One hundred and eighty families were selected for the study. The study revealed a higher poverty status among rural families as compared to families in urban cities of the study area.

2.17 Entrepreneurship Attitude: Conceptual Issues

Hogg and Vaughan (2005) describe an attitude as a comparatively enduring class of feelings, beliefs and behavioural tendencies to socially related groups, objects, even. Ahnstrom *et al.* (2008) also defined attitudes as a willingness to do something or a mindset that is used by an actor to perform and evaluate in factors of decision making. According to Siebert *et al.* (2006) ‘attitude’ is understood to be a combination of subjectively perceived factors that influence the farmer such as interests, values, norms, problem awareness and self-perception – as these collectively can explain willingness to undertake environmental activities. Burton (2004) further suggests that individuals can hold multiple situational dependent attitudes towards a given object.

According to Mohd-Salleh *et al.* (2005) attitude is needed to assist a person in acquiring and participating in entrepreneurship skills. Ajzen (2002) describe attitude in entrepreneurship as individuals perception for benefit, value, and positive thinking of entrepreneurship which exceedingly influence their mind to invest into a new enterprise area. Scholars have also described entrepreneurial attitudes in two means. (1) entrepreneurial attitude is persons thought, feelings and conations in the direction of entrepreneurship (Ajzen, 1991). In this strategy, Lope-Phihie and Bagheri (2011) also noted that entrepreneurial attitude is known as a role of the belief, value and rightful thinking for entrepreneurship, always a one-dimensional concept. (2) the other approaches described attitude of entrepreneurial as

multiple dimensional framework that covers four vital personality factors including the need for success, framework, entrepreneurial technology and entrepreneurial regard. Entrepreneurial attitude attributes constituents has three measurements, involving affection which are emotion and feeling, cognition which are belief and thought and conations which are action and behaviour. Therefore, for an entrepreneur to achieve in a choosing career, the three component must work together (Lope-Phihie and Bagheri, 2011). Entrepreneurs need not unwary, bombastic, operating experience or have head-strong shared by Professor Irv Grousbeck in his “Last Lecture” titled talk with the Stanford GSB Class of 2013. Below are 5 attitudes Grousbeck believes successful entrepreneurs possess:

1. An endless non-satisfaction with the current situation: Entrepreneurs are not contented with what is they have but entrepreneur have faith in that can do their things better.
2. A healthy self-confidence: Entrepreneurs must have a willingness to be lonely, to make public mistakes, and to have the buck stop with them.
3. Responsible self-confidence: Entrepreneurs should feel worthy about what he/she is doing. Entrepreneur should also know at all time they could do more. They should always be willing to go extra mile for their businesses.
4. Pay attention to detail: it is only few successful entrepreneur are broad-brush in every aspects of their business endeavours.
5. Ready to accept ambiguity: Not to cause disorderliness while taking risks, this readiness to accept an unknown future is at the vital of characteristics of an entrepreneur. Entrepreneurs may not know if they will earn an income tomorrow, yet they will be willing never to quite in a corporate working environment and contented routines.

2.18 Farmers' Entrepreneurial Attitude

Ahnstrom *et al.* (2008) observed that farmer possess a particular attitude regarding management of farms and environment is very simple. Hence, a farmer possess his own opinion on what is he/she called good farming. Farmers' own series of beliefs and views that affect the internal shape of orientation and this also influence his attitude of external factors and some personal scale of wants (Schoon and Grotenhuis, 2000).

Burton and Wilson (2006) also derived a four kinds of typology (*agricultural producer, agribusiness person, conservationist, and diversifier*) to investigate whether identity could explain different degrees of engagement with environmentally friendly (multifunctional) farming. They recognise that farmers may maintain all individualities concurrently and, where the situation arises, express the most suitable identity with its expression of beliefs, roles and attitudes. They argue that this view might explain the inconsistencies previous researchers McDowell and have found between farmer's expressed attitudes towards conservation and their actions towards the environment (Sparks, 1989).

2.19 Entrepreneurship Education and Training

Entrepreneurship training to improve its education is a determined interference by the trainers in the of the learners to contribute to entrepreneurial abilities and competencies to allow the apprentice to endure in the realm of businesses. One of the paramount means to develop the rural economy is to inspire more persons to come to be entrepreneurs. The greatest approach to meet this objective is via education and training about entrepreneurship. Galloway and Brown (2002) opined there have been great interest in entrepreneurship education and training in the recent years.

Alberti, sciascia and poli (2004) described entrepreneurship training/education as the organized formal transference of entrepreneurship skills which also means to the idea, competencies and mental knowledge used by persons in the process of initiating and developing their ventures. Another view of entrepreneurship education is the term given to someone who has innovative ideas and transforms them to profitable activities (Omolayo, 2006).

Arogundade (2011) noted that entrepreneurship education and training entails philosophy of self-reliance such as creating a new cultural and productive environment, promoting new sets of attitudes and culture for the attainment of future challenges. Training, according to Mullins (2010), is the process of systematically acquiring job-related knowledge, skill and attitude in order to perform with effectiveness and efficiency specific tasks in an organization. He stated further that the acquisition of knowledge and skills during training is not desired for its own sake in industrial and commercial enterprises, and that it is utility that predisposes an organization to invest financial and material resources in it. Entrepreneurial orientation is the development of entrepreneurial skills, effective and efficient application of the skills in management of business to create a significant difference from other business, recognizing the skill and allowing it to function effectively.

Training to improved entrepreneurship education is vital for economic growth, particularly in betterment of the quantity and quality of entrepreneurs to come in future. The purpose were development in personal attitudes, skills of beneficiaries, qualities and formal knowledge of entrepreneurship. The grouping for entrepreneurship education (2004) listed that entrepreneurship knowledge should happen at stage of life. Stages consist of five levels such as start-up and growth stage, basic awareness of skill and innovative application. Findings had confirmed this view that the stimulation and development of activities of entrepreneurship would assist the spreading and specialization of economic activities of

agriculture. This will induce even the development of farmers in a country (Ogundele 2007; Adesiji 2006). Likewise, Osuagwu (2002) observed that entrepreneurial growth in Nigeria must be seen as a speed-up activities to skyrocket the rate of economic development, create more employment opportunities, minimise import of factory-made products and also reduce the trade limit that happens from such imports. Also, Ariyo (2008) noted that if Nigeria wants to reach its full potential regarding economic and social developments, it cannot afford to ignore the importance of its indigenous entrepreneurs and the contributions that they make to the country's economy. Entrepreneurship remains the gateway to sustainable wealth creation in Nigeria (Ogundele, 2000). From the perspective of Matanmi and Awodun (2005), if Nigeria wish to escape the alarmingly high rate of joblessness and increase level of poverty, satisfactory attention must be tailored to the development of entrepreneurship. The authours finalized that Nigeria often stay in the stagnations because of the some couple of lack of motivation to emback on entrepreneurship, low level of awareness ignorance and low capacity building among Nigerians.

By providing entrepreneurial knowledge and skills, Enterprise education may, therefore, have a positive impact on entrepreneurial intentions (Peterman and Kennedy, 2003; Rae, 2007). Such knowledge and skills gained by incorporating internships in entrepreneurial studies provide opportunities for enactive mastery (Bandura, 1997) and are likely to enhance perceptions of desirability and feasibility towards entrepreneurship (Audet, 2000). Wiklund and Shepherd (2003), Charney and Liecap (2000) all put forward that a positive correlation exists between education and business creation. Effective entrepreneurship training of education is expected to be a strong relationship of the objective of entrepreneurship programme, the beneficiaries in the programme who received the benefits, the subjects of the entrepreneurship paths, the approach of delivery and the examination that will be adopted (Alberti *et al.* 2004). The successful contribution of entrepreneurship to poverty alleviation

and economic development in Lagos State depends on entrepreneurship training and orientation. Entrepreneurship, according to Ogundele (2000) is the process of emergence behaviour and performance of entrepreneur.

The primary goal of entrepreneurship in education and training, according to Roe-Odegard (2004), is to strengthen the individual's ability to see and exploit opportunities in an economic, social and cultural context. The role of the education system is, thus, to promote good behaviour and attitudes that stimulate the strenght for conjunction. They should be encouraged to believe in their own creative values, developing workplaces and taking responsibility in their local community.

Cheng and Chan in 2009 stated that entrepreneurship education can increase entrepreneurial self-efficacy, self-employment, and risk-taking attitude of the entrepreneur. Mitra and Abubakar (2011) had noted that entrepreneurship training for improved education is one approach to alleviate poverty, as there is robust empirical findings recommending that economic development over the years is needed to reduce poverty. Entrepreneurship can stimulate economic development and supprot higher educational attainment.

Akhuemonkhan and Raimi (2013) examined the plausibility of deploying entrepreneurship education as mechanism for employment stimulation in Nigeria. The researchers used quantitative research approach. Data collected was analysed with the use of linear multiple regression model (LMRM). The study established that entrepreneurship development is a vital weapon to reduce poverty; promoting employment and speed-up of realising promoting gender equality and universal primary education. They recommended that institutions concern must intensify effort to integrate entrepreneurship in the education systems.

Obiyai, Ekpebu and Ekubo (2011) that examined the growth of entrepreneurship training skill curriculum for Farmers entrepreneurs producing fish feed and fish marketing.

Entrepreneurial competencies are very vital for the point that for one business enterprise to attain its objectives, the entrepreneur must have certain entrepreneurial skills. The skills are necessary to assist in boosting the farm production industry, reduce cost of production and as well stimulate increased production of yam.

2.20 Roles of Agricultural Extension in Entrepreneurship Education and Training

Entrepreneurship training and education is very essential for economic growth, principally in upgrading the quality and quantity of entrepreneurs to come (Othman *et al.*, 2010). Both government and non-governmental organisation aimed at provision agricultural extension services are responsible to be intermediary in providing agripreneurship skill for rural farmers. Agricultural extension brings about changes, through education and communication in farmers attitude, knowledge and skills.

The role of agricultural extension involves dissemination of information; building capacity of farmers through the use of a variety of communication methods and help farmers make informed decisions. Sinkaye (2005) equates help in extension to empowering all members of the farm households to ensure holistic development. Christoplos (2010) posited that extension and rural advisory services (RAS) are significant to put farmers' needs at the core planning of rural development, ensure sustainable food security and poverty reduction while dealing with risks and uncertainty. Having more entrepreneurial can be a challenge for small-scale farmers. They will need help from extension workers (David, 2012).

Williams (2011) asserts that entrepreneurship is a learnable process that can be taught, nurtured, supported and enhanced through various types of education and training (formal or non-formal). Zamani pour (2007) says that if we don't adopt educational content with special rural needs, we do not have agricultural development. So education programs and educational

content should have strong scientific and practical oriented. High juo (1992), declaring that education is a necessary part in the rural development process and must be targeted to eliminate cultural shortness in the community and also to promote general knowledge and also professional information of society. Equivalent to the development of entrepreneurship, the needs for entrepreneurship education become apparent, especially to a developing nation like Nigeria. As Peter Drucker (1985) once states that entrepreneurship is not magic, it's not mysterious, and it has nothing to do with the genes. It's a discipline. And, like any discipline, it can be learned. In addition to that Gorman, Hanlon and King (1997) also agree that entrepreneurship can be taught or at least encouraged.

Scorson (2003) in his study "Encouraging Entrepreneurship in Rural Societies ", introduces entrepreneurship as a suitable instrument in rural economic development and asks: "What kind of public programs can be suitable for this purpose?" He continued that protecting rural development is some-thing more than traditional supports such as providing funds. He emphasises that are providing an entrepreneurial atmosphere depend on education. He defines different roles for extension in promoting local entrepreneurship. One of the most important functions of extension are acting as facilitators; supporting programs and provide a connection with sponsors; local programming and implementing interactive training for the local workforce.

In so far as enterprise training provides management support and business awareness, it affords small farmers a well-knowledge of their opportunities and how they can be managed (Davis et al., 2008). Chipeta, Christoplos and Katz (2008) supported this, noting that a lack of business and market knowledge was the main barrier to achieving market gain among rural farmers, and emphasising that extension or advisory services targeted at rural smallholders should, therefore, include marketing and business advice and knowledge of agricultural value chains, furthermore to technical knowledge. Furthermore, enterprise training can help

smallholders to introduce progressive production techniques. Davis *et al.* (2008) suggested that teaching focused on enterprise skills, such as market analysis, distribution and business management, would support small-scale farmers in identifying the technologies that would benefit farmers most, and would assist them to adopt agricultural innovation.

The development of entrepreneurship among small and marginal farmers on agricultural production and subsidiary occupation is possible by grouping farmers, farmers association, cooperative farming and co-operative marketing system with proper linking to media like extension service, information technology, market price trend, and monsoon forecasting system. Example of a study of the impact of entrepreneurship training on rural poultry farmers by Ezeibe *et al.* (2014) showed that before the training, about seventy percent of the rural poultry farmers were unaware of some of the improved management practices like record-keeping, consulting veterinary doctors, vaccination, etc. However, after the training, all the farmers (100%) were aware of the management practices, and almost eighty-five percent adopted these practices. In this regard, Sherief (2005) opined that entrepreneurship training/education that expose farmers to life application issues is the capability of helping the farmers in adoption of innovative management practices and strengthen their trust and ability to risk and accept innovative technology. To buttress more on this, Badi and Badi (2006) ascertain that entrepreneurship education/training provides cultural social and technological awareness. Respond to this, Kuratko (2005) opined that farmers would venture into new technologies if they are taught the possible pitfall they are probable to face and the possible strategy to curb them. This makes entrepreneurship training of great importance in the adoption of new technology (Ezeibe *et al.*, 2014). A similar finding by (Suzani *et al.*, 2010) concludes that extension training can be active on the incidence of entrepreneurial characters of farmers. Of all these significances of rural entrepreneurship development,

research on the development of entrepreneurial and organisational competency in farmers is scarce, especially in developing countries.

Onyebinama and Onyebinama (2010) studied the impact of extension education on entrepreneurship development in Nigeria agriculture. The study found that most farmers in Nigeria have limited entrepreneurial (technical and managerial) capacity due to old age, illiteracy, lack of skill in agricultural production and gender-related constraints. The study further found that the primary aim of the present extension training practices in Nigeria is the dissemination of agricultural information on and in the introduction of improved farm technologies to farmers. This is without any provisions for enhancing the capability of these farmers to cope with the variation in production organisation resulting from the introduction of the new technologies.

Zainalabidin, Golnaz and Mad (2011) assessed the state and effectiveness of informal entrepreneurship extension education among Malaysian farmers especially the members of Farmers' Organization Authority (FOA). The results show that informal entrepreneurship education is not able to provide the entrepreneurship skills acquisition as expected. The findings also indicate that the level of understanding on "what is entrepreneurship" is still low among the FOA members.

McElwee (2006) noted that developing entrepreneurial and organisational competency in the agricultural sector can be problematic. On the one hand, to what extent can such skill be passed on? The creation of a new business based on the perception of opportunity, the work that implies, progressing from an idea to a concrete and valuable proposal, and obtaining the resources necessary, seem to be more an art than a science. Consequently, educational processes are required for farmers to develop such competency.

Among those capacities required for the success of an entrepreneur, two highly related concepts have been widely mentioned in the entrepreneurship literature: entrepreneurial orientation and market orientation (Baker and Sinkula, 2009). Organizations with high entrepreneurial orientation distinguish themselves by 1) constant innovation in their products and markets; 2) proactive decision making, and aggressive competition with other companies, and; 3) risk-taking in business (Basso, Fayolle, and Bouchard, 2009). These three dimensions have also been recognised as critical entrepreneurial attitudes in the agricultural sector (Pyysiäinen *et al.*, 2006).

Center for Rural Entrepreneurship (2005) noted that the motivating of entrepreneurship, its function in society and the opportunities it provided for personal profit, appears to be necessary for facilitating economic development. Policies geared toward enhancing the entrepreneurial capacity of a community will have the most significant impact on the level of entrepreneurial activity.

McElwee (2008) noted that Entrepreneurial and market orientation, as well as organisational competency and the ability to use social networks, are essential capacities upon which farmers can build competitive advantages to help them succeed in free markets and eventually achieve sustainable development. In the process of developing such competency, farmers must become less dependent on government subsidies, respond to the growing demand for quality, and respect the natural environment.

Mohamed and Rezai (2011) assessed the state and effectiveness of informal entrepreneurship extension education among Malaysian farmers especially the members of Farmers' Organization Authority (FOA). They interviewed four hundred farmers who were the members of FOA with a structured questionnaire. They found that informal entrepreneurship education is not able to provide the entrepreneurship skills acquisition as expected. They also

found that the level of understanding of “what is entrepreneurship” is still low among the FOA members.

2.21 Literatures on Constraints to Farming Entrepreneurship

Ofana, Efefiom and Omini (2016) examined the constraints to agricultural development in Nigeria found that low technology dissemination in agriculture is included of the factors foundd as constraints to agricultural growth in Nigeria.

FAO (2012) written by David noted that there are many challenges that these farmer-entrepreneurs face: social barriers, economic barriers, regulations, access to finance and information, and their own managerial capacity to cope with risks and changes and to seize opportunities.

Mavhungu (2015) who examined the complexities and constraints affecting entrepreneurial and Agri-business in South Africa. The study found that entrepreneur farmers’ formal school educational status and necessary literacy skills multiplication, also; subtraction; and division were reasonably higher while technological skills in farm risk management and production, and managerial skill in business financial ability; budgeting and marketing were low amongst the farmers.

Pyysiäinen *et al.* (2006) argued that developing the entrepreneurial skills of farmers is one of the Third Call tasks in the 6th Research Framework Programme of the European Union (Priority 8, task 1.1.17). This is described - ‘to identify and analyse the social, economic and cultural factors, including educational processes holding back farmers from the development of entrepreneurial skills necessary for the successful growth of their farming businesses.’

Abdul and Norhlilmatur (2013) examined the factors that influence the interest of youths in Agricultural Entrepreneurship in Malaysia found that attitude, acceptance and knowledge are the factors that influence youth to become agriculture entrepreneurs.

Arisena, Mustadjab, Setiawan and Koestiono (2014) examined the “Influence of Environment and Entrepreneurship Factors toward the Farming Performance found that physical environment has negative influence on entrepreneurship of farmers, while the economic climate has a positive control towards entrepreneurship of farmers. Physical and financial backgrounds do not influence the farming performance, but the physical and financial backgrounds have an indirect impact on farming performance through entrepreneurship. The study concluded that entrepreneurship skills had a positive impact on farming performance.

Chandrashekar and Bahal (2012) examined “Factors Influencing the Entrepreneurial Behaviour of Agricultural Graduates”. The factors found to influencing entrepreneurial behaviour include: planning orientation, work orientation, personal efficacy, market orientation, location, business acumen, dynamism, service orientation, in-depth knowledge, achievement motivation, social networks, interest, internal control, marketing strategy and innovativeness.

McElwee (2006) states several barriers to the development of agricultural businesses have been identified: inadequate legislation and regulation, a lack of entrepreneurial spirit, a low position in the experience curve, small production scale; lack of capital, limited access to markets,;; poor management skills on the part of farmers, isolation from learning centers, and distribution channels and business support

Ngorora and Mago (2013) identified the challenges of rural entrepreneurship in the Eastern Cape Province of South Africa. Questionnaires were distributed to establish the perceptions of fifty-three rural entrepreneurs. Most respondents eighty-three per cent depended mainly on

entrepreneurship for income generation. Findings from the study recommend that lack of equipment, lack of finance, small markets, distant markets, poor transport system, lack of networking, corruption and lack of marketing initiatives, and lack of electricity hinder rural entrepreneurship in Nkonkobe Municipal Area.

McElwee (2006) reviewed literature titled “Farmers as entrepreneurs: Developing competitive skills” concludes that farming is not a homogeneous sector; farmers operate in a tightly constrained and regulated, complex and multi-faceted environment, which stands as a crucial barrier to entrepreneurial activity. McElwee (2008) suggests that networking, innovation, risk-taking, team working, reflection, leadership and business monitoring are fundamental to developing and improving the farm business. Equally, Morgan *et al.* (2010) emphasise what they describe as higher-order skills, namely networking and utilising contacts, creating and evaluating a business strategy; and recognising and realising opportunities. Elsewhere, it has been planned that farming and specialisation require different skills (Pyysiäinen *et al.*, 2006); as McElwee (2008) notes, ‘farmers are business people in that they run businesses, but in practice, they do not necessarily have well-defined business skills.’

Factors driving farming entrepreneurship according to Verheul *et al.* (2001) are: (1) Resources, (2) Ability, (3) Personal characteristics, (4) Preference and (5) Culture.

Stimulant factors of farming entrepreneurship according to Dutta (2004) are: (1) Financial (economic) and background of agricultural activities, (2) Ability experience was formed in psycho-psycho-socio-cultural profile, (3) Personal characteristics, (4) Innovation-risk and (5) Psycho-socio-cultural.

2.22 Empirical Literatures on Poverty of Farmers

Yusuf (2008) studied the poverty status of farm households in Ibadan metropolis of Oyo State, Nigeria, using 200 questionnaires that were distributed among farming households

selected from 2 local government areas in the municipality. Descriptive statistics and qualitative modelling techniques were used to analyse the data. The findings of the study showed that those households who engaged in crop farming had the highest poverty level of fifty percent while mixed farming and livestock farming households had a poverty level of thirty-seven percent and seventeen percent respectively. The logistic regression showed that urban farming reduced poverty in the metropolis.

Akinbile (2002) in a book titled: Technology dissemination, agricultural productivity and poverty reduction in the rural sector of Nigeria, found that adequate technology dissemination would improve agricultural productivity. This will result in increased crop production which will invariably reduce poverty in the country. In any case, poverty can only be reduced in the country if there is a considerable increase in government concern and on the effort of the Non-Governmental Organizations.

Akighir (2011) examined rice processing and poverty reduction in Kwanda local government council of Benue State, Nigeria, using sample survey methodology. The study measured poverty status using head count ratio and poverty gap measures. The findings of the research showed that rice processing reduced the poverty status of the respondents. The challenges of rice processing were identified to include low capital, poor transportation network, and low price of locally processed rice among others.

World Bank (2001) in Chimobi who studied the poverty in Nigeria and some dimensions and contributing factors. The study noted that poverty influenced by unemployment tends to increase the high rate of offence and violence in the country. Most unemployed youths resort to crimes such as armed robbery, kidnapping for ransom, internet fraud and other forms of fraudulent activities. The reservation wage they get from these activities is typically barely enough to take care of their necessities.

Ajala and Fakoya (2003) examined the role of women's small-scale business activities towards poverty alleviation in Ibadan North East local government area of Oyo State, Nigeria. The study used structured questionnaires to generate primary data from one hundred and eighty small-scale women entrepreneurs. The data were analysed using frequency Tables and percentages; while chi-square test was used to evaluate the research hypothesis. The results showed that small-scale businesses are effective in reducing poverty in Oyo State; and that the main challenges faced by small-scale enterprises are lack of capital and necessary infrastructure.

Onakoya, Fasanya and Abdulrahman (2013) examined the impact of financing small-scale enterprises on economic growth from 1992 to 2009 in Nigeria. The study combined several econometric estimation techniques. The results indicated that loan given to small farmers entrepreneurs have a positive contribution to the economic performance while the intended rate has a negative influence on economic development. The study thereby concluded that the most significant and worst problem confronting SMEs in Nigeria is managerial capacity and that access to capital or finance is necessary but not a sufficient condition for successful entrepreneurial development.

Aremu and Adeyemi (2011) identified the role of small and medium enterprises in promoting economic growth and development in Nigeria. The study identified the primary advantage of the sector as its employment potential at low capital cost since the labour intensity of the SME sector is much higher than that of the large enterprises. The study, therefore, concludes that besides the growth potential of the sector and its critical role in the manufacturing and value chains, it also has multiplier effects on the rest of the economy.

Jibril (2009) examined the poverty level among small-scale business entrepreneurs in Bauchi State. Data were collected from sixty respondents using questionnaires; while descriptive

statistics and Foster, Green and Thorbecke index were used to analyse the data. The results indicate that average annual incomes of the entrepreneurs were twenty-five below the poverty line.

Ali and Ali (2013) identified the relationship between entrepreneurship development and poverty reduction at Benadir region in Somalia. They use correlation research design comprised of eighty participants of both micro and smallscale enterprises. The study found a weak and positive correlation between entrepreneurship growth and poverty reduction. Entrepreneurial leadership is the ability to influence others to manage resources strategically to emphasise both opportunity-seeking and advantage-seeking behaviours (Covin and Slevin, 2002).

Effective entrepreneurial leaders believe that to create the most value, firms must be “*strategically entrepreneurial*” (Covin and Slevin, 2002). Covin and Slevin (2002) argued that entrepreneurial leadership is informed by six imperatives.

1. Nourish an entrepreneurial capability
2. Protect innovations threatening the current business model.
3. Make sense of opportunities.
4. Question the dominant logic
5. Revisit the “deceptively simple questions”.
6. Link entrepreneurship and strategic management.

2.23 Theoretical Framework of the Study

This study has been driven to choose the social construction of knowledge theory and sustainable livelihood model to assist in making sense of the data.

2.23.1 Social Construction Theory

The lack of relevant theories in entrepreneurship is well documented (Anderson and Stanawaska, 2008). Many of the existing entrepreneurship theories lack common and conclusive explanations about the phenomenon under study. Because of the above reasons, this study has used a social construction theory to assist in understanding the phenomenon under investigation. Indeed, Smith (2006) had argued that what we know about entrepreneurship is itself socially constructed.

Social Construction Theory: The ideas of this stance first come from the early work of Karl Mannheim; “*Sociology of Knowledge*” from the works of Berger and Luckmann (1966). The social constructionists believe that people who live in their society are interested in understanding their life worlds. They attach meaning to different things which are found in their environment. These meanings have diverse multiple perspectives (Creswell 2009).

Social constructionists agreed to the trust that the way we know of the world is a product of a historical process of interrelationship and negotiation between groups of persons (Farmers and Extension agents). Social constructionists also maintain that the goal of research and scholarship is not to produce knowledge that is fixed and universally valid but to open up an appreciation of what is possible. Social constructionists concluded that realities are socially constructed and that expertise is sustained by social processes (Lit and Shek, 2002).

Application of Social Construction Theory: This study thus relies on the views of the poor yam farmers entrepreneurs who are involved in the study. Questions asked were broad and general so that the study can try to understand the respondents’ situation through discussion and interactions at the research setting. Socio-economic characteristics were solicited to assist in capturing the background and context. The study involved focus group discussion which allows respondents to explain subjective meanings of their lifeworlds. They usually negotiate these subjective life worlds in their historical and social contexts. These meanings develop

naturally as part of their daily interaction and the social-cultural world they live and carry out in their yam entrepreneurial activities. The study's background frames the interpretation and thus puts it in the research to accept the interpretation flow from personal and historical experience (Creswell, 2009). The aim here is to develop and make sense of the respondents' perceptions about their humanity. As a result the study will produce a "*substantial description*" of the group (yam farmers) under study that may aid in generating or inductively developing a pattern of meaning.

It can be questioned that it is by social interactions and inclusion of poor yam farmers in entrepreneurship skill development that yam entrepreneurial activities can make a meaningful contribution to livelihood assets and reduce poverty of farmers that they were unable to achieve individually. It is therefore in this way that the interactions of extension agents in improving the knowledge and understanding of yam entrepreneurial skills and positive attitude of yam farmers can be formed. Therefore, to analyze how yam entrepreneurial activities had contributed to assets of farmers, and how extension agents help farmers in obtaining entrepreneurial skills and capitals/resources and the whole process as a whole, the social construction of knowledge was seen to be appropriate. The decision of this perspective was decided by the logic of appropriateness rather than the logic of consequence. This means there are many possible alternative theories and perspectives in studying the same phenomenon.

The final choice of the theory depends not only on the objective of the study but also on its explanatory power. The assumption is that in entrepreneurial activities, like several other social process founded in the society are influenced by prevailing institutions such as agricultural extension organisations, among others the socio-cultural norms of any national context. This particular study strongly believes the social constructionist theories is the most suitable. The kind of this study may hinder the utilisation of social construction theory

because of its high-status explanatory influence but used in combination with a middle range theory, should have a reasonable, more practical explanatory power.

2.23.2 Sustainable Livelihood Approach

To complement the chosen theory, this study decided to adopt a more practical lens, the sustainable livelihood approach. This approach is more appropriate for this research as they are capable of aiding in understanding the process of the set objectives of yam entrepreneurship in a developing country like Nigeria.

History Sustainable Livelihood Approach (SLA)

SLA emanates within the context of the intentional approach to development through which development stakeholders were seeking to maximise the efficiency of their interventions to assist the poor. It is in effect a diagnostic tool which provides a framework for analysis leading to concrete suggestions for intervention (Allison and Horemans 2006; Tao and Wall 2009). It was typically applied in poorer countries as part of a planning phase for a response via policy, a development project or perhaps as the basis for more in-depth research.

Krantz (2001) argues that exist two paths of using SLA. Although there is an approach adopted by DFID which take SLA as a framework for analysis, while other developmental agencies such as UNDP and other NGOs adopt it for facilitating planning of strong projects and programmes”. The distinction made here would appear to be a rather fine one for the purpose of SLA is to help analyse a condition which would look logically fit with the use of the approach in implement projects. Farrington (2001) presents a more nuanced view of the different dimensions of SLA:

1. As a set of principles guiding development interventions that are community-led or not. The principal assumption here is that an intervention has to be based on research findings

rather than instigated in a top-down approach without sufficient knowledge of the people. SLA can thus be seen as a week checklist of points that need to be considered before an intervention is planned.

2. As a formal analytical framework to help understand what 'is' and what can be done. The structure helps aid an appreciation of the capitals which are available to families, their vulnerability and the participation of institutions.

3. As an overall developmental objective. In this case development is seen as the improvement of livelihood sustainability, perhaps by making capital less vulnerable or by enhancing the contributions that some capitals can make or even by improving the institutional context.

Definitions of Sustainable Livelihood Approach

According to Helmore and Singh (2001), sustainable-livelihood is an integrative framework, an opportunity to promote the cross-sectoral and cross-thematic approach that should be the hallmark of development work, the combination of the resources used and diversity of activities undertaken to make a living (Carney, 2003). Scoones (2009) refer to sustainable livelihood as coping with and recovering from stresses and shocks, improving its abilities and assets both now and in the future, while not neglecting the natural resource of the people.

A definition has been provided by Chambers and Conway (1992) some five years before the White Paper of the DFID. Stated that a livelihood includes the abilities, assets (stores, resources, claims and access) and activities needed for a way of living. A livelihood can also be considered sustainable when it can withstand and recover from stress and shocks. Livelihood can also be attributed sustainable when it maintain or enhance its abilities and assets, and provide life-long livelihood opportunities for the future generation; and which

contributes net gain to another livelihoods at the rural and global region both in short and long-term” (Chambers and Conway 1992).

Assets are the same as capitals, but it should be noted that how issues such as claims and access are considered. An asset may not necessarily be owned by a household for it to be an essential contributor to livelihood. As long as the family has access to it then it will help. Also, in this definition some strands coalesce. On the one hand there is a requirement for a sustainable livelihood to be able to recover from “stress and shocks” but it must have the strength to maintain and enhance abilities and assets into the future. A central element in this ‘resilience’ to stress and shocks may well be the diversification of elements that comprise ‘livelihood’. Hence a more diverse livelihood base could arguably be seen as more sustainable as shocks to one or more components can be compensated for by supporting others. But this is inference and may not always be the case. A simple assumption that one livelihood has higher sustainability than the other needs to be considered with caution.

Prior to publication of the White Paper, Carney (1998) provided a more straightforward definition of sustainable livelihood which has its strength from the definition of Chambers and Conway (1992). It stated that a livelihood involved the assets (including both material and social resources), capabilities and activities needed for a way of living. Furthermore, when merged with sustainability: a livelihood is sustainable if it can cope with and regain from stresses and shocks and sustained its assets and abilities present and in the future.

The DFID Approach

The acceptance of a livelihood approach within DFID leads to the International Development paper of UK Government White Paper published in 1997, where it was stated that the overriding objective of DFID is the removal of poverty in poor countries. One of the three

specific objectives designed to achieve this aim is a commitment to ‘policies and actions which promote sustainable livelihoods’ (Carney *et al.*, 1999).

DFID’s definition of sustainable livelihood follows the approach developed by IDS and which in leads to a revised version of the original definition broadened by Chambers and Conway:

The objective of DFID’s SL approach is to increase the agency’s effectiveness in reducing poverty by seeking to mainstream a set of central principles and a holistic perspective in the programming of hold activities to ensure that these correspond to issues or areas of direct relevance for improving poor people’s livelihoods. The principles element in the approach are listed below. These can be applied to any development activity and analysis.

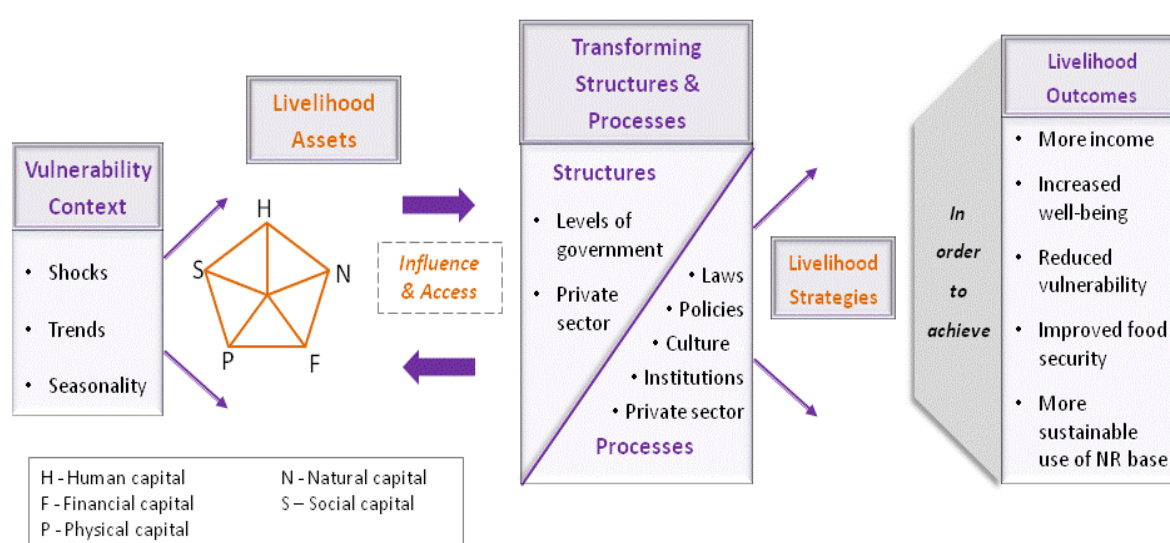


Figure 2: Sustainable Livelihood Approach
Source: adapted from DFID 2000 Sustainable Livelihood Approach

Vulnerability and Institutional Context

Once the capitals have been outlined and assessed for the impact they make (or could make) it needful to explore the vulnerability context in which they exist; what are the trends (over

time and space), shocks and stresses? Shock tends to denote a more sudden pressure on livelihood. For example, a serious flood and drought can severely affect both natural and physical capital in a short period. Cattles can devastate a yam in a matter of hours. Stress is a word used to denote a longer-term pressure. For example, an economic recession can take place from years past and lead to unemployment and poor markers for produce and labour use. This is agreeably a subjective divide, though it does provide the researcher to take a range of pressures that can exist. It may be a problem to predict such situation although historical doing and modelling can produce clues. The historical inheritance could in fact be highly essential within SLA (Scoones and Wolmer 2003). Obviously, it is not only a matter of knowing what is happening presently but what is the trends and what will be in the future. Some assets could change little over a period of time (e.g. land and buildings), others such as cash and social participation in networks can be volatile and depend upon movement of people into and out of the household. For example, increasing population density can result in fragmentation of land holding.

Vulnerability in shocks may vary on another. A drought, for instance, will influence natural capital and invariably minimised crop yields, but may have no significant effect on another capital. In the longer term, a severe drought could impact on a wide range of capitals, including social and human as people emigrate. Similarly, flooding may destroy physical and natural capital while having little contribution on the others.

Uly *et al.* (2011) provide an example of such an SLA employed to explore options for vulnerable communities living in coastal parts of the province of Albay, Philippines. But these authors also make the critical point that vulnerability can vary at low scales. Hence capitals will change in their resilience to different types of shock and the intensity of that shock, and this can change over relatively small spatial scales; even within a village. Wlokas

(2011) came to similar conclusions about the installation of solar water heaters for households in South Africa.

Furthermore, it is needful to examine the policy and institutional structure in which the capitals exist, as well as the legal aspect, and what rights may not present (Ashley *et al.* 2003) as some equities could be vulnerable to certain shocks. It may be that authorities can act and limit any damage which occurs or perhaps provides recompense and assets may also be destroyed by flooding can develop structures in place to reduce the likelihood of the disaster occurrence. Similarly, there may be publically financed extension services available which can support the knowledge of farmers and provide advisory help with irrigation structure. Government services are not the only needed sector but available non-governmental and private agencies that can render support for means of livelihoods. Finally, it is not only a matter of taking into consideration each institution in isolation that matters but also how they do or do not work together.

The significance of institutions is often reiterated in the sustainable livelihood studies, and in a variety of structure that goes beyond the examples provided. Institutions influence the natural access to many of the capitals as well as peoples opportunities and choices. They can help govern social relations and power structures at many scales. Challies and Murray (2011), for example, highlight the importance of institutional support for small-scale raspberry growers in Chile by improving their ability to comply with safety and required standards and hence profit and retain market access through the global value chain. Such unlimited access to global markets can influence the sustainable livelihood of the farmers. Only when vulnerability and institutional contexts have been considered can it be possible to develop approaches that help improve livelihood (i.e. generate favourable livelihood outcomes). The notion is that these intended outcomes would have feedback to improve livelihood assets and take them more resilient.

Regarding rural livelihoods, Sonne (2010) indicates that agricultural and small farming systems focus on innovation, but still tend to be in agriculture and interested in small farms. The sustainable livelihood approach, however, takes a people-centered approach that focuses on participation and responsiveness of end users. Furthermore, the rural sustainable livelihood approach emphasises a holistic view of the rural sector. In this relation, Barrett and Brown (2001) state the need for farm household diversification into non-farm activities, in many cases naturally emerging from diminution or time-varying returns to labor or land from market failures or frictions from *ex-ante* risk management, and from exposed coping with post adverse shocks. Hawkins (2009) points out that livelihood is the way people make a living. Understanding different livelihood objectives of rural households and managing different assets are crucial.

Strength and The Attractions for SLA in this study

SLA is a practical framework for examining a concept of sustainable livelihood. SLA is no doubt broader concept has had much more reporting within the academic literature. This study follow suit because of the following proven strengths:

1. Given the benefits of SLA, it is to be expected that it featured within the academic literature. Large number of journal papers which have the terms Sustainable Livelihood Approach or Sustainable Livelihood Analysis in the aspect of the abstract. It is, therefore, the same analysis to that presented in this study about sustainable livelihood, and as in that case, it needs to be stressed that this is not an ideal measure of usage, but it does nonetheless provide a clue. It should also be stressed that these are refereed papers; their content has been checked and approved by other researchers.
2. **Appropriate Framework for Poverty Reduction:** These good interpretations and broad of the SL framework have, in one way informed some growth ambition to apply what is

currently becoming recognised as an SL approach to poverty reduction. This emerged in answer to negative experiences with traditional strategies to poverty reduction, and likewise as a result of current findings regarding the nature and knowledge of poverty.

Three influence explained the reason SL strategies has been adopted to reduce poverty. The first is the realisation that while economic growth may be essential for poverty reduction, there is no direct relationship between the two since all depends on the capabilities of the poor to take advantage of expanding economic opportunities. Thus, it is essential to find out what precisely it is that hinder the poor from reducing their poverty condition so that support activities could be designed consequently.

Secondly, there is the realisation that poverty as perceived by the poor themselves — is not just a matter of low income, but include another angle such as ill health, low education attainment, lack of social services, etc., as well as a state of vulnerability and perception of powerlessness in general. Moreover, it is now known that there are relevant links between distinctive dimensions of poverty such that alleviating it in one have positive effects on another.

Improving people's educational status may have a positive influence on their health standards, which in turn may improve their production ability. Reducing poor people's vulnerability regarding exposure to risk may raise their propensity to engage in previously untested but more productive economic activities, and so on. It is now known that the poor also know their condition and needs best and must, consequently, participated in the design of policies and projects aimed to improve the living standard of the poor. Given a say in framework, they are usually more committed to implementation. Thus, participation by the poor improves project performance.

Sustainable livelihood approaches should be drawn by a dedication to reducing poverty. Although they can, in theory, to perform the task with any stakeholder group, an understood principle for DFID is that activities should be structured to maximise livelihood gain for the poor (Ashley and Carney, 1999).

A livelihood comprises the assets, activities and capabilities, necessary living (Scoones, 1998). A livelihood is known to be sustainable when it can adapt with and regain from shocks, stresses and shocks, and maintain its assets and capabilities, presently and in the future, while destroying the natural resources (DFID, 1999). According to Scoones (1998), five critical indicators are essential for examining sustainable livelihoods. They are well-being and capabilities, livelihood adaptation, poverty reduction, vulnerability and resilience, and natural resource base sustainability.

The framework for sustainable livelihoods has helped in thinking about the things that poor might be very vulnerable to holistically. The assets and input resources that assist them to thrive and succeed, and the policies and institutions that contributed to their livelihood (DFID, 1999). Sustainable livelihood approach framework and its various factors, which constrain or improve livelihood opportunities and explained how they are interrelated with each other. The concept provides a way of thinking through the different influences (constraints and opportunities) on livelihood and ensuring that essential factors are unrecognised (Ashley and Carney, 1999).

When it comes to impact assessment, this means that changes in measurables (e.g. cash, yield) must be examined in their own right, but regarding the contribution they make to livelihoods. That contribution may be *direct* (e.g. adding to income, health, food etc.) or *indirect* (affecting their assets, activities and options, and ability to cope with shocks). The way people live their lives is changed just as significant as more noticeable changes in *what*

they achieve. Both are regards livelihood assessment, other vital features of such evaluations are the emphasis on cross-checking multiple types of data (qualitative and quantitative, subjective and objective) and on assessing both local-level and higher-level (regional, national, international) influences on livelihoods.

Compare this wording from the Human Development Report of 1990 to that of SLA as envisaged by DFID 2009: The livelihoods approach considered as people first way for development. People rather than the resources and inputs they use or the governments that serve them—are the priority importance. Agreeing to this principle may well translate into providing support to resource management or good governance (for example). But it is the underlying motivation of supporting people's livelihoods that should determine the shape of the support and provide the basis for evaluating its success.

SLA is comprehensive and people-centred in a direct sense (Glavovic 2006a; Chang and Tipple 2009; Høgh-Jensen *et al.* 2010), and depends upon the involvement of those meant to be helped by change as well as their local knowledge (Mercer and Kelman, 2010). In line with participatory approaches, in general, this provides opportunities for community-based learning where people can be taught (Butler and Mazur, 2007). As a result SLA builds upon the long history of the participatory movement in development, and techniques and methods honed over years of application in stakeholder participation can also be used within SLA. SLA also represents an acceptance that multiple-sectors have to be considered i.e. it is holistic (Tao and Wall, 2009).

Krantz (2001) in a broader term pointed the need for holism. The idea of Sustainable Livelihood (SL) is an effort to go beyond the traditional definitions and approaches to reduce poverty. These had been known to be very slim because they target only on particular aspects

or manifestations of poverty, such as low income earned, and did not consider other vital issues of poverty such as vulnerability and social neglect.

SLA broad view through its very design and is especially relevant in conditions where people may have several contributions towards their means of livelihood instead of one salary (Tao and Wall, 2009). It also forces a concern of relationship. McLennan and Garvin (2012) for instance employed an SLA to explore livelihoods in North-West Costa Rica and showed how the intervention was necessary to help mitigate the harmful effects of ‘locally-felt’ trade-offs between conservation on the one hand and use of resources on the other. Such compromises are common where people have little choice, and thus SLA can help highlight the issues and explore possible solutions. Indeed this is not just an issue for rural populations, and SLA has been employed in urban contexts (Simon and Leck, 2010). There is a suggestion underlying all this in that change take place and livelihoods are progressive rather than static. The importance of understanding the history of where people are helping in appreciate the reasons things are the way they suppose to be and reasons people perform what they do (Scoones and Wolmer, 2003). Intrinsic in this is the nature of making a decision and attacks that can happen. Addition of such progress from the outset as a sector of the analytical framework provides SLA with a known gain, although in practice the piecing together of historical context may be complicated.

Finally, SLA pointed out what the purpose of an intervention can be; need for specialisation for example as a way of hindering exposure to risk. There are no proper schematics, blueprints or correct approach that ‘must’ be utilized, one framework. Thus SLA is a changeable approach that can be done in many various ways depending on local sector and expertise available for the analysis. It can also be used as a concept for developing a pointer to help policy-makers and others chart progress towards attainment of sustainable livelihood (Bondad-Reantaso *et al.* 2009; Bueno 2009; Nha 2009).

Weakness and Critiques of Sustainable Livelihood Approach

SLA, like evidence-oriented approaches in all, has had its problems and its proponents are always careful to fact out that it is not a solution (van Dillen 2002; Sillitoe 2004; Small 2007; Kelman and Mather 2008). Several critics are outlined as follows, though it has been observed that many of these are by no means different to SLA.

- (i) The people-oriented language of SLA people are weirdly invisible. One of the capital is human, institutions, influences, policies but people seem to be missing. The risk is that SLA can become a somewhat automatic and quantitative grouping exercise which function clearly into the widespread critiques offered through post-modernists and indeed harks back to the ‘new families economics’ strategies and its main objective on *clusters of task-targeted activities*” (Guyer and Peters, 1987) from which SLA sprang.

However, quantification does have advantages; it certainly feeds into the current vogue for numbers and statistics in social policy and thus can have significance with those using the information to bring about change (Sorrel 2007; Neylan 2008). But SLA has little about ‘culture’ *per se* even though this is an important consideration for communities (Tao *et al.* 2010). Indeed if anything ‘culture’ may be perceived by development practitioners as a constraint to an understanding of opportunities and potential interventions (Daskon and Binns 2010).

Also, absent from the SLA framework are essential considerations such as leisure, and this can have a significant impact on resources. For instance, in their study of the fishing of Atlantic billfish off the coast of West Africa, Brinson *et al.* (2009) noted the importance of the recreational fishery on the stock and recommended that this should be included in an SLA alongside the more traditional focus on fishing to support livelihood. Hence the inconsistency

of a people-centred approach almost entirely escape some of the vital aspects of human existence; people have a tradition and also try to enjoy their lives.

ii. it is unknown how to assess capitals within SLA. The Pentagon is a clean representation of essential asset groups, but each could contain many elements and how are these to be evaluated? Is it needful for all of them to be measured or only some, and if the latter then how is to be an influence which to examine? There is an element of ‘context specificity’ here, but at least superficially it might seem straightforward. For farming households, the apparent physical asset of importance is land and inevitably land.

3. It should be noted that what consist capital of SLA is open to question. The five capitals in Figure 1 should not be taken as being definitive, although much can depend upon how broadly definition of the capitals.

Serageldin and Steer (1994) noted that there are four kinds of capitals that are needful to qualify as sustainability:

- Capital made by man
- Natural capital
- Human capital
- Social capital

Serageldin and Steer further stressed that there is need to be presented in monetary terms—not tricky task. Some have also noted for the addition of spiritual capital, distinguish between social and human capital, which encapsulate the gain to society provided by religious, moral/psychological beliefs and practices.

4. Odero (2006) has also suggested that information should be seen as another capital and this is distinct from what some refer to as intellectual capital. A dilemma is that spiritual and

scholarly capital may look to be subsets of social capital, and indeed the boundaries can be quite fuzzy. It may come down to what is connected with persons and the society as a whole.

5. Bebbington (1999) have also argued that capital within SLA should not just be seen as factors underpinning production, in a mode akin to that adopted by Adam Smith, but in more nuanced ways regarding how people can engage with others and what such engagement provides for all. For instance, there is the following information made by Bebbington (1999): “People’s livelihood assets are not just approaching through which they make a living: they also give meaning to the person’s world”. Capital is, therefore, a means by which people can *“undertake more productive and meaningfully with the world, and most significantly the ability to change the world”*. Thus they are not just ‘things’ that go into a production process but also a basis for power to act and ultimately to bring about change in society. Hence Bebbington (1999) suggests that these capitals take on three distinct roles:

- vehicles for influential action (make a living)
- hermeneutic activity (make life important)
- emancipatory action (challenging the structures under which one makes a living)

There is a greater nuanced implication of capital and possibly can welcome information technology and improve connectivity through devices such as mobile phones (Sey, 2011). It can also recognise religion, culture and recreation as they can help to make living meaningful, but such hermeneutic and emancipatory uses of capital are often not included with SLA.

The last portion of the definition can be concluded as a social network, but this is a weak term. Indeed membership of social networks can leave fluid. Lyons and Snoxell (2005) for example explored innovation in the social capital of migrant people in business to Nairobi in Kenya. The author explained that when they use social linkages, they already had in the venue (what was noted as inherited social capital), they nextly developed new ones in the

urban context. Networks were built opportunistically but were nonetheless critical to success. Korf (2004) came to related conclusions about the importance of social networks after using SLA to explore livelihoods in war-torn regions of linkages with vital holders of authority. Grant (2001) refers to what she calls ‘bonding’ and ‘bridging’ social capital, with the former influencing the ability of a group to act together while the latter is the ability of a group to collaborate with others.

6. The inclusion of social services in this list is an intended one given that as Daskon and Binns (2010) and Tao *et al.* (2010), amongst others, have noted out. Sustainable Livelihood Approach often does not effectively address traditional, cultural and religious values, even within the social capital class, and may even view them as a challenge. In effect to the services in the are of two kinds. Firstly there are the structures that take place within ecosystems if humans are present or not for example, nutrient cycling soil formation, and photosynthesis and. Humans can change the rates of some of these by management, but they are natural process nevertheless and will take place even if people were not around to control them. Secondly, there are the services which equate more to ‘benefits’ that people can gain from EG&S. Hence recreation is listed as a ‘cultural service’ but is not a natural ecosystem process. Similarly, a forest will produce wood and products that can potentially be consumed by humans as food and medicine irrespective of whether humans are present. EG&S can tend to conflate natural processes with the benefits that people gain from them. Fisher *et al.* (2008) suggested that ‘services’ within EG&S be subdivided into two types:

1. Intermediate services. These are the natural process that occur within ecosystems, but which can be managed by people to enhance their usefulness to support final services
2. Final services. The benefits which people gain from the intermediate services. For example, drinking water, food, medicine and timber.

2.24 Conceptual Framework of the Study

The conceptual framework of this study presents the idea of author on the relationship between independent (socioeconomic characteristics and characteristics of yam entrepreneurial activities, Attitude, constraints, knowledge and capability of respondents), the intervening (agricultural structures and processes that can influence yam farming activities) and dependents variable (sustainable livelihood assets of respondents).

The idea of the sustainable livelihood assets is basically informed by the working definition of livelihoods. The definition which stated as the **activities, capitals and assets** (financial, physical, social, human, natural capitals), **capability or competency** and **the access** to these (mediated by institutions and social relations) that together determine the living gained by individual or household (modified of DFID 1999 and Ellis 2000). DFID (1999) added that livelihood is sustainable when it can cope with and recover from it **vulnerable stresses and shocks**, and maintain or **enhance its capabilities and capitals**, both now and in the future, with no effect on the natural resource base. Each of the significant words highlighted in bold was what informed the pieces of the variable used to measure sustainable livelihood in this study.

The pieces of specific objectives derived from the definition were:

A. Independent (yam entrepreneurial activities)

Activities - Characteristics of yam entrepreneurial activities (objective 2)

Access to information – Sources of information (included in objective 2)

Capability: Knowledge and capacity building needs ((objective 5 and 6)

Vulnerable factors to sustainability: Constraining vulnerability factors (objective 7)

B. Dependent (sustainable livelihood assets of respondents)

Access to capitals and Assets – Access to capitals for yam entrepreneurial activities and Access to livelihood assets as a result of yam entrepreneurial activities (objective 4)

The flow: as presented in figure 2, the flow of variables starts from the independent variables. First, the independent variables in this study are of two sets: (1) the socioeconomic characteristic and characteristics of yam entrepreneurial activities of respondents; (2) sustainable livelihood input factors such as attitude, constraints, knowledge and capacity building needs. This is agreed on the basis that the two sets of variables are related and are likely not to be controlled by any other variable.

The flow from independent variables continue to intervening variables on forwarding arrow; this means that intervening variables could be a function of independents variables. The intervening variables are structures. The structure includes the ministry of agriculture at federal, state and local government levels, agricultural-related non-governmental organisations and processes of laws affecting agriculture, policies and programmes (Agricultural Development Programme (ADP), Bank of Agriculture etc.) to enhance agriculture, culture of the land and institutions like universities and agricultural research institutes].

The flow continues from intervening factors through a broken backward arrow to the second set of independent variables. This means that the intervening elements may or may not influence the dependent variables. In a situation of influence,

The positive influence for capacity building of farmers is expected from agricultural programme such as ADP and others concern private extension organisations. It is expected that farmers trained to build his/her capacity through agricultural extension agents is supposed to have changed in attitude, known various sources of information, effective way

accessing capitals, and how to cope with challenges in their various yam entrepreneurial activities (sustainability).

With these impacts of extension intervention of the big arrow pointed forward, it is expected that yam entrepreneurial activities contribute significantly to livelihood assets necessary to escape poverty among yam farmers (principal dependents variable).

In other words, the contribution (high, low or no) is expected to influence the independent variables that is, the socio-economic characteristics and characteristics of yam entrepreneurial activities resulting to poverty reduction and increases access to sustainable livelihood assets of yam farmers in of Ekiti State.

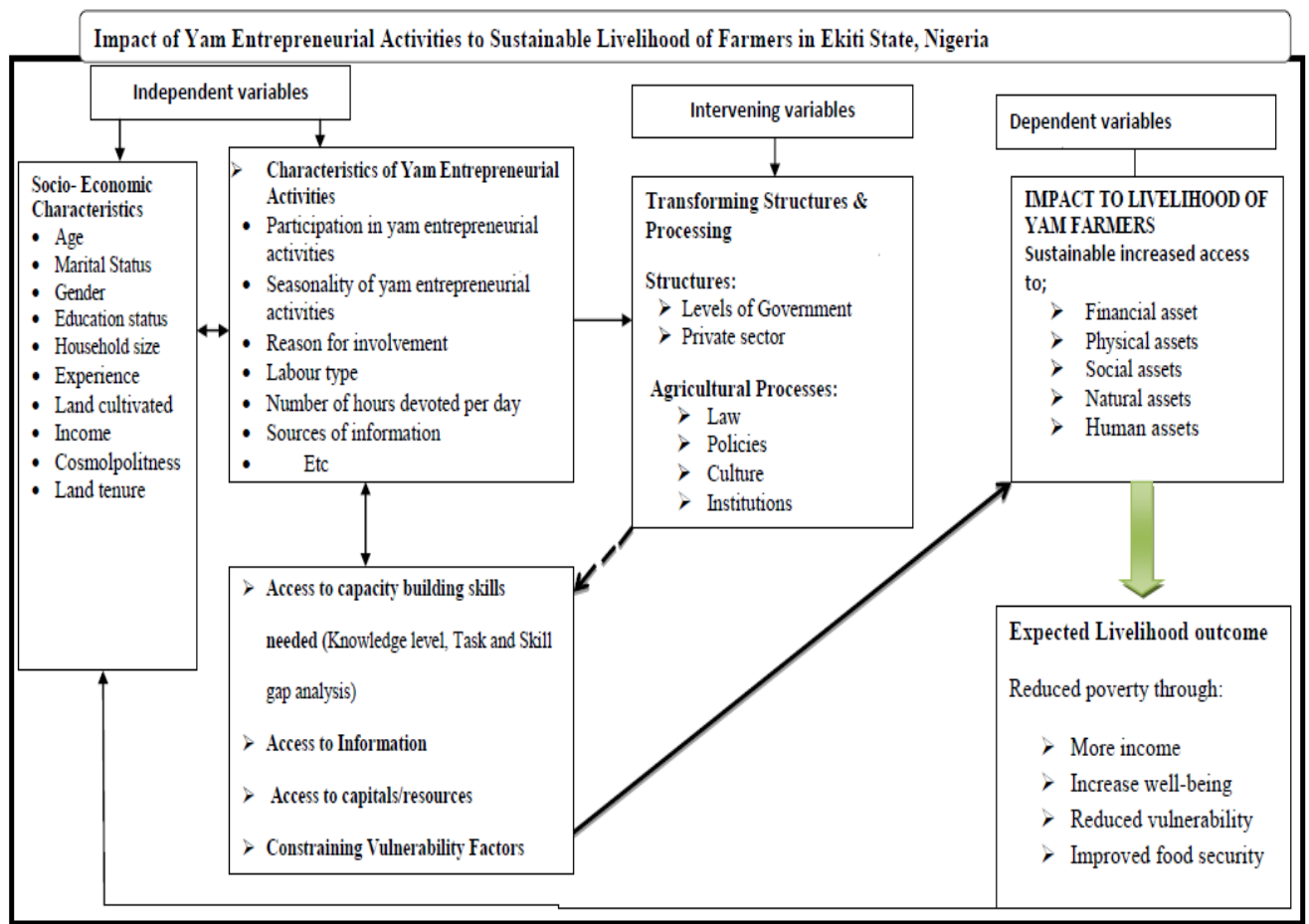


Figure 3: Conceptual Framework of the study

Source: Author, 2016

CHAPTER THREE

METHODOLOGY

3.1 Study Area

This study was conducted in Ekiti State, Nigeria.

3.1.1 Overview of Ekiti State

Ekiti State is situated entirely within the tropics. It is located between longitudes $40^{\circ}51'$ and $50^{\circ}451'$ East of the Greenwich meridian and latitudes $70^{\circ}151'$ and $80^{\circ}51'$ north of the Equator. It lies east of Osun, south of Kwara and Kogi State and bounded by Ondo State in the East and the south, with a total land Area of 5887.890sq km. The state has Sixteen local government areas with the headquarters located at Ado-Ekiti. The National Population Commission (NPC) in March 2006 put the population of Ekiti State at 2,384,212 people. NPC in conjunction with the National Bureau of Statistics further projected 3,270,800 people by March 2016 (retrieved from <https://ekitistate.gov.ng/about-ekiti>).

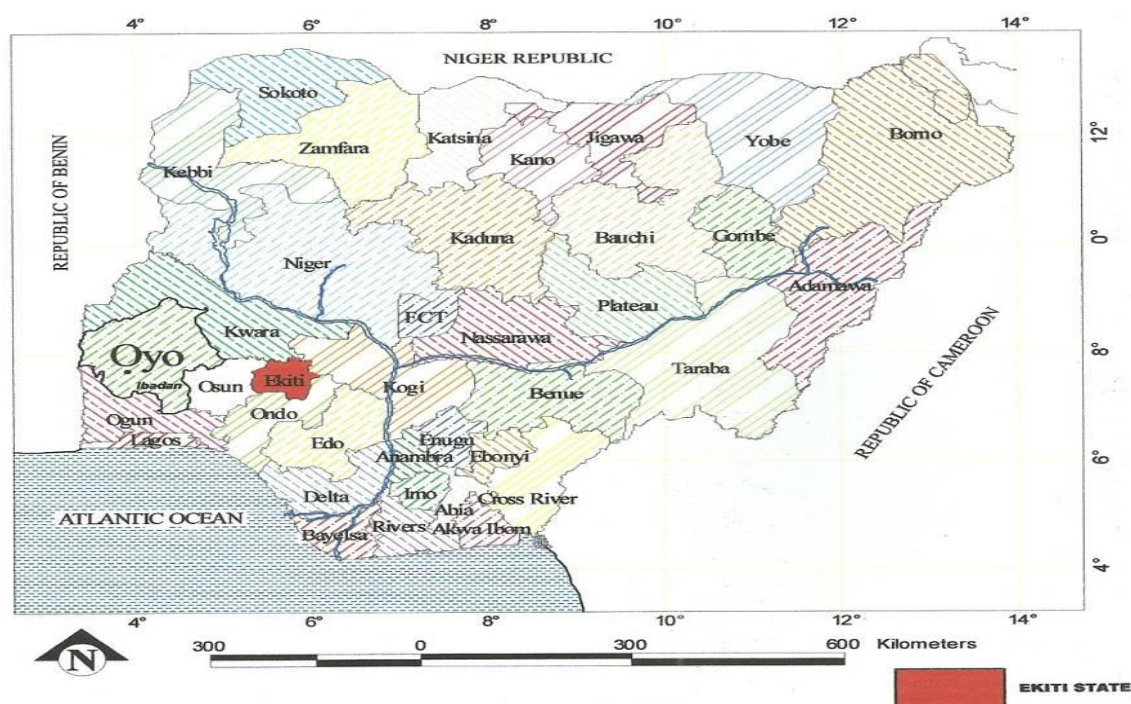


Figure 4: Ekiti State in its National Setting

Source: Ekiti State Ministry of Lands and Physical Planning, 2011

3.1.2 Geography/Topology

Mainly an upland zone rising over 250 metres above sea level, Ekiti has a regularly undulant surface. The landscape consists of ancient plains broken by precipitous-sided projection ground rocks. The rocks are in single, groups or in ridge forms. The utmost notable of the rocks are located in Efon-Alaaye, Ikere-Ekiti and Okemesi-Ekiti.

An important characteristic of the Ekiti state is the enormous number of hills it has. In fact, the word ‘Ekiti’ originated from the local term for hill (retrieved from <https://ekitistate.gov.ng/about-ekiti>).

3.1.3 Climate and Vegetation of Ekiti State

The State experienced a tropical climate with two distinctive seasons. These are the rainy season (April – October) and the dry season (November – March). Temperature ranges between 21°C and 28°C with high humidity. The southwesterly winds and the North East Trade winds blow in the raining and dry (Harmattan) seasons respectively. Tropical Forest exists in the south, while guinea savanna predominates in the northern peripheries (retrieved from <https://ekitistate.gov.ng/about-ekiti>).

3.1.4 Agriculture in Ekiti State

Agriculture is the main occupation of the people of Ekiti. Agriculture provides income and employment for more than 75% of the population of Ekiti State. Some of Ekiti’s agricultural produce are: Cash crops such as Cocoa, Oil Palm, Kolanut, Plantain, Bananas, Cashew, Citrus and Timber; Arable /Food Crops such as Rice, Yam, Cassava, Maize and cowpea. A detailed list of agricultural produce is contained in the Tables 2 and 3.

Table 1: Cash Crops in Ekiti State

S/No	Crop	Locations	Uses
1	Cocoa	Ise, Emure, Ilawe, Ado, Igede, Igbara, Odo, Aramoko, Ikoro	Cocoa butter, Cocoa, Powder, Beverages, Cocoa Liquor and Export
2	Oil Palm	Spread across the State	Vegetable Oil, Spices, Flavoring and export
3	Kola Nut	Ikoro, Igede, Ise and generally in the forest zone	Stimulants and export
4	Plantain/Banana	Widespread across the State	Plantain Flour, Plantain Beer, Plantain Balls & Chips/Crape
5	Cashew	Northern part of the State	Oil, Nuts and for export
6	Citrus	Widespread across the State	Fruit, Juice, Fruit Wine and for export
7	Rubber	Southern part of the State	Tyre manufacturing, Crepe and for export
8	Timber	Ijero, Ise, Ikere, Aramoko, Ado	Log, Planks, Panel Furniture Ilawe and for export

Source: <https://ekitistate.gov.ng/about-ekiti>

Table 2: Arable/Food Crops in Ekiti State

S/No	Crop	Highly Cultivated LGAs	Industrial Uses/Products
1	Rice	Irepodun/Ifelodun, Ekiti West, Ekiti East, Ikole	Flour, Grits, Grains
2	Yam	Widely cultivated across the State	Yam Flour
3	Cassava	Widely cultivated across the State	Garri, Starch, Adhesive, Mosquito Expeller, Livestock Feeds, Chips, Yeast, Alcohol Products
4	Maize	Widely cultivated across the State	Maize, Grit, Corn Flour
5	Cowpea	Northern Part of the State	Grits, Flour
6	Plantain & Banana	Widely cultivated across the State	Plantain Flour, Plantain Chips/Crepe, Plantain Juice & Beer

Source: retrieved from <https://ekitistate.gov.ng/about-ekiti>

3.1.5 Ekiti State Agricultural Development Project

The study area, which is Ekiti State, has been divided into 3 zones by the Ekiti State Agricultural Development Project (EKSADP) on the basis of cultural and ecological characteristics and administrative convenience of the state. These zones and headquarters are: Zone 1 rain forest (Aramoko), zone 2 rain forest (Ikere) and zone 3 derived savannah (Ikole).

Table 3: EKSADP Extension Operational Offices

S/N	Zone	Dominant Agro-Ecology	Hq. Location	Name Of Blocks	Number Of Cells
1	Zone1	Rain forest	Aramoko	Aramoko, Ijero, Efon, Igede, and Ado.	40
2	Zone2	Rain forest	Ikere	Ikere, Ilawe, Ise, Emure, and Ode	40
3	Zone3	Derived savannah	Ikole	Ikole, Omuo, Oye, Ido, Otun and Iye	48

Source: EKADP Extension office, 2016

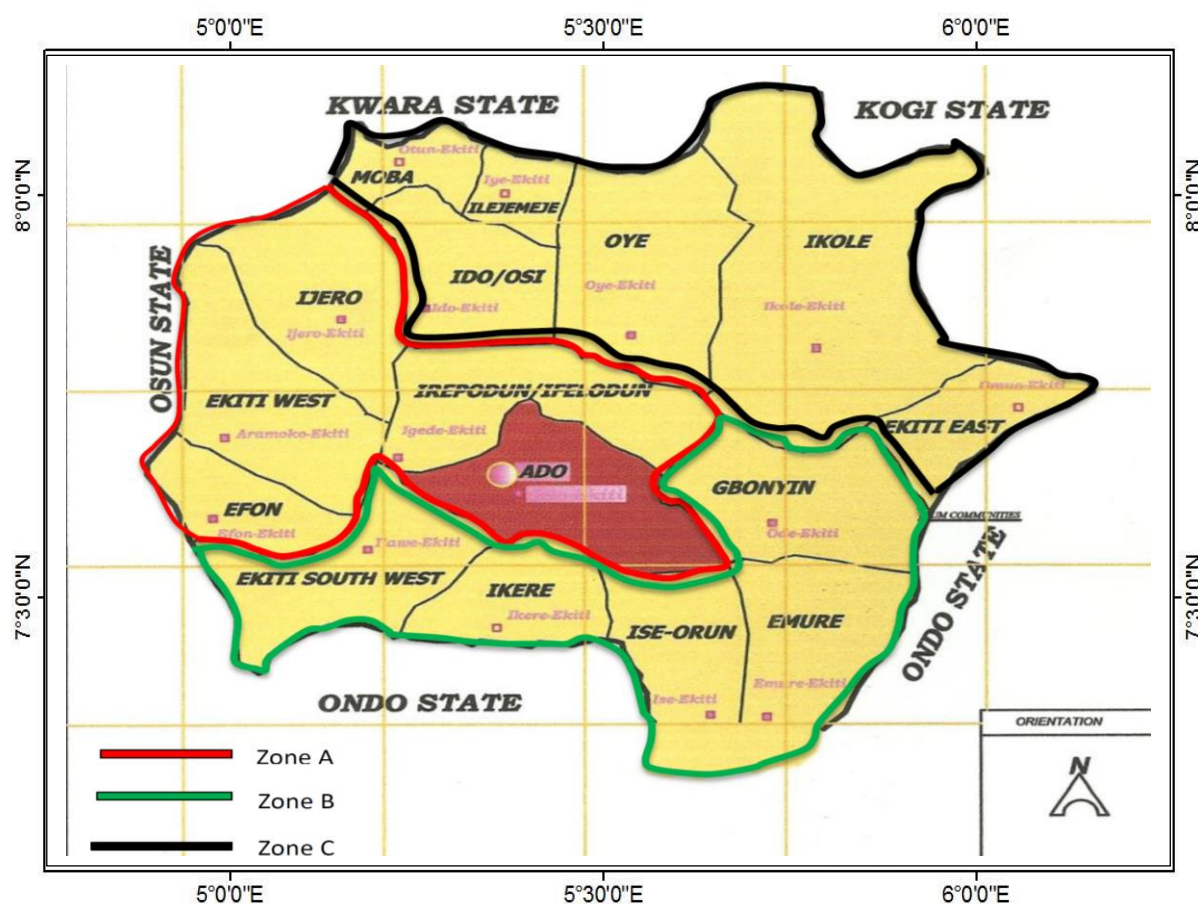


Figure 5: Map of Ekiti State showing ADP Zones by local governments

Source: Author, 2016

3.2 Population of the Study

The population of this study consists of all (100,000) contact yam farmers of the EKSADP in of Ekiti State, Nigeria.

3.3 Sampling Procedure and Sample Size

This study adopted the existing EKSADP structure in selecting respondents for the study. Two-stage random sampling procedure was used in the selection of respondents for the study.

Stage 1: The first stage involved a random selection of two communities per block.

Name of blocks and selected communities were:

Zone A (Ararmoko zone): (1) Ararmoko [Ido-Ile and Erio], (2) Ijero [Ara and Temidire], (3) Efon [Iwaji and Awure], (4) Igede [Asa-Oloro and Aba-Osun], and (5) Ado [Erinfun and Ago-Aduloju]. **Zone B** (Ikere zone): (1) Ikere [Ogele and Oko-Oisa], (2) Ilawe [Ayegunle and Ekasa-Agbedola], (3) Ise [Aba-Egbira and Ofigba], (4) Emure [Eporo and Akeye], and (5) Ode [Apomo and Aba-Jioba]. **Zone C** (Ikole zone): (1) Ikole [Odo-oro and Ayebode], (2) Omuo [Eda-Ile and Araromi Oke], (3) Oye [Omu and Ayede], (4) Ido [Osi and Orin] (5) Otun [Otun and Ikosu] and (6) Iye [iye]

Stage 2: The second stage involved a random selection of twenty (20) ADP contact yam farmers in each of the farming communities selected. The criterion for simple random sampling method was that sample members are chosen randomly for inclusion in the sample, with each population element having an equal chance of being selected.

In all, a total of six hundred and forty (640) respondents were sampled to provide data for the study. For the Focus Group Discussion aspect of the research, all available yam farmers were used for the study.

Table 4: Summary of sampling procedure

Ekiti State ADP Zones	<i>Blocks</i>	Stage 1: random selection 2 communities per block	Stage 2: random selection 20 Farmers per community
Aramoko Zone	Aramoko, Ijero, Efon, Igede, and Ado (5 blocks)	10 communities	200 Farmers
Ikere Zone	Ikere, Ilawe, Ise, Emure, and Ode (5 blocks)	10 communities	200 Farmers
Ikole Zone	Ikole, Omuo, Oye, Ido, Otun and Iye (6 blocks)	12 communities	240 Farmers
Total		32 communities	Total sampled= 640 respondents proposed

3.4 Instrument for Data Collection

The research approach included focus group discussion and a survey of yam farmers. Primary data used in this study was obtained with the use of structured interview schedule. The choice of this instrument was based on its ability to collect different types of data (quantitative or qualitative) which allowed for detailed and nuanced answers (FAO, 2014).

The interview schedule instrument comprised of eight sections labelled from A to H. The first section (A) of the survey schedule elicited information on the socio-economic characteristics of the yam farmers. Section B elicited information on the characteristics of yam entrepreneurial activities yam farmers. Section C sought information on attitude towards yam entrepreneurial activities. Section D elicited information on the accessibility of livelihood capitals for yam entrepreneurial activities and accessibility of livelihood assets. Section E elicited information on the knowledge level of yam entrepreneurial innovative opportunities. Section F sought information on capacity building needs of yam entrepreneurial skills of yam farmers. Section G sought information on the constraining vulnerability factors to yam entrepreneurial activities of yam farmer.

3.5 Validity of the Instrument

The instrument was subjected to careful examination by experts in the field of agricultural extension and rural development to ensure its validity. Samah, Silva, Shaffril and Uli (2010) had opined that feedback from the panel of experts would provide inputs or indicators for the development of a questionnaire.

3.6 Reliability of the instrument

Test-retest method was used to ensure the reliability of the instrument. This involved the administration of the questionnaires on thirty (30) yam farmers outside the study population. The procedure was repeated on the same groups after two weeks and the data collected from the two surveys were subjected to the Pearson Product Moment Correlation analysis and coefficients of 0.81 and 0.84 were obtained respectively. Hence, the instrument was considered reliable since it consistently produced the same sample result and appropriateness many times (Ogunleye, 2000). This is necessary to evaluate and revise the research instrument that was design earlier from a group of potential respondents (Forza, 2002).

3.7 Measurement of Variables

This section describes how numerals were assigned to variables used in the study. The first part describes the measurement of main dependent variable (sustainable livelihood) of the study. Independent variables are presented in the second part.

3.7.1 Dependent Variable (Objective 4)

The dependent variable (sustainable livelihood) was measure as accessibility of respondents to livelihood assets (financial, physical, social, human and natural assets). Two stages were involved in the process;

a. Respondents access to capitals for yam entrepreneurial activities (Objective 5)

A three-point Likert-type rating scale was used to elicit information on respondents' opinion on the level of accessibility of livelihood capitals/resources. The respondents were required to respond to carefully constructed to each capitals/resources (financial, physical, social, human and natural capitals) for yam entrepreneurial activities. The scales were measured as no access, restricted access and free access and score of 1, 2, and 3 were assigned respectively. The mean score of the respondents was adopted as a measure for ranking the level of respondents' access to livelihood capitals/resources for yam entrepreneurial activities.

b. access to livelihood assets as contributed to yam entrepreneurial activities

A five point Likert rating scale was used to elicit information on respondents' opinion on the contributions of yam entrepreneurial activities to livelihood assets. The respondents were required to respond to carefully constructed livelihood assets (financial, physical, social, human and natural assets). The scales were measured as strongly agree, agree, undecided, disagree, strongly disagree and score of 2, 1, 0, -1 and -2 were assigned respectively. The mean score of the respondents was adopted as a measure of the contribution on livelihood assets.

Decision rule for remark: A mean score of 0.0 was considered as benchmark for the categorization of three levels of contribution thus;

1. High contribution (1.0 to 2.0 mean score) i.e mean score towards positive
2. Moderate contribution (0.0 mean score) i.e mean score < 1.00 but > -1.00
3. Low contribution (-1.0 to -2.0 mean score) i.e mean score towards negative

3.7.2 Independent Variables

Independent variables considered in this study were socioeconomic characteristics of respondents and yam enterprise characteristics (Objective 1 and 2). Other contributing factors

for sustainable livelihood such as knowledge level, capability, attitude and constraints of respondents were also considered as independent variable.

3.7.2.1 Socioeconomic characteristics of respondent as measured to achieve objective 1

Gender: Respondents were interviewed to indicate whether they are male or female and nominal score of 1 and 2 were assigned respectively.

Age (years): The actual age of respondents were taken in years

Marital Status: Respondents were asked to indicate whether they are Single, Married Divorced/Separated or Widowed/widower and nominal scores of 1, 2, 3, and 4 were assigned respectively.

Education Status: Respondents were asked to indicate whether they had No formal education, Adult literacy, Primary education, Secondary education or Tertiary education. Nominal scores of 1, 2, 3, 4 and 5 were assigned respectively.

Household size: The actual number of household size were taken in number of persons

Cosmopolitaness: Respondents were asked how often they visit other towns. Scales were measured as rarely, once a year, once in six months, once in three months, once a week and more frequently. Nominal scores of 1, 2, 3, 4, 5 and 6 were assigned respectively.

Aware of agricultural entrepreneurship: Respondents were asked to indicate whether they are aware or not aware of agri-entrepreneurship skills and nominal score of 1 and 0 were assigned respectively.

Years of yam Farming Experience: The actual number were taken in years

Land tenure: Respondents were asked to indicate whether they rent, given as gift, purchase or inherited the land use for yam entrepreneurial activities. Nominal score of 1, 2, 3 and 4 was assigned respectively.

Average land area cultivated per season: Actual numbers were collected in acres.

Average income per season: Calculated from average land area cultivated per season and other Focus Group Discussion data in Naira

Participation in other farming activities: Actual farming activities were taken and later coded as Animal husbandry=1, Poultry farming=2, Fish farming=3, Snail farming=4.

Participation in off-farming activities: Actual off-farming activities were taken and were coded as; Civil servant =1, Okada riding =2, Trading =3, Tailoring =4, Carpentry =5, Grinding=6, Electronic repair=7, Auto-mechanics=8, Vulcanizer =9, Hairdressing=10, Hunting=11, Palm wine tapping=12, Taxi driving=13.

3.7.2.2 Socioeconomic characteristics of respondent as measured to achieve hypothesis 2 and 4

Gender(X_1) = measured as a dummy variable 1 for male, 0 for female

Age (X_2) = Age of respondents measured in years.

Marital Status (X_3) = measured as a dummy variable 1 if married, 0 otherwise

Educational status (X_4) = measured as a dummy variable 1 for possession of formal education (primary, secondary or tertiary education) and 0 otherwise.

Household Size (X_5) = measured in number of birds

Cosmopolitaness: (X_6) = measured as a dummy variable 1 if more frequently, 0 otherwise

Awareness of agri-preneurship (X_7) = measured as a dummy variable 1 for yes, 0 for no

Chosen yam enterprise(s) (X_8) = measured as a dummy variable 1 for (transporting, processing or marketing), 0 otherwise

Experience as yam entrepreneur (X_9) = measured as the number of years spent in farming

Land tenure (X_{10}) = measured as a dummy variable 1 if purchase or inheritance, 0 otherwise

Land area cultivated (X_{11}) = measured in hectares of lands.

3.7.2.3 Yam entrepreneurial activities of respondents

Participation in other yam entrepreneurial enterprise: Respondents were asked to indicate whether they involved in yam transporting, yam processing or yam marketing activities. Levels of participation were measured as ‘not relevant, little extent, and great extent’. Nominal score of 0, 1, and 2 were assigned respectively.

Yearly Calendar chart of Yam Entrepreneurial Activities: Actual month farmers mostly engage in the list yam farming activities were taken in number and were coded as January=1, February=2, March=3, April=4, May=5, June=6, July=7, August=8, September=9, October=10, November=11, and December =12.

Sources of information on yam entrepreneurial activities: Sources of information on yam entrepreneurial activities were measured by presenting 8 information sources on yam entrepreneurial activities to the respondents. The respondents were asked to indicate the source(s) available to them in obtaining information on yam entrepreneurial activities. This was measured on a 2 scale point of yes (1) No (0).

Membership of any crop related enterprise association: Yes=1 and No=0

Main sources of initial capital: Bank credit =1, Family and Friends=2, Cooperative=3, Own savings=4.

Main buyers of your products: Own/family consumption =1, Consumers=2, Retailers=3, Wholesalers=4, Government=5.

Numbers of workers: Actual numbers of workers were taken in persons

Labour type: Family only=1, Hired only=2, Family and Hired=3.

Number of hours devoted per day: Actual numbers of time were taken in hours.

Main reason for involvement: Exclusively for home consumption with rarely any surpluses produced=1, Majorly for home use, but with the interest of selling the excess in the market=2, partly for the market and partly for home consumption=3, Exclusively for the market=4.

Plan to expand the production: Yes=1, No=0

Number of seminar/training attended: Actual numbers of training attended were taken in number.

Training Organisation(s): Respondents were required to state the name of the organisation. Responses collected were coded as Fadama=1, Agricultural Development Programme=2, Cooperative =3.

Training Subject (s): Respondents were required to state the subject of training received. Responses collected were coded as: Secured way of transporting produce=1, Savings and Records=2, Irrigation=3, Agricultural Marketing and distribution=4, crop processing=5, improved crop production practices=6, General agro-enterprises=7.

3.6.2.4 Yam entrepreneurial activities of respondents as measured to achieve hypothesis 1

Participation in seasonal activities of yam cultivation (X_1) = measured as a dummy variable 1, otherwise 0

Participation in activities of yam marketing activities (X_2) = measured as a dummy variable 1, otherwise 0

Participation in activities of other yam transporting activities (X_3) = measured as a dummy variable 1, otherwise 0

Participation in yam processing activities (X_4) = measured as a dummy variable 1, otherwise 0

Experience as yam entrepreneur (X_5) = measured as number of years spent in yam entrepreneurial activities

Land tenure (X_6) = measured as a dummy variable 1 if owned (purchase or inheritance), otherwise 0

Land area cultivated (X_7) = measured in hectares of lands

Membership of cooperative group (X_8) = measured as yes 1, otherwise 0

3.7.2.4 Attitude of farmers towards yam entrepreneurial activities (Objective 3)

A five point Likert rating scale technique for measurement of attitudes as proposed by Likert (1932) was used to elicit information on respondents' opinion of respondents on their attitude towards yam entrepreneurial activities. Respondents were required to respond to 18 carefully constructed attitudinal statements that when taken together, revealed the level of attitude towards yam entrepreneurial activities. Attitudinal statements were in two forms. Firstly, number 1 to 13 statements were direct statements of attitude which were measured as strongly agree, agree, undecided, disagree, strongly disagree, and score of 2, 1, 0, -1 and -2 were assigned respectively. Secondly, the scoring pattern was reversed for indirect statements from number 14 to 18. This scale is considered for this study because to its strength, simplicity and ease of administration (Neuman, 2000).

Decision rule: The attitude of respondents was described as 'positive, neutral or negative' based on the scale devised from the maximum possible score of 36 (18 items x 2) and the minimum possible score of - 36 (18 items x -2). The three categories of the extent of attitude arbitrarily determined in this study to describe the attitude of respondents were: Positive attitude (1 to 36 points), neutral (0 points), and negative attitude (-1 to -36 points).

3.7.2.5 Knowledge level of yam entrepreneurial skills among respondents (Objective 5)

Respondents were required to respond to carefully two options (yes or no) to indicate their areas of knowledge. Responses indicating yes option were assigned 1 (implies knowledgeable) while responses indicating no option were assigned 0 (implies no knowledge).

For classification of knowledge in different categories, the knowledge index of each respondent was computed using this formula:

$$\text{Knowledge index} = \frac{\text{Respondents Total Score}}{\text{Total possible score}} \times 100$$

Based on the knowledge index scores, the farmers were categorized under five knowledge level categories namely; very low, low, medium, high and very high.

Decision rule: Since the mean score of respondents were multiplied by 100 to give the knowledge index, 100 was divided by 5 = 20. 20 index intervals were then considered. Category 1: knowledge index from 0 to 20 were considered as very low. Category 2: knowledge index from 21 to 40 were considered as low. Category 3: knowledge index from 41 to 60 were considered as moderate. Category 4: knowledge index from 61 to 80 were considered as high. Category 5: knowledge index from 81 to 100 were considered as very high.

3.7.2.6 Capacity building needs of respondents on yam entrepreneurial skills (Objective 6)

To determine the capacity building needs of yam farmers in the study area, this study adopted the FAO (1992) model of conducting training need analysis. According to the model, training needs analysis process can be divided into three distinct analytical phases: job analysis, task analysis, and knowledge/skill-gap analysis.

Components of the task and skill gap analyses were measured as follows:

(a) Frequency of performance: A 5 point Likert-type scale where were used. The scales were measured as seldom, occasionally, weekly to monthly, daily to weekly and daily. Score of 1, 2, 3, 4 and 5 were assigned respectively.

(b) Importance of entrepreneurial skills: A 4 point Likert-type scales were used. The scales were measured as not important, moderately important, important, and extremely important. Score of 0, 1, 2 and 3 were assigned respectively.

(c) Difficulty in handling entrepreneurial skills: A 5 point Likert-type scales were used. The scales were measured as easy, moderately difficult, very difficult and extremely difficult. Score of 1, 2, 3 and 4 were assigned respectively.

The skill gap was measured as follows:

Proficiency of yam farmer-entrepreneurs was rated on a likert type scale of 1 to 5. Scales were measured as cannot do at all, can do less than half of the task, can do more than half but less than total, can do total but cannot maintain time schedule, and can do within time schedule. Score of 1, 2, 3, 4 and 5 were assigned respectively. Means scores were used to consider the level of proficiency as 1= (mean 1 - 0.4), 2= (mean 1.5 - 2.4), 3= (mean 2.5 - 3.4), 4= (mean 3.5 - 4.4), 5= (mean 4.5 - 5.0).

Decision rule:

(1) Is Proficiency a problem? : Total number of numeral assigned to scales / Number of scale (i.e $15/5 = 3$). Mean equal to 3.0 was therefore considered as a benchmark. Mean scores below 3.0 were indicated “Yes” as area where proficiency is a problem.

(2) Can be solved by training? : Average of number of scales (i.e $5/2 = 2.5$) was used to decide if skills can be solved through training. Scale 2.5 was therefore considered as benchmark. Scale highlighted below 2.5 (i.e scale 1 and 2) were regarded “Yes” as skills that can be solved by training.

3.7.2.7 Constraints to sustainable yam entrepreneurial activities (Objective 7)

A five point Likert rating scale was used to elicit information on respondents’ opinion of respondents on the 28 items of constraints. The 28 factors were further categorised into 3 (shocks, adverse trends, and seasonal stress factors) vulnerability factors that limit the sustainability of yam entrepreneurial activities. Scales used were strongly agree, agree, undecided, disagree, strongly disagree and score of 2, 1, 0, -1 and -2 were assigned respectively. The mean score of the respondents was adopted as a measure for consideration as constraints to sustainable livelihood of yam farmers.

Decision rule: A mean score of 0.0 was considered as benchmark for the categorization of constraints factors. Remark: mean scores toward positive at 1.0 to 2.0 were considered as “constraint” while mean scores toward negative at -1.0 to - 2.0 were considered as “not a constraint”.

3.8 Techniques of Data Analysis

This study used content analysis to analyse qualitative data and Statistical Packaging for Social Sciences (SPSS) Version 20.0 statistical package to analyse quantitative data. Statistical tools employed were descriptive and inferential statistics. The descriptive statistics

used were frequency counts, mean, percentages, and standard deviation while the inferential statistical tools used for the study include: Multiple regression and Ordered probit regression analysis, Analysis of Variance, Gross margin analysis and mean ranking were employed in this study.

Table 5: Summary of data collected and analysed

	Retrieved questionnaires	Rejected questionnaires	Sample analysed
	192	5	187
	187	4	183
	216	6	210
Total	595	15	580

Note: The criterion for rejection of a questionnaire was based on its incompleteness

3.8.1 Multiple Regression Analysis

The multiple regression analysis using the linear multiple regression model (LMRM) method was used to test hypothesis 2 and 3 respectively. The choice of this model was based on its proven adequacy to predict and explain economic phenomena with several explanatory variables (Onoja and Agumagu, 2009; Gujarati, 2006).

All variables were spelt out under the measurement of variables. The model was used to determine the socio-economic factors influencing the farmers' capacity building needs and attitude towards yam entrepreneurial activities.

The explicit forms of the linear multiple regression models used are:

$$Y_t = \alpha + \beta_1 X_{t1} + \beta_2 X_{t2} + \beta_3 X_{t3} + \beta_4 X_{t4} + \beta_5 X_{t5} + \varepsilon \dots \text{(Linear Form)}$$

Where: Y_t = **Capacity building needs on yam entrepreneurial skills / Attitude of respondents towards yam entrepreneurial activities**

X_{t1} = Gender

X_{t2} = Age

Xt3= Marital status
 Xt4= Educational status
 Xt5= Household size
 Xt6= Cosmopolitaness
 Xt7= Awareness of agri-preneurship
 Xt8= Experience as yam entrepreneur
 Xt9= Land tenure
 Xt10= Land area cultivated
 α = Intercept
 β = Beta coefficient of the independent variable.
 ε = Standard Error of the Estimate

3.8.2 Ordered Probit Regression Analysis

An ordered regression model was used to identify the influence of yam entrepreneurial activities livelihoods activities and some selected socio-economic factors on the accessibility of sustainable livelihood asset yam farmers (hypothesis 1). This model was selected because the explained (or predicted) variable is polychotomous that is, the ordinal nature of contributions to sustainable livelihood categories (high impact=2, medium impact=1 and low impact=0) makes this important variable suitable for ordered regression analysis. The Ordered regression analysis is represented by the following equation:

$$Y^* = \beta'x_i + \varepsilon_i$$

Where; Y^* is the underlying latent variable that indexes the levels of contribution yam entrepreneurs to sustainable livelihood categories in given characteristics of yam entrepreneurial activities.

X_i = Vector of explanatory variables to be estimated (characteristics of yam entrepreneurial activities) and that predict the level of yam entrepreneurial activities to sustainable livelihood categories, and ε_i = stochastic error term

The latent variables exhibit itself ordinal categories, which could be coded as 0, 1 and 2 the responses of category k is thus observed when continuous responses fall in the k-th interval as:

$$Y^* = 0 \text{ (low impact)} \quad \text{if} \quad Y^* \leq \sigma_0$$

$$Y^* = 1 \text{ (moderate impact)} \quad \text{if} \quad \sigma_0 < Y^* \leq \sigma_1,$$

$$Y^* = 2 \text{ (High impact)} \quad \text{if} \quad \sigma_1 < Y^* \leq \sigma_2.$$

According to Sy *et al.* (1997); and Judge *et al.* (1998); there are two distinct advantages to using the ordered probit model over another regression model. The first is that the heteroscedasticity problem that would typically arise when performing a regression on a discrete dependent variable is eliminated and second is the maximum likelihood estimates are asymptotically normal, asymptotically efficient, and consistent under general conditions.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents results of analysed data gotten from the field survey and interpretation of the empirical results. The results and discussion were presented in the order of how it was presented in the specific objectives of the study.

4.1 Socio-Economic Characteristics of Yam Farmers Entrepreneur

The socio-economic characteristics of the respondents that are of interest to the study were presented in the following order: gender, age, marital status, educational status, household size. Others are cosmopolitaness (frequency of visit to major town), awareness of agri-entrepreneurship skills, farming experience, land tenure, land area cultivated, income and participation in other income-generating activities.

4.1.1 Gender, Age and Marital Status of Respondents

This section presented the results and discussed the gender, age and marital status of the respondents. Table 6 gives a summary of the results.

Table 6: Distribution of respondents by gender, age and marital status

Variables	Frequency	Percentage	Mean (Std. Dev.)
Gender			
Male	422	72.8	
Female	158	27.2	
Age (Years)			55.0 (13.56)
20 – 40	90	15.5	

41 – 60	287	49.5
61 – 80	181	31.2
Above 80	22	3.8

Marital Status

Single	59	10.2
Married	471	81.2
Divorced/Separated	19	3.3
Widow/Widower	31	5.3

Source: Field survey (2016)

Gender of Respondents

The result presented in Table 6 shows that majority (72.8%) of the respondents were male and only 27.2% were female. This finding indicates that more males are involved in yam farming activities than females in the study area. This result is expected since the selected respondents are yam cultivating farmers whose tasks demand a lot of energy. This finding agrees with the findings of Oluwasusi and Sangotegbe (2012) that yam farming in Ekiti state was dominated by male. Also, Adedoyin, Fapojuwo and Torimino (1999) had stated that more men were involved in farming activities than the female counterpart in Nigeria.

Age of Respondents

Table 6 shows that the mean age of respondents was 55years. This finding implies that yam farmers in the study area were relatively old but were expected to be economically active. Little above the average age found in this study was also found by Oluwasusi and Sangotegbe (2012) among yam farmers in Ekiti state. Ibitoye and Onimisi (2013); Osayande and

Osabuohien (2016) also noted similar average age among yam farmers in Kogi State. This finding agrees with Manyong, Amegbeto, Asiedu and Coulibal (2002) that most farmers cultivating yam in Nigeria are old. Ekong (2003) also ascertained that older farmers dominate farming activities in Nigeria because of the outmigration of youths to urban centres in search of white-collar jobs.

Marital Status of Respondents

As shown in Table 6, 10.2% of the respondents were single, 3.3% were divorced/separated, 5.3% were widow/widower while the majority (81.2%) of the respondents were married. This implies that majority of the yam farmers in the study area are likely to have responsibilities to cater for in their respective homes. This factor is expected to positively influence the adoption and favourable attitude toward yam entrepreneurial business for profit maximisation. Oladoja, Adedoyin and Adeokun (2008) in a similar opinion stated that in our society, marriage is of individual is vital factor livelihood as it is known to confer responsibility to all persons.

4.1.2 Educational Status, Household Size and Cosmopolitaness of Respondents

This section presents the results of educational status, household size and cosmopolitaness of respondents. Table 7 gives a summary of the results.

Table 7: Distribution of respondents by educational status, household size, residential type and cosmopolitaness

Variables	Frequency	Percentage	Mean (std. Dev.)
Educational Status			
No formal education	115	19.8	
Adult education	73	12.6	

Primary education	198	34.1
Secondary education	169	29.1
Tertiary education	25	4.3
Household Size (Persons)		5.96 (3.092)
1 (Singles)	59	10.2
2 - 5	203	35.0
7 – 10	278	47.9
11 – 15	40	6.9
Cosmopoliteness: Frequency of visit to major town		
Rarely	239	41.2
Once a year	84	14.5
Once in six months	145	25.0
Once in three months	22	3.8
Once a week	42	7.2
More frequently	48	8.3

Source: Field survey (2016)

Educational Status of Respondents

The results illustrated in Table 7 shows that majority (67.0%) of the respondents were literates. The majority literate had primary education (34.1%), secondary education (29.1%)

and tertiary education (4.3%). Formal education among most of the respondents is expected increase their interest to adopt innovation through extension education and favourable mental attitude towards adoption of farming entrepreneurship innovation. Respondents that are educated are in better position to know the different market channels where their produce can be sold at better price to increase their income (Ogbe, 2010). The finding supports the report by Gebremedhin and Jaleta (2010) that educational level of entrepreneurs increases human capital, raises the competencies of their skill and managerial capabilities. These attributes inducement to encourage agricultural commercialisation and entrepreneurship. Esiobu and Onubuogu (2014) similarly report that farmers with higher educational attainment are usually faster to use innovation of improved farming technologies.

Household Size of Respondents

Table 7 shows that the mean household size of respondents was 6 people. This finding indicates that household size of farmers cultivating yam in the study area is relatively large. This is expected to contribute positively to farming labour availability in the study area. Onubuogu *et al.* (2014) had opined that massive household increases ease access to production variables such as labour which could enhance entrepreneurship development in agribusiness in the area. Onubuogu and Onyeneke (2012) also asserted that large household size ensures availability of farm labour.

Cosmopolitanism of Respondents: Frequency of Visit to Major Town

Table 7 shows that 41.2% rarely visit or go out of their location, 14.5% visited other places once a year, 25.0% once in six months, 3.8% in once in three months, 7.2% in once a week and 8.3% frequently go out of the residential area to major towns.

4.1.3 Respondents' Awareness of Agri-Entrepreneurship Skills, Years of Experience and Land Tenure

This section presents the results on respondents' awareness of agri-entrepreneurship skills,

years of experience and land tenure. Table 8 gives a summary of the results.

Table 8: Distribution of respondents by awareness of agri-entrepreneurship skills, years of experience and land tenure

Variables	Frequency	Percentage	Mean (Std. Dev.)
Awareness of Agri-Entrepreneurship skills			
Aware	244	42.1	
Not aware	336	57.9	
Years of Experience in Yam Entrepreneurial Activities			30.13 (14.075)
≤ 10	36	6.2	
11 – 20	150	25.9	
21 – 30	99	17.1	
31- 40	126	21.7	
41- 50	109	18.8	
≥ 51	60	10.3	
Land Tenure: Acquisition of Farm Land			
Inheritance	359	61.9	
Purchase	48	8.3	
Gift	113	19.5	
Rent	60	10.3	

Source: Field survey (2016)

Awareness of Agri-Entrepreneurship skills

Table 8 shows that 42.1% of the respondents were aware of agricultural entrepreneurship skills, while the majority (57.9%) of the respondents were not aware of the agricultural entrepreneurship skills. This is contained in a statement by a farmer during a Focus Group Discussion said that *“We are not aware of all these skills but the few we know, we always practice it.*

Years of Esxperience in Yam Entrepreneurial Activities

As revealed in Table 8, the average year of experience among respondents in their chosen yam enterprises was 30 years. This finding implies that yam farmers have acquired many years of experience in their chosen enterprises. Okoli, Okereke, Onubuogu and Esiobu (2014) had earlier noted that farmers with long years of experience in agribusiness would be more efficient in the allocation of resources for maximum profit.

Land Tenure: Acquisition of land for Yam Entrepreneurial Activities

The result illustrated in Table 8 shows that majority (61.9%) of the respondents acquired their farmland by inheritance, 8.3% were through purchase, 19.5% were through gift, and rent acquired among 10.3%. This finding implies that majority of the respondents owned their land. Ownership of land among respondents is expected to increase the profit of yam farmers in the study area.

4.1.4 Average Land Area Cultivated, Productivity and Profitability of Respondents

This section presents the results of average land area cultivated, productivity and profitability of respondents. Table 9 gives a summary of the results.

Table 9: Distribution of respondents by land area cultivated, productivity and profitability

Variables	Frequency	Percentage	Mean (Std. Dev.)
Land Area Cultivated (Acres)			
0.1 – 1.0	158	27.2	2.40 (1.389) = 0.96 Hectares
1.1 – 2.0	167	28.8	
2.1 – 3.0	106	18.3	
3.1 – 4.0	85	14.7	
4.1 – 5.0	52	9.0	
5.1 and above	12	2.1	

Calculated Average Income (Naira)

Average heap cultivated (0.96×10000) = 9,600 heaps

Number of tubers harvested = Average heap cultivated = 9,600 tubers

FGD data: Average number of unit(*Ido*) in sales = 80 - 100 tubers depending on the sizes (Average = 90 tubers)

(**Q**) Number of unit tuber to be sold ($9600/90$) = 106.7 unit (*Ido*)

FGD data: Price (**P**) per unit(*Ido*) of yam tubers = ₦45,000 - ₦50,000 depending on demand as at the time of this survey (Average = ₦ 47,500)

Total Revenue (P (47500) x Q (106.7) = ₦ 5,068,250

FGD data: Average expenses per 200 heaps (*Igba*) = ₦ 43,800/ 21900

Number of 200 heaps in 9600 heaps =	48 <i>Igba</i>
Total variable Cost (27700 x 48) =	₦ 1,329,600
Total Revenue = P (47,500) x Q (106.7)	₦ 5,068,250
Gross margin analysis = TR (P x Q) – TVC =	(5,068,250 - 1,329,600) =
	₦ 3,738,650 per season
Net income per heap/tuber = 3,738,650 / 9600 =	₦ 389

Source: Field survey (2016)

Average Land Area Cultivated, Productivity and Profitability of Respondents

Table 9 indicates that the average farm size of respondents was 2.40 acres which is equivalent to 0.96 hectares. Following the definition of small-holder farmers by the World Bank's Rural Strategy (UNECA, 2009) as those with a low capital base, operating less than 2 hectares of cropland, this finding, therefore, implies that respondents are mostly smallholder yam farmers. This finding agrees with Oluwasusi and Sangotegbe (2012); Oluwasusi and Tijani (2013) assertion that yam farmers in Ekiti state are small-scale farmers. This finding further supports Adewumi and Omotesho (2002) that Nigeria's agriculture to a greater extent still has the characteristics of a smallscale economy that was known before the independence period. Onipede (2003) further opined that limited access to agricultural resources is the main reason for predominant of small-scale farming in Nigeria.

As regards income of respondents per annum, gross margin analysis was used to arrive at net income for yam entrepreneurial enterprises in the study area. Average land cultivated of respondents (0.96hectare) was converted to a number of heaps. If 1 hectare = 10,000 heaps, then 0.96 hectare multiplies 10,000 = 9600 heaps.

Under appropriate farm management practices, the number of heaps was taken as the average number of tubers/productivity of respondents = 9600 tubers. This is because the size of a farm is a strong determinant of the expected output/yield (Nwaobiala and Eze, 2008).

During the focus group discussion, respondents were asked the number of unit of yam in sales. Responses were between 80 – 100 tubers (unit as *Ido*) depending on the sizes, giving the average number of tubers per unit as 90 tubers. Then, quantity (**Q**) to be sold was calculated as average total tubers (9600) divided by number in a unit (90) = **106.7** unit *Ido*.

Statement of respondent during the Focus group discussion was that price (**P**) per unit was between ₦ 60,000 to ₦ 65,000 as at the time of this survey. The average price was calculated as **₦62,500**.

Respondents further said that the average expenditure per 200 heaps popularly called *Igba* was ₦27,700. Details of expenditure mentioned include: Land clearing = ₦ 1200, Heap making = ₦ 1500, Yam seed = ₦ 18000, Yam seed treatment = ₦ 2000, Mulching = ₦ 600, Sticking = ₦ 800, Weeding atleast 3 times per season = $1,200 \times 3 = ₦ 3,600$. Total expenses per 200 heaps = **₦ 27, 700**.

Number of 200 heaps (*Igba*) in 9600 heaps = **48** *Igba*

Total variable cost = $27,700 \times 48 = 1,329,600$

Total Revenue = $P (47,500) \times Q (106.7) = 5,068,250$

Gross margin analysis = $TR - TVC = 5,068,250 - 1,329,600 = ₦ 3,738,650$

Gross margin (profit) = **₦ 3,738,650** per season

Net income per tuber = $3,738,650 / 9600 = ₦ 389$

The average net income of farmers per season in this study is considered high. This is expected to have a positive influence on farmers' willingness to engage in innovative practices that will enhance their yam entrepreneurial activities. Similarly, Fairlie (2005) also

opined that farmers with higher farm income would easily be involved in entrepreneur activities than those of their counterpart who have poor farm income.

4.1.5 Participation in Other Income Generating Activities by Respondents

This section presents the results of respondents' participation in other income-generating activities. Table 10 gives a summary of the results.

Table 10: Participation in other income generating activities

Variables	Frequency*	Percentages
Other income generating activities		
Farming activities:		
Animal husbandry	132	22.8
Poultry farming	128	22.1
Fish farming	39	6.7
Snail farming	4	0.7
Non-farming activities:		
Civil servant	76	13.1
Okada riding	122	21.0
Trading	158	27.2
Tailoring	4	0.7
Carpentry	3	0.5
Grinding	15	2.6

Electronic repair	2	0.3
Auto mechanics	5	0.9
Vulcanizer	3	0.5
Hairdressing	1	0.2
Hunting	78	13.4
Palm wine taping	54	9.3
Taxi driving	41	7.1

Source: Field survey (2016)

The result of the respondents' participation in other income generation activities as presented in Table 10 shows that respondents were mostly involved in animal husbandry (22.8%) and poultry farming (22.1%). Majority of the respondents are also included in trading (27.2%). This finding indicates that all yam farmers were engaged in another enterprise other than yam farming. This result corroborates FAO (2012) report that like other entrepreneurs, farmers will be willing to have several means of livelihoods to ensure higher and sustainable profitable. Fairlie (2005) opined that farmers with higher farm income would easily be involved in entrepreneur activities than those of their counterpart who have poor farm income.

4.2 Yam Entrepreneurial Activities of Farmers

4.2.1 Participation in Yam Entrepreneurial Activities of Respondents

This section presents the results of respondents' participation in other yam value chain entrepreneurial activities. Table 11 gives a summary of the results.

Table 11: Level of Participation in Yam Entrepreneurial Activities of respondents

Activities	Great Extent	Little Extent	Not Relevant	Mean score	Mean rank
Transporting	114 (19.7)	314(54.1)	152(26.2)	0.935	2
Marketing	250 (43.1)	76 (13.1)	254 (43.8)	0.993	1
Processing	73 (12.6)	204 (35.2)	303 (52.2)	0.603	3

Source: Field survey (2016)

Aside yam cultivation activities being carry-out by respondents, data presented in Table 11 shows that yam farmers are mostly involved in marketing (mean=0.993) that ranked first, transportation activities (mean=0.935) ranked second while processing activities (mean=0.717) and third. Results further indicated that more than half (50.0%) of the respondents reporting little or no participation in processing, transporting and marketing of yam produce. This shows that only few yam farmers are involved in yam value chain activities in the study area. Similar findings were reported by Milcah, Mulu-Mutuku, Odero-Wanga, Ali-Olubandwa and Amos (2013) that majority of the respondents grow cassava but few were engaged in entrepreneurial activities of selling only the raw cassava tubers. This finding also supports FAO (2012) report that farmer-entrepreneurs need to be efficient in transporting and marketing produce.

4.2.2 Yearly Calendar chart of Yam Entrepreneurial Activities in the study area

This section presents the results of yearly calendar chart of yam entrepreneurial activities of respondents. Table 12 gives a summary of the results.

Table 12: Yearly Calendar Chart of Yam Entrepreneurial Activities

Activities/Months	1	2	3	4	5	6	7	8	9	10	11	12
Land clearing								158 (27.2)	54 (9.3)	264 (45.5)	104 (17.9)	
Planting	158 (27.2)	52 (9.0)								52 (9.3)	262 (45.2)	52 (9.3)
Mulching	264 (45.5)	262 (45.2)	54 (9.3)									
Sticking			210 (36.2)	266 (45.9)	104 (17.9)							
Pest and disease control				264 (45.5)	316 (54.5)							
Weeding				108 (18.6)	420 (72.4)	52 (9.0)						
Harvesting, transporting and marketing						54 (9.3)	212 (36.6)	158 (27.2)	52 (9.0)	52 (9.0)	52 (9.0)	
Storage	156 (26.9)										212 (36.6)	212 (36.6)
Shortage	6 (1.1)	100 (17.2)	54 (9.8)	264 (45.5)	156 (26.9)							

Source: Field survey, 2016

Note: 1 to 12 indicate January to December, data in bold indicate start of each activity

Land clearing and heap making: Result illustrated in Table 12 shows that 27.2% of the respondents carried out land clearing activity in August, 9.3% were engaged in the operation in September, 45.5% were engaged in the activity in October and 17.9% were engaged in the activity in November. This finding indicates that land clearing activity is mostly done in the study area within four months, ranging from August to November.

Planting of yam seed: Planting according to Table 12 starts in October as indicated by 9.3%. Further result shows that 45.2% of the respondent were engaged in planting activity in November, 9.3% were engaged in the activity in December, 27.2% in January, and 9.0% in February. The total months for planting activity were five months, ranging from October to February.

Mulching activity: Mulching starts in January as indicated by 45.5% of the respondents. Also, 45.2% indicated their engagement in mulching in February and only 9.3% indicated March as the period for mulching activity. This result shows that mulching activity in the study area is within three months starting from January to March.

Sticking activity: Sticking starts in March as indicated by 36.2% of the respondents. Also, 45.9% indicated their engagement in sticking in April and 17.9% indicated May as the period for sticking activity. This result shows that sticking activity in the study area are within three month starting from March to May.

Pest and disease control: Pest and disease control activity starts in April as indicated by 45.5% of the respondents. Also, 54.5% indicated their engagement in pest and disease control in May. This result shows that pest and disease control activity in the study area was within two month starting from April to May.

Weeding: Weeding starts in April as indicated by 18.6% of the respondents. Also, the majority (72.4%) reported their engagement in weeding in May and only 9.0% reported June as the period for weeding activity. This result shows that weeding activity in the study area was within three month which starts from April to June.

Harvesting, transporting and marketing activities: Harvesting, transporting and marketing starts in June as indicated by 9.3% of the respondents. Also, 36.6% indicated their engagement in harvesting, transporting and marketing/selling in July, 27.2% indicated their engagement in harvesting, transporting and marketing in August and few (9.0%) of the respondents reported their involvement in harvesting, transporting and marketing in September, October and November respectively. This result shows that harvesting, transporting and marketing activities in the study area were mostly within six months starting from June to November.

Storage activity: Storage activity starts in November as indicated by 36.6% of the respondents. Also, 36.6% indicated their engagement in storage in December and only 26.9% reported January as the period for storage activity. This result shows that storage activity in the study area was within three months starting from November to January.

Shortage period: Shortage period starts in January as indicated by few (1.1%) of the respondents. Also, 17.2% indicated shortage period to be February, 9.8% indicated shortage period to be March, 45.5% indicated shortage period to be April and 26.9% indicated this period to be May. These findings show that shortage period of yam in the study area was within five months which starts from January to May.

4.2.3 Sources of information on yam entrepreneurial activities among respondents

This section presents the results respondents' sources of information on yam entrepreneurial activities. Table 13 gives a summary of the results. To combat the changes of trade

environment in agriculture, Yaaghubi *et al.* (2009) had stated that information management is the confident way for farmers to survival.

Table 13: Respondents' sources of information on yam entrepreneurial activities

Sources	Frequency*	Percentage
Agricultural Extension agents visit	500	86.2
Internet/journals	29	5.0
Television	355	61.2
Radio	483	83.3
Newspapers	77	13.3
Cooperative meetings	214	36.9
Fellows	461	79.5
Private consultants	42	7.2

Source: Field survey (2016)

*Note: *Multiple responses*

Table 13 shows that the significant sources of information among respondents were agricultural extension agents (86.2%), radio (83.3%), fellow farmers (79.5%) and television (61.2%). Other sources of information were cooperative meetings (36.9%), newspaper (13.3%), Private consultants (7.2%) and the least was internet/journals (5.0%). Agricultural extension agents being the leading sources of information among respondents could be attributed to EKADP contact farmers selected for this study. This finding agree with the report of Ekumankama (2000) that radio is the most preferred tool of mass communication of

farmers in Nigeria. Radio is approved as the major and crucial means of disseminating information to the rural population of developing countries (FAO, 2001).

4.2.4 Respondents' membership of any crop related enterprise association, main sources of initial capital and main buyers of yam produce

This section presents the results of respondents' membership of any crop related enterprise association, primary sources of initial capital and main buyers of yam products. Table 14 gives a summary of the results.

Table 14: Distribution of respondents' membership of any crop related enterprise association, main sources of initial capital and main buyers of yam produce

Variables	Frequency	Percentage
Membership of crop-related enterprise association		
Yes	196	33.8
No	384	66.2
Main sources of initial capital		
Own savings	404	69.7
Family and Friends	99	17.1
Bank credit	10	1.7
Cooperative	67	11.6
Main buyers of yam products(*)		-
Consumers	231	39.8

Retailers	281	48.4
Wholesalers	406	70.0
Government	0	0.0

Source: Field survey (2016)

Note: (*) implies multiple responses

Membership of Any Crop Related Enterprise Association

Results in Table 14 shows that majority (66.2%) of the respondents indicated non-member of any crop related enterprise group and only 33.8% were member. Non-membership among majority is more of disadvantage to yam entrepreneurial activities in the study area as only respondents who belong to a crop related association group is expected to have benefited in their agricultural activities through their participation. As noted by Onubuogu *et al.* (2014), membership of cooperative society affords farmers the opportunity of sharing information on modern farming practices. Also, Meinzen-Dick, Raju and Gulati (2002) argued that collective action realises scale economies by pooling smallholders' resources and that it enables smallholder groups to adopt technologies, increase their bargaining power, and overcome land size, capital and other wealth-related constraints.

Main Sources of Initial Capital

Table 14 shows that majority (69.7%) of the respondents started their yam farming activity from own savings, 17.1% sourced for initial capital from family/friends, 1.7% were from bank credit, 11.6% were from the cooperative group. This means that personal savings constitute the primary source of fund for yam entrepreneurial activities in Ekiti State. The study hence agree with the report by Nkang *et al.* (2006) that increase access of farmers to loan in commercial banks is a serious problem because to inability to provide requested collateral, coupled with the risky that can befall agricultural production. This finding

corroborates Ireland, Hitt and Sirmon (2003) that financial resources for entrepreneurial ventures are often sought from venture capitalists and even family members.

Main Buyers of Yam Products

Table 14 further shows that about 39.8% sell to consumers, 48.4% to retailers, the majority (70.0%) sell to wholesalers and no respondents sell to the government.

4.2.5 Respondents' Numbers of Workers, Labour Type, Number of Hours Devoted Per Day and Main Reason for Involvement

This section presented the numbers of workers, labour type, number of hours devoted per day and main reason for involvement of respondents. Table 15 gives a summary of the results.

Table 15: Distribution of respondents by numbers of workers, labour type, number of hours devoted per day and main reason for involvement

Variables	Frequency	Percentage	Mean (Std. Dev.)
Numbers of workers			2.51 (1.065)
1 – 2	375	64.7	
3 – 4	159	27.4	
5 – 6	45	7.8	
6 – 10	1	0.2	
Labour type			
Family only	60	10.3	
Hired only	89	15.3	
Family and Hired	431	74.3	
Number of hours devoted per day			5.43 (1.716)
1 – 3	76	13.1	
4 – 6	342	59.0	
7 – 9	162	27.9	
Main reason for involvement			
Exclusively for home consumption with rarely any surpluses produced	62	10.7	
Mostly for home consumption, but	202	34.8	

with the intention of selling

surpluses on the market

Partly for the market and partly for	277	47.7
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home consumption

Exclusively for the market	0	0.0
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Source: Field survey (2016)

Numbers of Workers Used for Yam Entrepreneurial Activities

Results in Table 15 shows that majority (64.7%) of the respondents engaged 1 – 2 workers in yam entrepreneurial activities, 27.4% involved 3 to 4 workers, 7.8% hired 5 to 6 workers and only 0.2% engaged 6 to 10 workers for their yam farming activities. The average number of workers involved by respondents in their yam entrepreneurial activities was 3 persons.

Labour Type Used for Yam Entrepreneurial Activities

Results in Table 15 shows that majority (74.3%) used both family and hired labour for the yam entrepreneurial activities, 10.3% used only family and 15.3% used only hired labour. This finding agrees with Oluwatosin and Shittu (2014) study that families and hired labourer are the main sources of labour among yam farmers in Nigeria

Number of Hours Devoted Per Day to Yam Entrepreneurial Activities

Results in Table 15 shows that 13.1% devoted 1 to 3 hours working hours for the yam entrepreneurial activities, 59.0% dedicated 4 to 6 working hours and 27.9% devoted 7 to 9 working hours. The average working hours spent to yam entrepreneurial activities by respondents was 5 hours.

Main Reason for Involvement in Yam Entrepreneurial Activities

According to FAO (2012), smallholder farmers usually farm for one of four reasons: exclusively for home consumption with rarely any surpluses produced; Mostly for home

consumption, but with the intention of selling surpluses on the market; Partly for the market and partly for home consumption; or Exclusively for the market. Results of responses of respondents in the study area as presented in Table 15 shows that only 10.7% exclusively produce for home consumption with rarely any surpluses generated. FAO (2012) had noted that farmers in this category are seldom in the position to commit their minds and bodies to entrepreneurial tasks. While they may be entrepreneurial in spirit, they usually lack the opportunity to farm as entrepreneurs.

Table 15 also shows that 34.8% were involved mostly for home consumption, but with the intention of selling surpluses on the market. This finding indicates that farmers in this category produce yam beyond survival but may be limited in the opportunity to expand. FAO (2012) argued that farmers in this category are sometimes viewed as ‘pre-entrepreneurial’, requiring support to move into a more independent position. The FAO document added that at this level, farmers are not ‘entrepreneurs’ in the real sense and neither are they genuinely market-oriented.

Moreso, Table 15 shows that 47.7% of the respondents were involved partly for the market and partly for home consumption. This finding indicates that this category of farmers understand the value of farming for profit, but may be limited by access to basic factors of production such finance, labour or market information. FAO (2012) had stated that farmers in this category possess the attributes as entrepreneur, but they cannot risk family food requirements without greater certainty of income from crop production. The choice between producing primarily for the market with some produce utilised for home consumption or mainly for home consumption with some products sold in the market depends on their circumstances and their willingness to take risks.

The Table 15 further shows that none of the respondents was involved exclusively for the market. This indicates that no yam farmers in the study area are yet a full-grown farmers-entrepreneur as none could be found to produce for the market only.

4.2.6 Respondents' Plan to Expand Production, Access to Training, Number of Training Attended, Training Organization and Training Subjects

This section presents the results of respondents' plan to expand the production, access to training, number of seminar/training attended, training organisation, and training subject of respondents. Table 16 gives a summary of the results.

Table 16: Distribution of respondents by plan to expand the production, access to training, number of training attended, training organisation, and training subject

Variables	Frequency	Percentage
Plan to expand production		
Yes	580	100.0
Access to yam entrepreneurial business training/Seminar		
Yes	438	75.5
No	142	24.5
Number of seminar/training attended		
0	142	24.5
1	34	5.9
2	51	8.8
3	348	60.0
4	5	0.8
Training Organisation(s)		

Fadama	20	3.4
Agricultural Development Programme	397	68.4
Cooperative	21	3.6
Not applicable	142	24.5
Training Subject (s)		
General agro-enterprises	333	57.4
improved yam production practices	48	8.3
Yam processing	19	3.3
Agricultural Marketing and distribution	8	1.4
Irrigation	7	1.2
Savings and Records	1	0.2
Secured way of transporting produce	27	4.7
Not applicable	142	24.5

Source: Field survey (2016)

Results in Table 16 shows that all (100%) of the respondents were interested and planned to expand production in the chosen yam entrepreneurial activities. Results in Table 16 shows that majority (75.5%) of the respondents indicated they had access to yam entrepreneurial business training/Seminar and few (24.5%) of the respondents did not have access training yam-based entrepreneurial business training/Seminar.

The majority (60.0%) of the respondents who had access to training further indicated they attended up to three seminars. Only 5.9% had attended one seminar, 8.8% attended two trainings, 0.8% attended four trainings. The average number of training on yam entrepreneurial business training/seminar among respondents was three.

The majority (68.4%) of the respondents who had access to training further indicated that training was received from Agricultural Development Project, only 3.4% reported Fadama programme, 3.6% in their cooperative groups. Training Subjects from training organization as indicated in Table 16 were general agro-enterprise (57.4%). Also, improved yam production practices (8.3%), yam processing (3.3%), agricultural marketing and distribution (1.4%), savings and records of farm produce (0.2%) and secured way of transporting produce (4.7%). This finding implies that ADP in Ekiti state was involved in entrepreneurial building capacity of farmers but the average number of training received (three) is so small when compared with respondents' average years of experience (30years).

4.3 Attitude of Respondents Towards Yam Entrepreneurial Activities

Results of respondents' attitude towards yam entrepreneurial activities were presented in this section. Vesala and Peura (2002) had suggested that to understand farmers as entrepreneurs, there is need to know their view of how they perceive themselves being an entrepreneur (i.e., do farmers agree that they are entrepreneurs?). Table 17 and 18 gives a summary of the results.

Table 17: Attitude of Respondents to Yam Entrepreneurial Activities

Attitudinal Statements	Mean (Std Dev.)	Mean rank
I believe that agri-entrepreneurship extension education will empower my ability for yam entrepreneurial business	1.18 (1.024)	1
It is possible to make a living out and escape poverty in yam entrepreneurial business	1.03 (.855)	2
I am positive about myself and my yam entrepreneurial business that I will be successful	1.01 (1.020)	3
Adopting innovative practices cannot multiply my income	0.98 (1.098)	4
I learn from my setbacks and move on	0.79 (.924)	5
I do not believe in yam farming business, so I don't encourage others to start it	0.77 (1.040)	6
An agro-entrepreneur should have commercial characteristics to determine success	0.75 (.823)	7
Ability to try improved practices/services is needed to become a successful agro-entrepreneur	0.73 (.950)	8
Ability to make a timely decision does not determine success in agri-entrepreneurship	0.72 (1.037)	9
I would rather own a yam entrepreneurial business than earn a higher salary working for someone else	0.71 (1.032)	10
Adding value to my yam tubers products/services will increase sales and income	0.56 (1.058)	11
Fulltime commitment and continuous extension training to yam enterprise is a key to success	0.48 (.947)	12

I can pay any amount to seek for extension information to improve my yam entrepreneurial business	0.14 (.947)	13
I am prepared to take risks and bear all uncertainty in farming	0.03 (.899)	14
I often find new opportunities to explore to increase my income	-0.01 (1.162)	15
I plan what to do according to the schedule	-0.16 (1.007)	16
I have no ambition for running my yam entrepreneurial activities.	-0.26 (1.324)	17
I do not have time to be thinking of creativity for my yam entrepreneurial activities	-0.45 (.965)	18
Overall mean	0.50 (0.493)	

Source: Field survey (2016)

Note: Scale: strongly agree=2, agree=1, undecided=0, disagree= -1, strongly disagree= -2;
Rank: 1-18 implies highest (positive) to lowest (negative) attitudinal rank

Table 18: Summary of respondents' categories of attitude towards yam entrepreneurial activities

Category	Range of points	Frequency	Percentages
Positive (Favourable)	36.0 – 1.0	573	98.8
Neutral	0.0	5	0.9
Negative (unfavourable)	-1.0 – - 36.0	2	0.3
Total		580	100

Source: Field survey (2016)

Generally, the grand mean value of 0.50 found in table 17 and 98.8% of the respondents having attitudinal scores between 36.0 – 1.0 points as illustrated in Table 18 indicated that yam farmers entrepreneur in the study area has positive attitude towards yam entrepreneurial activities. This finding implies that yam farmers in the study area possess favourable behavioural tendencies for yam entrepreneurial activities. This finding corroborates FAO

(2012) report that many small-scale farmers own many of the qualities of an entrepreneur but may still focus on maintaining their traditional way of life.

Specifically, on results of individual attitudinal statement illustrated in Table 17, the opinion of respondents that agri-entrepreneurship extension education can empower yam farmers' ability (mean=1.18) was considered positive attitude. This finding implies that yam farmers in the study area had the favourable attitude for extension education. This finding is against Ronning and Ljunggren (2007) who found that farmers in Norway had a negative attitude to agri-entrepreneurship extension education.

As regards opinion on yam entrepreneurial business as means of livelihood to escape poverty, the mean score (1.03) was considered positive attitude. This finding upholds the report by Osayande and Osabuohien (2016) that yam-based farming improved the standard of living of farmers.

Respondents' opinion for the positive mind to become successful in yam entrepreneurial business (mean=1.01) and ability to try improved practices as needed to become a successful agro-entrepreneur (mean=0.73) were found to be a positive attitude. This finding is an indication that yam farmers in the study area find their farming enterprise interesting and fascinating. The positive of the attitude of farmers to succeed in this study is in line with Apata (2015) report which indicated that farmers in South-west Nigeria had strong confidence in one's self to succeed. A similar finding was reported by Mujuru (2014) who found that most of the farmer-entrepreneurs showed good prospects of their farming enterprises.

Views of respondents the statement "if adopting innovative practices cannot multiply yam entrepreneurial activities' income" had the mean score of 0.98 was considered positive attitude. This finding showed that farmers in yam entrepreneurial activities apply innovations

in the business and are also likely to adopt alternative technology to will improved production.. This important innovative attributes possessed by these farmers was reported by FAO (2012) as an essential quality for a farmer-entrepreneur, especially when the farming venture faces strong competition or operates in a rapidly changing environment.

The attitude of respondents' preference to own yam entrepreneurial business rather than earning a higher salary when working for someone else (mean=0.71) and opinion on fulltime commitment and many extension training on yam enterprises as key to success (mean=0.48) were found to be positive. The indication that respondents have a positive attitude to working for themselves on fulltime shows that yam farmers in the study area were passionate about yam entrepreneurial activities. Nieman *et al.* (2004) have however identified passion as one of the critical success factors in entrepreneurship. Nieman *et al.* further opined that those entrepreneurs who have desire are more likely to succeed in their businesses.

The feelings for no belief in yam farming business and encouragement of others to start it (mean=0.77) was positive. This means that respondents disagreed with the opinion of the attitudinal statement and alternative statement holds here. This shows that yam farmers in the study area are likely to include family members most especially their children being their first contact persons. A similar finding was reported by Mujuru (2014) who found that farmers in Zimbabwe make succession plan by training their children on farming activities as a family business.

The opinion of respondents to add value to agricultural products/services to increase sales and income (mean=0.56) and view if an agro-entrepreneur should have commercial characteristics in determining success (mean=0.75). Also, idea of learning from setbacks and move (mean= 0.79), ability to make timely decision does not determine success in agri-entrepreneurship (mean=0.72) and readiness pay for extension services on improved practices

for their yam entrepreneurial business (mean=0.14) were therefore considered positive attitude. This finding implies that yam farmers are willing to pay for extension services to improve their chosen yam entrepreneurial activities.

The preparedness to take risks and bear all uncertainty (mean=0.03) was considered neutral attitude. This finding implies that yam farmers were risked neutral. Risk-neutral farmers according to Ajijola *et al.* (2011) are neither risk averters or avoiders nor risk preferring individuals. They further noted that risk neutral person would select the alternative with the highest expected outcome, regardless of the probabilities associated with possibility for gains or losses.

Opinion to often find new opportunities to explore in order to increase income (mean= -0.01), planning what to do according to the schedule (mean= -0.16). Also, having ambition for running yam entrepreneurial activities (mean= -0.26) and time to be thinking of creativity for yam entrepreneurial activities (mean= -0.45) were found to be negative. This negative attitude of respondents is against the necessary characteristics expected of an entrepreneur. As noted by Kodithuwakku and Rosa (2002), finding new opportunities to explore is fundamental to the success of any entrepreneur. Similarly, FAO (2012) had stated that farmer-entrepreneur should always seek opportunities to improve and expand his farming venture.

4.4 Respondents' Access to Livelihood Capitals and Assets

4.4.1 Access to livelihood capitals for yam entrepreneurial activities

This section presented the results and discussed farmers' level of access to livelihood capitals/resources needed for successful yam entrepreneurial activities among respondents.

Table 19 gives a summary of the results.

Table 19: Level of access to livelihood capitals for yam entrepreneurial activities

Livelihood capitals and resources for yam entrepreneurial activities			No access Freq. (%)	Restricted Access Freq. (%)	Free Access Freq. (%)	Mean score (Std. Dev.)	Mean rank
A. Financial capitals							
Income/saving able to meet basic yam enterprises needs			25 (4.3)	49 (8.4)	506 (87.2)	2.83 (.477)	1
Credit loan			359 (61.9)	151 (26.0)	70 (12.1)	1.50 (.701)	2
B. Physical capitals							
Clothes			0(0.0)	0(0.0)	312(100)	3.00 (.000)	1
Yam enterprises input resources			0 (0.0)	92 (15.9)	488 (84.1)	2.84 (.365)	2
Radio			0(0.0)	162 (27.9)	418 (72.1)	2.72 (.449)	3
Mobile phone			20 (3.4)	137 (23.6)	423 (72.9)	2.69 (.530)	4
Television			0 (0.0)	203 (35.0)	377 (65.0)	2.64 (.509)	5
Storage structure			24 (4.1)	251 (43.3)	305 (52.6)	2.48 (.577)	6
Yam processing equipment			72 (12.4)	237 (40.9)	271 (46.7)	2.34 (.688)	7
Shop/land for sales of yam produce/processed products			21 (3.6)	365 (62.9)	194 (33.4)	2.30 (.531)	8
Car/motorcycle/tricycle/bicycle			162 (27.9)	160 (27.6)	258 (44.5)	2.17 (.835)	9
Healthcare facilities			75 (12.9)	399 (68.8)	106 (18.3)	2.05 (.556)	10
Power generator/ NEPA			257 (44.3)	234 (40.3)	89 (15.3)	1.71 (.716)	11
Construction/maintenance of farm road			303 (52.2)	176 (30.3)	101 (17.4)	1.65 (.759)	12

Farm tools and machinery	312 (53.8)	242 (41.7)	26 (4.5)	1.51 (.583)	13
C. Social capitals					
Participation in social gathering	0 (0.0)	65 (11.2)	515 (88.8)	2.89 (.315)	1
Ability to networks and contact with other yam entrepreneurs, NGOs and Agricultural Extension agents	17 (2.9)	60 (10.3)	503 (86.7)	2.84 (.441)	2
Satisfaction as yam entrepreneur	82 (14.1)	40 (6.9)	458 (79.0)	2.65 (.715)	3
Membership of yam related associations	68 (11.7)	71 (12.2)	441 (76.0)	2.64 (.681)	4
Decision making ability	55 (9.5)	118 (20.3)	407 (70.2)	2.61 (.654)	5
Finance traditional weeding and Payment of bride price	89 (15.3)	451 (77.8)	40 (6.9)	1.92 (.464)	6
D. Human capitals					
Yam entrepreneurial activities knowledge and skill competency in yam farming	13 (2.2)	29 (5.0)	538 (92.8)	2.91 (.361)	1
Health condition	8 (1.4)	401 (69.1)	171 (29.5)	2.28 (.479)	2
Formal educational attainment	52 (9.0)	422 (72.8)	106 (18.3)	2.09 (.514)	3
Experienced hired labour	142 (24.5)	360 (62.1)	78 (13.4)	1.89 (.606)	4
E. Natural capitals					
Fertile land for yam cultivation	0 (0.0)	75 (12.9)	505 (87.1)	2.87 (.335)	1
Water for processing food	0 (0.0)	115 (19.8)	465 (80.2)	2.80 (.399)	2
Safe drinking water	37 (6.4)	117 (20.2)	426 (73.4)	2.67 (.590)	3
Favourable weather variability for yam entrepreneurial activities	129 (22.2)	0 (0.0)	451 (77.8)	2.56 (.832)	4
Water for yam irrigation farming	225 (38.8)	0 (0.0)	355 (61.2)	2.22 (.975)	5
Average accessibility percentage	18.5%	34.1%	52.7%		

Source: Field survey (2016)

Financial capital includes all the different monetary resources yam farmers can use to develop and implement strategies to create wealth. Enterprise with substantial financial

resources has the slack required to identify and subsequently exploit entrepreneurial opportunities (Ireland *et al.*, 2003). Results of data presented in Table 19 shows that majority (87.2%) of the respondents had free access to their income and saving to implement yam entrepreneurial activities. This finding is not surprising since the control of personal income and savings rest on the owner. Results also show that majority (61.9%) of the respondents had no access to credit loan for yam entrepreneurial activities. A similar finding was reported by Ajijola *et al.* (2014) that inadequate access to credit facilities was the major problem affecting yam production in Oke-Ogun, Oyo state.

As regards access to physical capital/resources for yam entrepreneurial enterprise, access to clothes (mean=3.00), other input resources for yam enterprises (mean=2.84) and radio (mean=2.72) was rated first, second and third position respectively. This finding shows that clothing, input resources for yam enterprises and radio were the leading physical resources used for yam entrepreneurial activities among yam farmers.

Social capital is the entire set of value-creating resources that accrue to the yam entrepreneurship activities because of its strong network of intra- and inter-firm relationships (Ireland, Hitt and Vaidyanath, 2002; Koka and Prescott, 2002). As shown in Table 19, social capital/resources freely accessible and mostly used for yam entrepreneurial activities by respondents were participation in social gathering (88.8%). Furthermore, ability to networks and contact with other yam entrepreneurs, NGOs and agricultural extension agents (86.7%), satisfaction as yam entrepreneur (79.0%) and membership of yam-related associations (76.0%).

Dess and Lumpkin (2001) defined human capital as the “individual capabilities, knowledge, skill, and experience of the hired labourers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning”. The ability to access human capital affects the enterprise’s efforts to create value

and worth (Zahra and George, 2002). Results presented in table 19 shows that majority (92.8%) of the respondents had free access to their knowledge and skill competency in yam cultivation (mean=2.91). This finding implies that the pool of expertise available for yam farmers to perform related yam entrepreneurial tasks was mostly within their self-knowledge and competency of yam cultivation. This result is in accordance with Ogunwale (2003) and Nwaogwugwu and Matthews-Njoku, (2017) in which own-labour accounted for the majority of the total labour demand in farming households. The findings further show that yam farmers had restricted access to human capital in their health condition (69.1%), formal education (72.8%) and hired labour (62.1%). This finding means that attaining good health status, formal training among farmers and hiring experienced labourers were not affordable even when they were available only at higher purchase/rent in cash or kind in the study area. The situation of farmers in the study area could have adverse effect to their performance (Coff, 2002). In the view of Ugwu (2006), health affects agricultural system by altering the health of the farmers and that poor health results in loss of work days or decreases workers capacity, decrease innovation ability and ability to explore diverse farming practices. Egbetokun, Ajijola, Omonona and Omidele (2012) found a correlation between health and productivity of labour and ascertained that health status of farmers determines the output of his/her labour supply and hence agricultural productivity. Natural capitals/resources mostly accessible for yam entrepreneurial activities were fertile land for yam cultivation (mean=2.87), clean water for processing food (mean=2.80) and safe drinking water (mean=2.76).

4.4.2 Sustainable access to livelihood assets as contributed by yam entrepreneurial activities

This section presents the results and discussion respondents' perception of how access to capitals/resources utilised for yam entrepreneurial activities has contributed to sustainable access to livelihood assets. Table 20 gives a summary of the results.

Table 20: Sustainable Access to livelihood assets as contributed by yam entrepreneurial activities

Livelihood Assets	Mean score (Std. Dev.)	Mean rank	Remarks
A. Financial Assets			
Income/saving able to meet basic needs	0.75 (.951)	1	High
Credit loan	0.57 (1.178)	2	High
B. Physical Assets			
Clothes	1.40 (.701)	1	High
Yam enterprises input resources	1.19 (1.003)	2	High
Cemented and zinc roof house	1.05 (1.210)	3	High
Farm tools and machinery	0.75 (.994)	4	High
Mobile phone	0.75 (1.248)	4	High
Healthcare facilities	0.62 (1.132)	6	High
Yam processing equipment	0.56 (1.025)	7	High
Construction/maintenance of farm road	0.26 (.893)	8	Medium
Television	0.16 (1.265)	9	Medium
Radio	0.14 (1.117)	10	Medium
Car/motorcycle/tricycle/bicycle	0.07 (1.393)	11	Medium
House furniture	0.06 (1.044)	12	Medium
Power generator/ NEPA	0.03 (1.013)	13	Medium
Shop/land for sales of yam produce/processed products	-0.14 (1.367)	14	Low
C. Social Assets			

Satisfaction as yam farmers entrepreneur	1.02 (1.056)	1	High
Participation in social gathering	0.76 (1.131)	2	High
Decision making ability	0.75 (1.212)	3	High
Ability to networks and contact with other yam entrepreneurs, NGOs and Agricultural Extension agents	0.42 (1.143)	4	Medium
Ability to finance traditional wedding and Payment of bride price	0.09 (1.313)	5	Medium
Membership of yam related associations	0.07 (1.253)	6	Medium
D. Human Assets			
Yam entrepreneurial activities knowledge and skill competency	1.02 (1.070)	1	High
Health condition	0.70 (1.124)	2	High
Formal educational attainment	0.52 (1.058)	3	High
E. Natural Assets			
Safe drinking water	0.40 (1.072)	1	Medium
Water for yam irrigation farming	0.34 (1.086)	2	Medium
Water for processing food	0.02 (1.417)	3	Medium
Fertile land for yam cultivation	-0.41 (1.323)	4	Low
Favourable weather variability for yam entrepreneurial activities	-0.93 (1.214)	5	Low
Grand mean	0.44		Medium

Source: Field survey (2016)

Note

Scale: strongly agree =2, agree =1, undecided =0, disagree= -1 and strongly disagree= -2.

Rank: 1-14 implies highest to lowest rank

Remark: High contribution (0.50 to 2.0 mean score) i.e mean score towards positive (≥ 1.00)

Medium contribution (0.00 to 0.44 mean score) i.e mean score < 1.00 but > -1.00

Low contribution (-0.01 to - 2.0 mean score) i.e mean score towards negative

The Contributions Yam Entrepreneurial Activities to Accessibility of Financial Assets

The contribution of yam entrepreneurial activities to farmers' access to income and savings able to meet basic needs (mean=0.75) and credit loan (mean=0.57) as presented in Table 20 were both considered high and were rated first and second respectively.

As perceived by respondents, this finding implies that engagement in yam entrepreneurial activities is capable of earning the income that can meet their basic needs and enterprise could be used to secure loans.

The Contributions Yam Entrepreneurial Activities to Accessibility of Physical Assets

As presented in Table 20, the descending order of perceived high contribution of yam entrepreneurial capitals accessed to yam farmers' access to physical assets were clothing (mean=1.40), yam enterprises input resources (mean=1.19), cemented and zinc roof house (mean=1.05), farm tools and machinery (mean=0.75), mobile phone (mean=0.75), radio (mean=0.14), healthcare facilities (mean=0.62), yam processing equipment (mean=0.56), house furniture (mean=0.06), construction/maintenance of farm road (mean=0.26), television (mean=0.16) and car/motorcycle/tricycle/bicycle (mean=0.07). This finding implies that farmers agreed that the possession of these physical assets was greatly influenced by their engagement in the yam entrepreneurial activities. Results further show that only contribution to access to power generator/ NEPA (mean=0.03) and shop/land (-0.14) were considered moderate and low respectively.

The Contributions of Yam Entrepreneurial Activities to Accessibility of Social Assets

Results illustrated in Table 20 show high contribution of yam entrepreneurial capitals accessed to yam farmers' satisfaction as a yam farmer entrepreneur (mean=1.02), networks and contact with other yam entrepreneurs. NGOs and agricultural extension agents (mean=0.42), ability to participate in social gathering (mean=0.76), decision making ability (mean=0.75), ability to finance traditional wedding and payment of bride price (mean=0.09), and becoming a membership of crop-related associations (mean=0.07). This finding implies that yam entrepreneurial activities had a highly significant contribution to the social life of farmers in the study area. Similar results were reported by previous studies indicating the

critical roles yam plays in traditional culture, religious heritage/ceremony, and the annual celebration of new yam festival in several communities in south-western Nigeria (Amujoyegbe and Bamire (2005; Izekor and Olumese, 2010; Amusa, 2000).

The Contributions of Yam Entrepreneurial Activities to Accessibility of Human Assets

The contribution of yam entrepreneurial capitals accessed to yam farmers' access to yam entrepreneurial capitals knowledge and skill competency (mean=1.02), good health condition (mean=0.70), and formal educational attainment (mean=0.52) as presented in Table 20 were considered high contributions and rated first, second and third position respectively.

The Contributions of Yam Entrepreneurial Activities to Accessibility of Natural Assets

The illustrated results in Table 20 shows the high contribution of yam entrepreneurial capitals to access of respondents to fertile land for yam cultivation (mean= -0.41), safe drinking water (mean=0.40), water for crop/yam irrigation farming (mean=0.34). The only access to water for processing food (mean=0.02) and favourable weather variability for yam entrepreneurial capitals (mean= - 0.93) were considered to be moderate and low contribution respectively.

4.5 Knowledge of Yam Entrepreneurial Skills

This section presents the results and discuss the knowledge level of respondents for yam entrepreneurial activities. Table 21 and 22 gives a summary of the results.

Table 21: Percentage distribution of respondents knowing yam entrepreneurial skills

Knowledge Areas		Frequency	Percentage
A. Yam cultivation skills			
1.	Improved land preparation	580	100.0
2.	Selecting suitable fertile land for yam production	580	100.0
3.	Performing improved yam miniset technology	287	49.5
4.	Mulching	580	100.0
5.	Sticking	580	100.0
6.	Sourcing (rent/purchase) use of necessary farm tools/machinery	66	11.4
7.	Operating farm machinery	74	12.8
8.	Recommended row to row and planting distance	473	81.6
9.	Recommended application and dose of fertiliser, pesticide, insecticide and weedicide	429	74.0
10.	Operating knapsack sprayer	319	55.0
11.	Appropriate time of harvesting	580	100.0
12.	Improved storage of yam tubers and processed products	451	77.8
B. Opportunity skills			
1.	Identifying, investigating and evaluating opportunities	127	21.9
2.	Sourcing for the fund to finance yam farming and processing activities	86	14.8
3.	Value addition skills in processing yam tuber to different products	73	12.6
4.	Packaging skills of yam produce and processed products	89	15.3
5.	Market and customer orientation	242	41.7

C. Management skills			
1.	Keeping basic records of farm income and expenses	94	16.2
2.	Time management skills	356	61.4
3.	Managing/supervision skills of hired farm labours and their needs	312	53.8
4.	Planning, prioritising and organising yam farming tasks	188	32.4
5.	Assessing and managing farm risk	78	13.4
6.	Improving efficiency, cutting costs and increase productivity	133	22.9
7.	Problem-solving skills	302	52.1
8.	Skills in decision making, control and negotiation	359	61.9
9.	Precautionary practices against yam farming related hazards	288	49.7
10.	Skills for ensuring full security of yam enterprises	179	30.9

D. Co-operation / networking skills			
1.	Identifying and cooperating with other players such as;		
	a. Agric. extension agents	299	39.4
	b. Customers	452	77.9
	c. farmers' cooperative group	224	38.6
	d. support NGOs	81	14.0
	e. support government bodies	61	10.5
2.	Effective networking and communication with other players through electronic networking tools;		
	a. Facebook	115	19.8
	b. Electronic mailing address	47	8.1
	c. Whatsapp	69	11.9
	d. 2go	50	8.6
	e. Voice call/SMS	314	54.1

3.	Team working skills	247	42.6
4.	Training and developing others	145	25.0
5.	Motivation and Leadership of farmers' group skills	111	19.1
E.	Customer/marketing skills		
1.	Skills for transporting yam produce/products securely to the market	167	28.8
2.	Skills of identifying and understanding the demand of the customer	254	43.8
3.	Skills of finding distribution channels	99	17.1
4.	Avoiding failing to meet customer's specification	107	18.4
5.	Persuasive communication and negotiation skills	173	29.8
6.	Fix price for different yam produce/processed product	119	20.5
7.	Becoming more effective in satisfying the need of buyers that buy yam produce	180	31.0

Source: Field survey (2016)

4.5.1 Knowledge of Yam Cultivation Skills

Table 21 shows that all (100%) of the respondents indicated they knew skill in improved land preparation, selecting suitable fertile land for yam production, mulching, sticking an appropriate time of harvesting respectively.

Table 21 further shows that majority (81.6%) had the knowledge of recommended row to row and plant to plant spacing, 55% had the knowledge of operating knapsack sprayer, 74% had the knowledge of recommended dose and application of fertiliser, pesticide, insecticide and weedicide. A large population (81.6%) of the respondents indicated that they have the knowledge of recommended dose and use of fertiliser, pesticide, insecticide and weedicide is expected to influence yam production positively. This is contained in a statement by Korieocha *et al.* (2011) that weeds are known to compete with crops for space, light, water

and nutrient and could cause a significant yield loss due to if not controlled. Only 8.6% knew methods of processing yam tubers and processed products, 11.4% knew sourcing for farm machinery, and 12.8% had knowledge of operating farm machinery.

4.5.2 Knowledge of Opportunity Skills

The Table 21 shows that percentage distribution of respondents with knowledge of opportunity skills were market and customer orientation (41.7%), sourcing for fund to finance yam farming and processing activities (14.8%). Furthermore are value addition skills in processing yam tuber to different products (12.6%), identifying, investigating and evaluating opportunities (21.9%), packaging skills of yam produce and processed products (15.3%).

4.5.3 Knowledge of Management Skills

Anderson and Jack (2000) insist that entrepreneurship is more than managerialism, although successful business creation also requires managerial competencies. The difference, they claim, seems to lie in the novelty in creating new businesses; the opportunity perception, the development of ideas into viable opportunities and combining resources together are for them as a great deal an art as science.

Table 21 shows that percentage distribution of respondents with knowledge of management skills were time management skills (61.4%), skills for ensuring full security of yam enterprises (30.9%), skills in decision making. Furthermore are control and negotiation (61.9%), managing/supervision skills of hired farm labours and their needs (53.8%), precautionary practices against crop farming related hazards (49.7%), improving efficiency, cutting costs and increase productivity (22.9%).

Knowledge of management skill for assessing and managing farm risk was indicated among few (13.4%) of the respondents. Agricultural enterprises are risky. Knowledge of assessing

and managing farm risk found among few respondents could be attributed to farmers' non-readiness to manage risk in Nigeria (Adah, Chia, and Shaibu 2016). Instead, most farmers often adopt traditional means through less risky technologies of lower but reliably yielding drought-resistant crops; by seeking diversification both regarding production activities on-farm and income generating activities off-farm; and by devising informal and formal risk-sharing arrangements (Aidoo, Mensah, Wie and Awunyo-vitor, 2014).

With most (52.1%) indicating that they possess the knowledge of problem-solving skills implies a tool for successful yam farmer entrepreneurs. Timmons and Spenelli (2003) view successful entrepreneurs as those who seek to overcome hurdles, solve problems, complete jobs, disciplined and persistent in solving problems.

4.5.4 Knowledge of Co-operation/networking skills

Table 21 shows percentage distribution of respondents with knowledge co-operation and networking skills. The percentage of respondents with knowledge of identifying and cooperating with other players were; Agric. extension agents (39.4%), farmers' cooperative group (38.6%), customers (77.9%), support NGOs (14.0%), and support government bodies (10.5%). The percentage distribution of respondents with knowledge of effective networking and communication with other players through electronic networking tools were; voice call/voice call/SMS (54.1%), Facebook (19.8%), WhatsApp (11.9%), electronic mailing address (8.1%) and 2go (8.6). Other percentage distributions include team working skills (48.4%), training and developing others (25.0%) and motivation and leadership of farmers' group skills.

4.5.5 Knowledge of Customer/Marketing Skills

Prosperous farmers in the present time and future must manage the production, marketing and economic affairs (Yaaghubi *et al.*, 2009). The result presented in Table 21 shows the percentage distribution of respondents with knowledge of customer/marketing skills were; persuasive communication and negotiation skills (29.8%). Furthermore are capabilities of identifying and understanding the demand of the customer (43.8%), skills for transporting yams produce/products securely to the market (28.8%), capabilities of finding distribution channels (17.1%), fix price for different yam produce/processed product (20.5%), and avoiding failing to meet customer's specification (18.4%) and 31.0% of the respondents indicated they had the knowledge in satisfying the need of buyers that buy yam tubers/processed produce. This finding showed that respondents possess the entrepreneurial expertise against loss of income and exploitation of farmer entrepreneurs by intermediaries and satisfying customers. This is contained in a statement by Dollinger (2008) that a successful entrepreneur should be able to satisfy clients. Maru (2003) also stated that those farmers who recognise the market opportunity are enjoying more chance to succeed than the individual who does not recognize this opportunity.

4.5.6 Summary of the knowledge level of yam entrepreneurial skills of respondents

Data presented in Table 22 shows the percentage distribution of respondents of yam entrepreneurial skills in different categories of knowledge levels. McElwee (2008) had suggested that knowledge of entrepreneurship skills are fundamental to developing and improving the farm business.

Table 22: Summary of respondents' knowledge level of yam entrepreneurial skills

	Categories	Very Low	Low	Medium	High	Very High	Mean (Std. Dev.)
	Index range	(0 – 20)	(21 – 40)	(41 – 60)	(61 – 80)	(81 – 100)	
		Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	
A.	Yam cultivation skills	0 (0.0)	10 (1.7)	78 (13.4)	485 (83.6)	34 (5.9)	67.0 (9.654)
B.	Opportunity skills	414 (71.4)	132 (22.8)	27 (4.7)	21 (3.6)	7 (1.2)	21.3 (18.031)
C.	Management skills	130 (22.4)	219 (37.8)	192 (33.1)	39 (6.7)	0 (0.0)	39.5 (17.520)
D.	Co-operation and networking skills	97 (16.7)	414 (71.4)	61 (10.5)	8 (1.4)	0 (0.0)	29.3 (11.663)
E.	Customer and marketing skills	237 (40.9)	176 (30.3)	152 (26.2)	13 (2.2)	2 (0.3)	27.1 (17.516)
	Overall (entrepreneurial skills)	0 (0.0)	363 (62.6)	217 (37.4)	0 (0.0)	0 (0.0)	38.9 (6.082)

Index range = 100 (percentage) / Categories (5) = 20 range of interval was used

Table 22 indicates that majority (62.6%) of the respondents had low knowledge level of the overall yam entrepreneurial skills. Also, the majority (83.6%) had high knowledge level of yam cultivation skills while management skills (mean=39.5), co-operation/networking (mean=29.3), customer/marketing skills (mean=27.1) and opportunity skills (mean=21.3) of respondents were considered low. This finding is in line with Apata (2015) who found that few farmers in Southwest Nigeria have modest communication skills that aid adoption of effective entrepreneurial processes. This finding indicates that farmers are more knowledgeable in the area of yam cultivation practices. This study agrees with Onyebinama and Onyebinama (2010) found that most farmers in Nigeria have limited entrepreneurial (technical and managerial) capacity. Onyebinama and Onyebinama further argued that the primary aim of the current extension education practices in Nigeria is the dissemination of information on and in introduction improved farm technologies to farmers. Without any

provisions for improving the ability of these farmers to cope with the changes in production organization resulting from the introduction of the new technologies. Regarding areas with low knowledge, Weissuleder and Heckeley (2008) had inferred that lack of knowledge is responsible for the inability to recognise opportunities, for failure to plan with sufficient accuracy, or for fear of not being able to execute plans properly.

The overall skills of respondents in Table 22 showed that majority (62.6%) had low knowledge level. This finding indicates that respondents' knowledge of yam entrepreneurial skills is generally low.

4.6 Capacity Building Needs of Respondents on Yam Entrepreneurial Skills

This section of the study presented the task and skill gap analyses of areas where yam farmers need capacity building through training. Ogundele and Olayemi (2004) opined that entrepreneurship training would equip the farmers with skills for constant improvement and innovation. Timmons and Spinelli (2004) further affirm that entrepreneurship act can be learnt.

4.6.1 Task Analysis of Yam Entrepreneurial Skills

Task analysis involved the opinion of respondents on the frequency of performance, importance and difficulty of tasks.

4.6.1.1 The frequency of Performance of Yam Entrepreneurial Tasks

This section presents the results of frequency rate of performance of yam entrepreneurial tasks among respondents. Table 23 gives a summary of the results.

Table 23: Frequency of performance of yam entrepreneurial tasks among respondents

Yam Entrepreneurial Tasks	Mean score (Std. Dev.)	Mean rank
A. Yam cultivation tasks		
Mulching	3.79 (1.056)	1
Selecting suitable fertile land for yam production	3.36 (1.315)	2
Recommended row to row and planting distance	3.23 (.564)	3
The use Knapsack sprayer	3.20 (.609)	4
Determining appropriate time for harvesting	3.12 (1.070)	5
Sticking	2.99 (1.068)	6
Processing yam tubers into different products	2.94 (1.515)	7
Storing yam tubers and processed products	2.86 (.788)	8
Improved land preparation	2.23 (.997)	9
Sourcing (rent/purchase) use of necessary farm tools/machinery	2.13 (.940)	10
Performing improved yam miniset technology	1.56 (.854)	11

Dose and method of application of agrochemicals and fertiliser.	1.45 (.843)	12
Operating farm machinery	1.29 (.538)	13
Note: Scale used; Seldom =1, Occasionally =2, Once in three years =3, Once in two years = 4 and Yearly = 5.		
B. Opportunity skills		
Market and customer orientation	2.31 (.804)	1
Value addition skills in processing yam tuber to different products	1.77 (1.274)	2
Packaging skills of yam produce and processed products	1.68 (1.679)	3
Identifying, investigating and evaluating opportunities	1.66 (1.165)	4
Sourcing for fund to finance yam farming and processing activities	1.27 (.443)	5
C. Management skills		
Precautionary practices against yam farming related hazards	2.96 (1.361)	1
Planning, prioritising and organising yam farming tasks	2.61 (1.074)	2
Skills for ensuring full security of yam enterprises	2.58 (1.133)	3
Skills in decision making, control and negotiation	2.44 (1.024)	4
Managing/supervision skills of hired farm labours and their needs	2.05 (1.163)	5
Problem solving skills	2.00 (.887)	6
Assessing and managing farm risk	1.73 (.762)	7
Time management skills	1.58 (.886)	8
Keeping basic records of farm income and expenses	1.53 (.962)	9
Improving efficiency, cutting costs and increase productivity	1.25 (.576)	10
D. Co-operation / networking skills		
i. Identifying and cooperating with other actors such as;		
a. Agric. extension agents	3.20 (1.566)	1
b. Customers	2.94 (1.122)	2
c. farmers' cooperative group	2.72 (1.126)	3
d. support NGOs	1.08 (.283)	4

e.	support government bodies	1.05 (.321)	5
ii.	Effective networking and communication with other actors through;		
a.	Voice call and Short Message Sender (SMS)	3.08 (1.224)	1
b.	Facebook	2.08 (1.045)	2
c.	2go	1.90 (1.089)	3
d.	Whatapp	1.81 (1.202)	4
e.	Electronic mailing address	1.06 (.228)	5
iii.	Team working skills	1.44 (.660)	
iv.	Training and developing others	1.32 (.737)	
v.	Motivation and Leadership of farmers' group skills	2.17 (.941)	
E	Customer/marketing skills		
	Persuasive communication and negotiation skills	3.05 (1.104)	1
	Fix price of tubers / processed product	2.72 (1.080)	2
	Skills of identifying and understanding the demand of the customer	2.49 (1.028)	3
	Becoming more effective in satisfying the need of buyers.	2.43 (1.058)	4
2.	Skills for transporting yam produce/products securely to the market	2.09 (1.195)	5
	Avoiding failing to meet customer's specification	1.99 (1.403)	6
3.	Skills of finding distribution channels	1.88 (1.131)	7
Note: Scale used; seldom =1, occasionally =2, weekly to monthly =3, daily to weekly = 4 and daily = 5.			

Source: Field survey (2016)

Note: Rank: 1-13 implies highest to the lowest rank

The Frequency of Performing Yam cultivation Tasks

The presented in Table 23, the frequency of performing mulching task (mean=3.79) was rated the first position, selecting suitable fertile land for yam production task (mean=3.36) was ranked second, recommended row to row and plant to plant spacing task (mean=3.23) was ranked third. Also, operating knapsack sprayer task (mean=3.20) was ranked fourth,

determining appropriate time of harvesting (mean=3.12) was rated fifth, sticking task (mean=2.99) was rated sixth, processing yam tubers into different products (mean=2.94) was rated seventh, storing yam tubers and processed products (mean=2.86) was rated eighth. This finding implies that few yam farmers were involved in yearly storage activities as expected in the study area. This may be connected to the high cost of some of the storage technologies (Okoedo-Okojie and Onemolease, 2009), improved land preparation (mean=2.33) was rated ninth position, sourcing (rent/purchase) use of necessary farm tools/machinery task (mean=2.13) was rated the tenth position, improved yam miniset technology tasks (mean=1.56) was rated 11th. A similar result was reported by Anozie *et al.* (2014) who found that only a few farmers used the yam minisett technique in Imo state. Dose and method of application of agrochemicals and fertilizer task (mean=1.45) were rated 12th and operating farm machinery task (mean=1.29) and was ranked 13th.

The Frequency of Performing Opportunity Skill Tasks

The results of frequency of performing market and customer orientation task among respondents in Table 23 shows that market and customer orientation task (mean=2.31) was rated first position, value addition skills in processing yam tuber to different products task (mean=1.77) was rated second. Also, packaging skills of yam produce and processed products task (mean=1.68) was ranked third, investigating and evaluating opportunities task (mean=1.66) was rated fourth, sourcing for fund to finance yam farming and processing activities task (mean=1.27) was ranked sixth.

The Frequency of Performing Management Tasks

The results of frequency of performing management tasks in Table 23 shows that precautionary practices against crop farming related hazards (mean=2.96) was rated first position, performing planning, prioritising and organising yam farming tasks (mean=2.61)

was rated second, performing full security of yam enterprises task (mean=2.58) was rated third, performing decision making, control and negotiation task (mean=2.44) was rated fourth, performing managing/supervision skills of hired farm labours and their needs task (mean=2.05) was rated fifth. This result is similar with earlier findings of Udoh and Etim (2008) who in their study of farm level efficiency among cocoyam and water leaf farmers respectively found that labour was the most important resource input.

The results of frequency of performing problem solving skills task (mean=2.00) was rated sixth position, assessing and managing farm risk tasks (mean=1.73) was rated seventh position, performing time management task (mean=1.58) was rated eighth, keeping basic records of farm income and expenses task (mean=1.53) was rated ninth and performing improve efficiency, cutting costs and increase productivity task (mean=1.25) was rated the tenth position.

The Frequency of Performing Co-Operation and Networking Tasks

Table 23 shows the results of the frequency of identifying and cooperating with agricultural extension agents (mean=3.20) was rated the first position, networking and communication through Voice call/SMS (mean= 3.08) was rated second. This finding implies that yam farmers had adopted the use of Voice call/SMS through a mobile phone for receiving and sending information. A similar result by Aboh (2008); Falola and Adewumi (2011) and Sobalaje and Adigun (2013) also reported the high-frequency use of mobile phone by farmers for their farm operations.

The mean score of responses on the frequency of identifying and cooperating with customer task (mean=2.94) was rated the third position, identifying and collaborating with farmers' cooperative group task (mean=2.72) was ranked fourth. Training and developing others (mean=2.17) was ranked the fifth position, networking and communication through facebook

(mean=2.08) was rated the sixth position, networking and communication through 2go (mean= 1.90) was rated the seventh position, networking and communication through whatapp (mean= 1.81) was rated eight position, performing team working skill (mean= 1.44) was rated ninth position, training and developing others (mean=1.32) was rated the tenth position, identifying and cooperating with support NGOs task (mean=1.08) was rated 11th position, networking and communication through electronic mailing address was 1.06 and was rated 12th position. Identifying and cooperating with support government bodies task (mean=1.05) was rated 13th position.

The Frequency of Performing Customer/Marketing Tasks

The results of frequency of performing customer/marketing tasks in Table 23 shows that persuasive communication and negotiation, fixing price of tubers / processed product, identifying. In addition is the understanding the demand of the customer, satisfying the need of buyers, transporting yam produce/products securely to the market, avoiding failing to meet customer's specification and finding distribution channels were ranked first, second, third, fourth, fifth, sixth and seventh respectively.

4.6.1.2 The Importance of Yam Entrepreneurial Tasks

This section presents the results and discussion of the importance of yam entrepreneurial skill and tasks of farmers. Table 24 gives a summary of the results.

Table 24: Importance of yam entrepreneurial tasks among respondents

Yam Entrepreneurial Tasks		Mean score (Std. Dev.)	Mean rank
A. Yam cultivation skills			
Performing improved yam miniset technology		3.17 (.890)	1
Operating farm machinery		3.15 (.844)	2
Processing yam tubers into different products		2.72 (1.079)	3
Improved land preparation		2.60 (1.094)	4

Mulching	2.51 (1.216)	5
Selecting suitable fertile land for yam production	2.50 (1.050)	6
Sourcing (rent/purchase) use of necessary farm tools/machinery	2.43 (1.079)	7
Sticking	2.38 (1.003)	8
Improved storage technologies for yam tubers and processed products	2.31 (1.220)	9
Recommended row to row and planting distance	2.08 (1.113)	10
Dose and method of application of agrochemicals and fertiliser.	1.78 (.970)	11
Operating Knapsack sprayer	1.73 (1.086)	12
Appropriate time of harvesting	1.58 (.828)	13
B. Opportunity skills		
Sourcing for fund to finance yam farming and processing activities	2.94 (1.296)	1
Identifying, investigating and evaluating opportunities	1.98 (1.245)	2
Market and customer orientation	1.87 (.937)	3
Value addition skills in processing yam tuber to different products	1.73 (1.150)	4
Packaging skills of yam produce and processed products	1.68 (1.076)	5
C. Management skills		
Planning, prioritising and organising yam farming tasks	2.92 (1.027)	1
Skills for ensuring full security of yam enterprises	2.64 (1.102)	2
Precautionary practices against yam farming related hazards	2.52 (1.058)	3
Skills in decision making, control and negotiation	2.44 (1.130)	4
Keeping basic records of farm income and expenses	2.31 (1.347)	5
Problem-solving skills	2.29 (1.018)	6
Time management skills	1.92 (1.111)	7
Assessing and managing farm risk	1.86 (.817)	8
Improving efficiency, cutting costs and increase productivity	1.46 (.887)	9

Managing/supervision skills of hired farm labours and their needs	1.42 (.721)	10
D. Co-operation / networking skills		
i. Identifying and cooperating with other actors such as;		
a. Agric. extension agents	3.06 (1.141)	1
b. farmers' cooperative group	2.90 (1.181)	2
c. Customers	2.87 (1.044)	3
d. support NGOs	1.78 (1.168)	4
e. support government bodies	1.48 (.793)	5
ii. Effective networking and communication with other actors through electronic networking tools such as;		
a. Voice call / SMS	2.35 (1.049)	1
b. Facebook	2.18 (.983)	2
c. Whatapp	1.87 (1.095)	3
d. 2go	1.82 (.969)	4
e. Electronic mailing address	1.22 (.636)	5
iii. Team working skills	2.38 (1.364)	
iv. Training and developing others	1.31 (.742)	
v. Motivation and Leadership of farmers' group skills	2.02 (.978)	
E Customer/marketing skills		
Persuasive communication and negotiation skills	3.07 (.946)	1
Skills of identifying and understanding the demand of the customer	3.01 (1.093)	2
Fix price of tubers / processed product	2.47 (1.058)	3
Becoming more effective in satisfying the need of buyers.	2.28 (1.001)	4
Skills for transporting yam produce/products securely to the market	1.98 (1.177)	5
Avoiding failing to meet customer's specification	1.93 (1.336)	6
Skills of finding distribution channels	1.76 (1.058)	7

Source: Field survey (2016)

Note

Rank: 1-13 implies highest to the lowest rank

Scale: marginally important=1, moderately important=2, very Important=3, extremely important =4

The Importance of Yam cultivation tasks

The results of importance of yam cultivation tasks in Table 24 shows that performing improved yam miniset technology (mean=3.17), operating farm machinery (mean=3.15), processing yam into different products (mean=2.72). Also, improved land preparation (mean=2.60), mulching (mean=2.51), selecting suitable fertile land for yam production (mean=2.50), sticking (mean=2.43), sourcing (rent/purchase) use of necessary farm tools/machinery (mean=2.43), storing yam tubers and processed products (mean= 2.31), row to row and plant to plant spacing (mean=2.08), use of agro-chemicals and fertilizer (mean=1.78), operating knapsack sprayer (mean=1.73), and determining appropriate time of harvesting (1.58) were ranked first to thirthen positions respectively.

This finding implies that yam farmers indicated importance to storage of yam and its processed product for improving livelihood. The importance attached to improved storage by respondents may be attributed to the losses associated with yam tuber/products which can limit the potential income of the farmers, threatens food security and exacerbates conditions of poverty among farming households. Also, Philip *et al.* (2006) had proven that gross margins can be negative if farmers get the timing of their harvest wrong.

The Importance of Opportunity Tasks

The results of importance of opportunity tasks in Table 24 shows that sourcing for fund to finance yam farming and processing activities (mean= 2.94), identifying, investigating and evaluating opportunities (mean=1.98), market and customer orientation (mean=1.87), value addition skills in processing yam tuber to different products (mean= 1.73), packaging skills of

yam produce and processed products (mean= 1.68) were ranked first to fifth positions respectively.

The Importance of Management Tasks

The results of importance of management tasks in Table 24 shows that planning, prioritising and organising yam farming tasks (mean= 2.92), ensuring full security of yam enterprises (mean=2.64), precautionary practices against yam farming related hazards (mean=2.52), decision making, control and negotiation (mean= 2.44), keeping basic records of farm income and expenses (mean=2.31), problem solving skills (mean=2.29), time management (mean=1.92), assessing and managing farm risk (mean= 1.86), improving efficiency, cutting costs and increase productivity (mean=1.46), managing/supervision skills of hired farm labours and their needs (mean=1.42) and were ranked first to tenth position respectively

This level of importance attached to assessing and managing farm risk could be attributed to the high level of risk attached to farming activities. Mosley and Verschoor (2005) convincingly argued that farming is a risky business, especially for small scale farms, which operate in precarious conditions in poor countries. Furthermore, finding corroborates McElwee and Robson (2005) who suggested three important types of skills that farmers should have to succeed in their business such as the entrepreneurial, managerial and technical efficacy of farming skills.

The Importance of Co-operation/networking Tasks

The results of importance of management tasks in Table 24 shows that identifying and cooperating with agricultural extension agents task (mean=3.06) was rated the first position, identifying and cooperating with farmers' cooperative group task (mean=2.90) was rated 2nd position, identifying and cooperating with customers task (mean=2.87) was rated 3rd position,

team working skills (mean=2.38) was rated 4th position. Also, networking and communication through voice call/SMS (mean=2.35) was rated 5th position, networking and communication through facebook (mean= 2.18) was rated 6th position, motivation and leadership of farmers' group (mean=2.02) was rated 7th position. Furthermore, networking and communication through whatsapp (mean=1.87) was rated 8th position, networking and communication through 2go (mean=1.82) was rated 9th position, identifying and cooperating with support NGOs task (mean=1.78) was rated 10th position, identifying and cooperating with support government bodies (mean=1.48) was rated 11th position, training and developing others (mean=1.31) was rated 12th position, networking and communication through electronic mailing address was (mean=1.22) was rated 13th position.

4.6.1.3 The Difficulty of Performing Yam Entrepreneurial Tasks

This section presents the results and discussion of the difficulty of yam entrepreneurial tasks of farmers. Table 25 gives a summary of the results.

Table 25: Difficulty of yam entrepreneurial tasks among respondents

Yam Entrepreneurial Tasks		Mean score (Std. Dev.)	Mean rank
A. Yam cultivation skills			
Operating farm machinery		3.79 (.620)	1
Sourcing (rent/purchase) use of necessary farm tools/machinery		3.15 (1.135)	2
Performing improved yam miniset technology		2.91 (1.227)	3
Processing yam tubers into different products		2.78 (1.143)	4
Methods of storing yam tubers and processed products		2.52 (1.135)	5
Dose and method of application of agrochemicals and fertilizer.		1.93 (1.170)	6
Improved land preparation		1.74 (.994)	7
Recommended row to row and planting distant		1.64 (.760)	8
Operating knapsack sprayer		1.41 (.779)	9

Selecting suitable fertile land for yam production	1.07 (.342)	10
Mulching	1.03 (.182)	11
Sticking	1.02 (.153)	12
Appropriate time of harvesting	1.02 (.123)	12
B. Opportunity skills		
Sourcing for fund to finance yam farming and processing activities	3.13 (1.235)	1
Packaging skills of yam produce and processed products	2.34 (1.097)	2
Value addition skills in processing yam tuber to different products	2.24 (1.124)	3
Identifying, investigating and evaluating opportunities	1.79 (1.110)	4
Market and customer orientation	1.25 (.514)	5
C. Management skills		
Assessing and managing farm risk	3.78 (.520)	1
Planning, prioritising and organising yam farming tasks	2.74 (1.039)	2
Skills for ensuring full security of yam enterprises	2.67 (1.451)	3
Keeping basic records of farm income and expenses	2.35 (1.361)	4
Improving efficiency, cutting costs and increase productivity	2.31 (1.216)	5
Precautionary practices against yam farming related hazards	2.19 (.986)	6
Managing/supervision skills of hired farm labours and their needs	1.87 (1.132)	7
Time management skills	1.78 (1.136)	8
Problem-solving skills	1.28 (.715)	9
Skills in decision making, control and negotiation	1.25 (.684)	10
D. Co-operation / networking skills		
i. Identifying and cooperating with other players such as;		
a. support government bodies	3.60 (.844)	1
b. support NGOs	2.53 (.819)	2
c. farmers' cooperative group	2.28 (.857)	3
d. Customers	2.12 (.692)	4

	e. Agric. extension agents	1.86 (1.048)	5
	Effective networking and communication with other players through electronic networking tools;		
ii.	a. Electronic mailing address	3.45 (1.01)	1
	b. Whatapp	2.69 (.866)	2
	c. Facebook	2.24 (.697)	3
	d. 2go	2.08 (.730)	4
	e. Voice call / SMS	1.25 (.621)	5
iii.	Team working skills	2.62 (1.261)	
Iv	Training and developing others	2.00 (1.009)	
v.	Motivation and Leadership of farmers' group Skill	2.13 (1.122)	
E.	Customer/marketing skills		
	Persuasive communication and negotiation skills	2.47 (1.012)	1
	Fix price of yam tubers / processed product	2.19 (1.025)	2
	Skills of identifying and understanding the demand of the customer	2.12 (1.200)	3
	Becoming more effective in satisfying the need of buyers.	2.08 (.915)	4
	Skills for transporting yam produce/products securely to the market	1.88 (1.045)	5
	Avoiding failing to meet customer's specification	1.82 (1.931)	6
	Skills of finding distribution channels	1.63 (.931)	7

Source: Field survey (2016)

Note

Rank: 1-13 implies highest to lowest rank

Scale: Easy=1, moderately difficult =2, very difficult =3, extremely difficult =4

The difficulty of performing yam cultivation tasks

Difficulty of yam cultivation tasks as presented in Table 25 shows that difficulty of operating farm machinery (mean=3.79), sourcing (rent/purchase) use of necessary farm tools/machinery (mean=3.15), performing improved yam miniset technology (mean= 2.91), processing yam tubers into different products (mean= 2.78), storing yam tubers and

processed products (mean= 2.52), applying agro-chemicals and fertilizer (mean=1.93), performing improved land preparation (mean=1.74), applying row to row and plant to plant spacing (mean= 1.64), operating knapsack sprayer (mean=1.41), selecting suitable fertile land for yam production (mean=1.07), performing mulching task (mean=1.03), performing sticking task (mean=1.02), and determining appropriate time of harvesting (mean=1.02) and were rated first to thirteen position respectively.

The difficulty of performing opportunity skill tasks

Opportunity tasks as presented in Table 25 shows that sourcing for fund to finance yam farming and processing activities (mean=3.13), packaging skills of yam produce and processed products (mean=2.34), value addition skills in processing yam tuber to different products (mean=2.24), identifying, investigating and evaluating opportunities (mean=1.79), and market and customer orientation task (mean=1.25) were rated first to fifth position respectively.

The difficulty of performing Management skill tasks

Management skills results of mean scores presented in Table 25 shows that assessing and managing farm risk (mean=3.78), planning, prioritising and organising yam farming task (mean= 2.74), precautionary practices against yam farming related hazards task (mean= 2.67), keeping basic records of farm income and expenses (mean=2.35), improving efficiency, cutting costs and increase productivity task (mean= 2.31), precautionary practices against yam farming related hazards (mean=2.19), managing/supervision skills of hired farm labours and their needs (mean=1.87) time management (mean=1.78), problem solving skills task (mean=1.28), and decision making, control and negotiation (mean=1.25) were rated first to the tenth position respectively.

The difficulty of performing Co-operation/networking skills tasks

The mean value of co-operation and networking skills as presented in Table 25 shows that identifying and cooperating with support government bodies was 3.60 and rated first position, networking and communication through electronic mailing address was 3.45 rated 2nd position, networking and communication through whatapp was 2.69 rated also 3rd position, networking and communication through team working skills was 2.62 rated 4th position, identifying and cooperating with support NGOs was 2.53 rated 5th position, identifying and cooperating with farmers' cooperative group was 2.28 rated 6th position, networking and communication through facebook was 2.24 rated 7th position, motivation and leadership of farmers' group skills was 2.13 rate 8th position, of identifying and cooperating with customers was 2.12 rated 9th position, networking and communication through 2go was 2.08 rated 10th position, training and developing others was 2.00 and was rated also 11th position, identifying and cooperating with agricultural extension agents was 1.86 rated 12th position, and networking and communication through Voice call / SMS was 1.25 rated 13th position.

The difficulty of performing Customer/marketing skills tasks

The mean score of responses on the difficulty of customer/marketing skills tasks were persuasive communication and negotiation skills was 2.47 rated first position, fixing price of yam tubers / processed product was 2.19 rated 2nd position, identifying and understanding the demand of the customer was 2.12 rated 3rd position, satisfying the need of buyers was 2.08 rated also 4th position, transporting yam produce/products securely to the market was 1.88 rated 5th position, avoiding failing to meet customer's specification was 1.82 rated 6th position, and finding distribution channels was 1.63 rated 7th position.

4.6.1.4 Capacity Building Needs (CBN) Analysis of Yam Farmers

This section presented the collection of mean scores from Tables 23, 24 and 25 above. The mean scores of each corresponding skills were summed. That is the mean scores of performance frequency, importance and difficulty in handling entrepreneurial skills. Also, threshold score for different categories of skills was then calculated to decide capacity building needs of respondents on yam entrepreneurial activities. A particular task is agreed to need a capacity building of skills if the total mean value is equal or greater than the threshold value. McElwee (2008) stated that growing entrepreneurial competency in the agricultural sector means bringing the farmer from the “farmer as farmer” position to the “farmer as entrepreneur” level through an extension educational process.

Table 26: Entrepreneurial Capacity Building Needs of Yam Entrepreneur Farmers

Yam Entrepreneurial Tasks	Mean of Frequency of Performance	Mean of importance	Mean of difficulty	Total Mean Score	Remark If the capacity building is Needed
Yam cultivation skills					
Improved land preparation	2.23	2.60	1.74	6.57	Not needed
Selecting suitable fertile land for yam production	3.36	2.50	1.07	6.93	Not needed
Performing improved yam miniset technology	1.56	3.17	2.91	7.64	Needed
Mulching	2.79	2.51	1.03	6.33	Not needed
Sticking	2.99	2.38	1.02	6.39	Not needed
Sourcing (rent/purchase) use of necessary farm tools/machinery	2.13	2.43	3.15	7.71	Needed
Operating farm machinery	1.29	3.15	3.79	8.23	Needed
Dose and method of application of agro-chemicals and fertilizer.	1.45	1.78	1.93	5.16	Not needed

Recommended row to row and planting distant	3.23	2.08	1.64	6.95	Not needed
Operating Knapsack sprayer	3.20	1.73	1.41	6.34	Not needed
Appropriate time of harvesting	3.12	1.58	1.02	5.72	Not needed
Processing yam tubers into different products and value addition	2.94	2.72	2.78	8.44	Needed
Methods of storing yam tubers and processed products	2.86	2.31	2.52	7.69	Needed
<i>Threshold value</i>				7.0	
Opportunity skills					
Identifying, investigating and evaluating opportunities	1.68	1.68	2.34	5.70	Needed
Sourcing for fund to finance yam farming and processing activities	1.27	2.62	3.13	7.02	Needed
Value addition skills in processing yam tuber to different products	1.77	1.73	2.24	5.74	Needed
Packaging skills of yam produce and processed products	1.66	1.98	1.79	5.43	Not needed
	1.68	1.68	2.34	5.70	
Market and customer orientation	2.31	1.87	1.25	5.43	Not needed
<i>Threshold value</i>				5.7	
Management skills					
Keeping basic records of farm income and expenses	1.53	2.31	2.35	6.19	Needed
Time management skills	1.58	1.92	1.78	5.28	Not needed
Managing/supervision skills of hired farm labours and their needs	2.05	1.42	1.87	5.34	Not needed
Planning, prioritising and organising yam enterprise tasks	2.61	2.92	2.74	8.27	Needed
Assessing and managing farm risk	1.73	1.86	3.78	7.37	Needed
Improving efficiency, cutting costs and increase productivity	1.25	1.46	2.31	5.02	Not needed
Problem solving skills	2.00	2.29	1.28	5.57	Not needed

Skills in decision making, control and negotiation	2.44	2.44	1.25	6.13	Not needed
Precautionary practices against yam enterprise related hazards	2.96	2.52	2.19	7.67	Needed
Skills for ensuring full security of yam enterprises	2.58	2.64	2.67	7.89	Needed
<i>Threshold value</i>				6.50	
Co-operation / networking skills					
Identifying and cooperating with other players such as;					
a. Agric. extension agents	3.20	3.06	1.86	8.12	Needed
b. Customers	2.94	2.87	2.12	7.93	Needed
c. farmers' association group	2.72	2.90	2.28	7.90	Needed
d. support NGOs	1.08	1.78	2.53	5.39	Not needed
e. support government bodies	1.05	1.48	3.60	6.13	Needed
Effective networking and communication with other players through electronic networking tools;					
a. Facebook	2.08	2.18	2.24	4.26	Not needed
b. Electronic mailing address	1.06	1.22	3.46	2.28	Not needed
c. Whatsapp	1.81	1.87	2.70	3.68	Not needed
d. 2go	1.90	1.82	2.08	5.80	Needed
e. Voice call / SMS	3.08	2.35	1.25	6.68	Needed
Team working skills	1.44	2.38	2.62	6.44	Needed
Training and developing others	1.32	1.31	2.00	4.63	Not needed
Motivation and Leadership of farmers' group skills	2.17	2.02	2.13	6.32	Needed
<i>Threshold value</i>				5.80	
Customer/marketing skills					
Skills for transporting yams produce/products securely to the	2.09	1.98	1.88	5.95	Not needed

market

Skills of identifying and understanding the demand of the customer	2.49	3.01	2.12	7.62	Needed
Skills of finding distribution channels	1.88	1.76	1.63	5.27	Not needed
Avoiding failing to meet customer's specification	1.99	1.93	1.82	5.74	Not needed
Persuasive communication and negotiation skills	3.05	3.07	2.47	8.59	Needed
Fix price of tubers / processed product	2.72	2.47	2.19	7.38	Needed
Becoming more effective in satisfying the need of buyers.	2.43	2.28	2.08	6.79	Needed

Threshold value

6.80

Source: Field survey (2016)

Task analysis of entrepreneurial skills for yam cultivation tasks presented in Table 26 shows that tasks such as improved yam miniset technology, mulching, sourcing (rent/purchase) use of necessary farm tools/machinery, operating farm machinery, processing yam tubers into different products, and methods of storing yam tubers and processed products were identified as areas where training for capacity building was needed among respondents.

As illustrated in Table 26, the entrepreneurial skill to recognise yam business opportunities in sourcing for the fund to finance yam farming and processing activities, value addition skills for processing yam tuber into different products, and packaging skills of yam produce and processed products were identified as areas where training for capacity building was needed among respondents.

The task analysis of entrepreneurial skills to manage yam of entrepreneurial enterprises as presented in Table 26 identified record keeping, planning, prioritising and organising yam enterprise tasks, assessing and managing yam enterprise risks, precautionary practices against

yam enterprise related hazards, and skills for ensuring full security of yam enterprises as areas where training for capacity building were needed among respondents. Similar findings was reported in a study by Okeme, Alawa and Akwagiobe (2014) who found that making necessary arrangement in save guiding the farm and keeping of adequate records were entrepreneurial skills required for economic success in cocoa production.

Table 26 further indicated entrepreneurial skills for cooperating and networking with colleagues and other stakeholders in the enterprise to include agricultural extension agents, customers, farmers' association group, support government bodies, 2go, voice call/SMS, team working skills, and motivation and leadership of farmers' group skills as areas where training for capacity building was needed among respondents. McElwee, (2008) had emphases that the competency and the ability to use social networks are essential capacities upon which farmers can build competitive advantages to help them succeed in free markets and eventually achieve sustainable development. McElwee further noted that, in the process of developing such competency, farmers must become less dependent on government subsidies, respond to the growing demand for quality and respect the natural environment.

As presented in Table 26, entrepreneurial skills to collaborate with customers and marketing of yam produce such as identifying and understanding/knowing the demand of the customers, persuasive communication and negotiation skills, fixing price of tubers/processed products, and becoming more effective in satisfying the need of buyers were identified as areas where training for capacity building were needed among respondents. McElwee (2008) also noted that market orientation assist the entrepreneur recognize business opportunities and plan strategically. These skills are vital requirements for farmers to compete successfully.

4.6.2 Skill/Knowledge Gap Analysis of Yam Entrepreneurial Skills

The skill-gap analysis determined how skilled or proficient individual yam farmers were on entrepreneurial tasks, and how much individuals differ from the desired performance. The importance of this analysis according to FAO (1992) is to determine if gap/training needs identified in Table 2 can be decreased or removed through training or whether training is the most appropriate method.

To do this, a priority list of the tasks identified for capacity building according to the total score in the task analysis was made (Table 26). Then, the tasks that were identified on each task analysis worksheet were listed on the skill-gap analysis worksheet (FAO, 1992) to rate each task of current proficiency on a scale of 1 to 5. Identifying the tasks that appear to have low proficiency is required to identify the gap between what is desired and the current situation. After this, a review was done to ponder whether the gap can be decreased or removed through training or whether training is the most appropriate method.

In academic discussions, the question of entrepreneurial skills is related to the debate on whether entrepreneurship can be conceived as a nature of the entrepreneurial process and be sceptical towards the idea of training it (Swedberg, 2000).

Table 27: Proficiency level of skill in performing yam entrepreneurial tasks

Yam Entrepreneurial Tasks		Level of proficiency (Mean [level])	Is proficiency a problem?	Can problem be solved by training?
A. Yam cultivation task				
1.	Performing improved yam miniset technology	2.19 [1 (2) 3 4 5]	Yes	[Yes]
2.	Sourcing (rent/purchase) use of necessary farm tools/machinery	1.85 [1 (2) 3 4 5]	Yes	[Yes]
3.	Operating farm machinery	1.21 [1 (2) 3 4 5]	Yes	[Yes]
4.	Processing yam tubers into different products	2.28 [1 (2) 3 4 5]	Yes	[Yes]
5.	Methods of storing yam tubers and processed products	2.63 [1 2 (3) 4 5]	Yes	[No]
B. Opportunity skills				
1.	Sourcing for fund to finance yam farming and processing activities	1.75 [1 (2) 3 4 5]	Yes	[Yes]
2.	Value addition skills in processing yam tuber to different products	2.41 [1 (2) 3 4 5]	Yes	[Yes]
3.	Identifying, investigating and evaluating opportunities	2.66 [1 2 (3) 4 5]	Yes	[Yes]
C. Management skills				
1.	Keeping basic records of farm income and expenses	2.44 [1 (2) 3 4 5]	Yes	[Yes]
2.	Planning, prioritising and organising yam farming tasks	2.26 [1 (2) 3 4 5]	Yes	[Yes]
3.	Assessing and managing yam enterprise risks	1.22 [(1) 2 3 4 5]	Yes	[Yes]
4.	Precautionary practices against yam enterprise related hazards	2.34 [1 (2) 3 4 5]	Yes	[Yes]
5.	Skills for ensuring full security of yam enterprises	2.59 [1 2 (3) 4 5]	Yes	[No]
D. Co-operation / networking skills				
1.	Identifying and cooperating with other players such as;			

	a. Agric. extension agents	3.14 [1 2 (3) 4 5]	Yes	[No]
	b. Customers	2.88 [1 2 (3) 4 5]	Yes	[No]
	c. farmers' cooperative group	2.72 [1 2 (3) 4 5]	Yes	[No]
	d. support government bodies	1.54 [1 (2) 3 4 5]	Yes	[Yes]
2.	Effective networking and communication with other players through electronic networking tools;			
	a. 2go	2.92 [1 2 (3) 4 5]	Yes	[No]
	b. Voice call / SMS	3.75 [1 2 3 (4) 5]	Yes	[No]
3.	Team working skills	2.38 [1 (2) 3 4 5]	Yes	[Yes]
4.	Motivation and Leadership of farmers' group skills	2.87 [1 2 (3) 4 5]	Yes	[No]
E.	Customer/marketing skills			
1.	Skills of identifying and understanding the demand of the customer	2.88 [1 2 (3) 4 5]	Yes	[No]
2.	Persuasive communication and negotiation skills	2.36 [1 (2) 3 4 5]	Yes	[Yes]
3.	Fix price of tubers / processed product	2.81 [1 2 (3) 4 5]	Yes	[No]
4.	Becoming more effective in satisfying the need of buyers.	2.92 [1 2 (3) 4 5]	Yes	[No]

Source: Field survey (2016)

As illustrated in table 27, the skill gap analysis after a review of tasks indicated the entrepreneurial tasks identified for capacity building needs of skills that can be addressed through extension training were performing improved yam miniset technology. Also, included are sourcing (rent/purchase) use of necessary farm tools/machinery, operating farm machinery, processing yam tubers into different products, and storing yam tubers and processed products tasks, sourcing for fund to finance yam farming and processing activities, value addition skills in processing yam tuber to different products, packaging skills of yam produce and processed products. Further skills are keeping basic records of farm income and expenses, planning, prioritising and organising yam farming tasks, assessing and managing

yam enterprise risks, precautionary practices against yam enterprise related hazards, identifying and cooperating with government bodies, team working skills, and persuasive communication and negotiation skills. Training and improving competency of farmers in social networking were noted by (Mesquita and Lazzarini, 2008; Svetlicic, Jaklic and Burger, 2007) as useful for agricultural entrepreneurs as they can help supplant weak institutions and attain the collective efficiency necessary to overcome infrastructure constraints in order to speed up market entries and eventually achieve sustainable development. This study agrees with Katz (1991) and FAO (1992) who opined that, in academic discussions, the question of entrepreneurial skills is related to the debate on whether entrepreneurship can be conceived as something trainable or not. For example, this had suggested that, most likely, there are some skills which can be trained and some that cannot. But Stevenson and Jarillo cited in Pyysiäinen *et al.* (2006) had both criticize social scientific research for being too theoretical, focusing on causes and results of entrepreneurial activity and forgetting the questions concerning the entrepreneurial process itself. According to their view, more knowledge is needed about the `how` of entrepreneurial behaviour. Generating this kind of knowledge makes it possible to train entrepreneurship they argue.

Yam entrepreneurial tasks where training for capacity building of skills were not recommended among respondents were methods of storing yam tubers and processed products, skills for ensuring full security of yam enterprises, identifying and cooperating with agricultural extension agents, customers and farmers' cooperative group, effective networking and communication through 2go, voice call & SMS, motivation and leadership of farmers' group skills, skills of identifying and understanding the demand of the customer, fix price of tubers / processed product, and becoming more effective in satisfying the need of buyers.

4.7 Constraint to Sustainable Entrepreneurial Livelihood Activities of Yam Farmers

The result in Table 28 illustrated the opinion of respondents on how the listed perceived constraining factors had affected the sustainability of yam entrepreneurial activities development in the study area. Factors were grouped into shocks, adverse trends, and seasonality based on the vulnerability factors inhibiting the sustainability of a livelihood as suggested by DFID (1999).

Table 28: Constraining Vulnerability Factors Limiting Sustainable Yam Entrepreneurial Livelihood Activities of Respondents

Constraining Vulnerability factors	Mean score (Std. Dev.)	Mean rating	Remark
Shocks			
Unfavourable weather variability	-0.49 (1.543)	22	Not a constraints
Postharvest/storage pest damage	0.99 (1.350)	5	Constraint
Frequent illness/bad health status	1.13 (.928)	3	Constraint
Flood	0.02 (1.161)	14	Constraint
Drought	-0.52 (1.474)	23	Not a constraints
Pest and diseases infestation	0.77 (.932)	9	Constraint
Adverse Trends			
Lack of government policies that promotes agri-prenueship among yam farmers	-0.99 (1.446)	28	Not a constraints
Frequent change of government and their agricultural revolution policies	-0.42 (1.023)	19	Not a constraints
Inadequate financial credits to promote commercial farming in the rural areas	1.06 (1.138)	4	Constraint
Gender discrimination in accessing inputs	-0.94 (1.320)	26	Not a constraints
Crime and theft	0.18 (1.22)	12	Constraint
Destruction of yam farm by cattle	1.45 (.871)	1	Constraint
Communal/family conflict on farm land	0.84 (1.062)	8	Constraint

Unstable price and poor pricing of yam produce	1.14 (1.174)	2	Constraint
Lack of access to subsidized input	-0.17 (1.369)	15	Not a constraints
Inadequate extension education on agricultural entrepreneurship skills among yam farmers	0.98 (.673)	6	Constraint
Bad road network/structure	0.18 (1.442)	13	Constraint
Poor access to market information	-0.39 (1.511)	18	Not a constraints
Long distant to market	-0.47 (1.511)	21	Not a constraints
Poor access to yam cultivation equipment	-0.62 (1.383)	24	Not a constraints
Poor access to yam processing equipment	0.62 (1.378)	10	Constraint
Seasonality (seasonal stress)			
Irregular payment from buyers	0.85 (1.330)	7	Constraint
Scarcity of appropriately skilled farm labour	-0.98 (1.336)	27	Not a constraints
High cost of hired labour	0.49 (1.193)	11	Constraint
Poor electricity supply	-0.89 (1.567)	25	Not a constraints
Poor access to Agric. extension agents and other yam farmers	-0.46 (1.420)	20	Not a constraints
Identifying input suppliers	-0.27 (.968)	17	Not a constraints

Source: Field survey (2016)

Note: 1 to 28 implies highest to the lowest rank

Destruction of yam farm by cattle and herdsmen (mean=1.45) was rated first and considered as a constraining factor to the sustainable development of yam entrepreneurial activities in the study area in Table 28. The previous study by Adelakun, Aderogbanbga and Akinbile (2015) had reported that majority of farmers in southwest Nigeria suffer economic losses from farmer-pastoralist conflicts.

Unstable price and poor pricing of yam produce (mean=1.14) was the second position and considered as a constraining factor to the sustainable development of yam entrepreneurial

activities in the study area in Table 28. Similar constraints had been reported by Ebewore *et al.* (2013) indicating price of yam as significant problem. Report by Anozie *et al.* (2014) also indicated poor market for yam products as major constraints to yam production in Imo state of Nigeria. Zaknayiba and Tanko (2013) study in Kogi state also found poor pricing of yam produce as a leading problem to yam farmers.

Frequent illness and bad health status among yam farmers (mean=1.13) was considered as a hindering factor to sustainable development of yam entrepreneurial activities in the study area and rated third position in Table 28. World Health Organization (WHO, 2007) had similarly reported that farmers in rural communities have poor health status. This findings is agrees with Hawks and Ruel (2006) noted that in agricultural communities, poor health of farmers is a major challenge for it is capable to reduce their income, efficiency, and productivity.

Table 28 further shows that inadequate financial credits to promote commercial farming among yam farmers entrepreneur (mean=1.06) was rated fourth position as one of the limiting factors to sustainable development of yam entrepreneurial activities in the study area. Similar findings had been reported by Izekor and Olumese (2010) that lack of capital was the major constraint to yam agricultural activities in Edo State. Gwary *et al.* (2011) also noted that lack of capital was the major constraint to entrepreneurial agricultural activities in Michika Local Government Area of Adamawa State. Ajijola *et al.* (2014) further found that inadequate finance was the major problem affecting yam production in Oke-Ogun, Oyo state. Duniya (2010) also justified inadequate credit facilities as a constraint to entrepreneurial development and a leading cause for market surplus which prevents the prospective entrepreneurs in agriculture from having enough cash to care for basic needs of life. This finding further support the opinion of Esiobu, Onubuogu and Ibe (2015) that formal financial intermediaries are not helping issues as most do refuse farmers from sourcing loan in their

institutions due to lack of acceptable collateral, hence, branding the farmers as non-credit worthy.

Postharvest/storage pest damage (mean=0.99) was rated fifth position and considered as a constraining factor to sustainable development of yam entrepreneurial activities in the study area as shown in Table 28. This study is similar with Zaknayiba and Tanko (2013) study in Kogi state which found the incidence of pest and diseases as a leading problem to yam farmers.

Inadequate extension education of agricultural entrepreneurship skills (mean=0.98) was rated sixth position and considered as a constraining factor to sustainable development of yam entrepreneurial activities in the study area as indicated in Table 28. A similar finding has been reported by Esiobu, Onubuogu and Ibe (2015) that most of farmers in Imo State complained of poor access to entrepreneurship information. This finding further support the earlier report by Onyebinama and Onyebinama (2010) that present extension education practices in Nigeria does not cater for the improvement of entrepreneurial (technical and managerial) capability of farmers but solely to diffusion innovative information and improved farm technologies to farmers. Lack of information about the schemes/innovation as a factor according to Wilson and Hart (2000) can often constrain the ability of a farmer to adopt a new practice.

The result in Table 28 also shows that irregular payment by buyers (mean=0.85), inadequate farmland (mean= 0.84), pest and diseases infestation (mean= 0.77), poor access to yam processing equipment (means=0.62), high cost of hired labour (mean= 0.49), crime and theft (maen=0.18), bad road network/structure (mean=0.18) and flood (mean=0.02) were considered as hindering factors to sustainable development of yam entrepreneurial activities in the study area. This finding corroborates Forsman (2003) that non availability machinery

and equipment can be an impediment to yam farming enterprise. Finding also support Oluwatosin and Shittu (2014) study that high cost of labour constitutes major challenges to yam production in Nigeria. Similar finding was reported in Ajijola *et al.* (2014) study in Oke-Ogun Oyo State that found bad road as major factor affecting yam production.

Furthermore, factors such as unfavourable weather variability (mean= -0.49), identifying input suppliers (mean= -0.27), access to agric. extension agents and other yam farmers (mean= -0.46), poor electricity supply (mean= -0.89), scarcity of appropriately skilled farm (mean= -0.98), access to yam cultivation equipment (mean= -0.62), long distant to market (mean= -0.47), access to market information (mean= -0.39), access to subsidized input (mean= -0.17), gender discrimination in accessing inputs (mean= -0.94), frequent change of government and their agricultural revolution policies (mean= -0.42), lack of government policies that promotes agri-prenueship among yam farmers (mean= -0.99) and drought (mean= -0.52) were considered as no factors hindering the sustainable development of yam entrepreneurial activities in the study area. Finding of this study is not in line with Oluwatosin and Shittu (2014) study that insufficient farm input constitutes major challenges to yam production in Nigeria. Finding agrees with Dauda (2007) and does not corroborate Weissuleder and Heckeleei (2008) and Emerole *et al.* (2014) with the report that market is a major constraint to growth in an agribusiness investment. This may be attributed to closeness of market to farmers in farming communities in the study area. The result supports Gebremedhin and Jaleta (2010), and Gani and Adeoti (2011) that decrease in market distance increases market participation. Finding is in contrary to report by Esiobu, Onubuogu and Ibe, (2015) who found that long distance between farms and market as a major barrier to farmer entrepreneurs in Imo State. Finding also agrees with Tsado *et al.* (2010) study in Kogi State and Zaknayiba and Tanko (2013) study in Nasarawa State that labour supply was not a constraint among yam farmers. The finding implies that agricultural extension services are

going on smoothly in the study area. Finding contradict the finding by Anozie *et al.* (2014) study which indicated poor agricultural extension visit as one the major constraints facing yam farmers in Imo State, Nigeria.

4.8 Results of Hypotheses Tested

The following null hypotheses were tested;

4.8.1 Hypothesis One: There is no significant relationship between yam entrepreneurial activities of respondents and sustainable access to livelihood assets.

4.8.1.1 Impact relationship between yam entrepreneurial activities on sustainable access to financial assets of respondents.

Table 29: Ordered Probit Regression Estimation of Financial Assets

Activities	Coefficient	Std. Error	Z -Statistic	P> z
Participation in seasonal activities of yam cultivation	.7045244	.1282142	5.49***	0.000
Participation in yam marketing	.2621636	.0914446	2.87***	0.004
Participation in yam transporting	-.1101356	.1047233	-1.05	0.293
Participation in yam processing	.0116273	.0402842	0.29	0.773
Participation in non-yam enterprises	-1.615023	.5798491	-2.79***	0.005
Experience as yam entrepreneur	.1285437	.0847797	1.52*	0.129
Land tenure	-.0495887	.0434934	-1.14	0.254
Land Area cultivated	.0680868	.0344566	1.98**	0.048
Membership of farmers group	.2612842	.1189669	2.20**	0.028
Log likelihood = 564.09658				
LR chi2(18) = 35.11				
Prob > chi2 = 0.0092				
Pseudo R2 = 0.0302				

***, ** and * denotes significance at 1%, 5% and 10% respectively

The result of the hypothesis of the impact of yam entrepreneurial activities on sustainable access to financial assets of respondents as presented in Table 29 shows that characteristics of yam entrepreneurial activities of respondents such as participation in seasonal activities of yam cultivation ($z = 5.49$, $p < 0.01$), participation in yam marketing ($z = 2.87$, $p < 0.00$),

experience as yam entrepreneur ($z = 1.52$, $p < 0.1$), land area cultivated ($z = 1.98$, $p < 0.05$), and membership of farmers group ($z = 2.20$, $p < 0.05$) had significant positive contribution to access to financial assets of respondents. Here, the null hypothesis is rejected, and the alternative is acceptable. This finding implies that yam entrepreneurial activities will contribute more to financial assets when there is more involvement in yam cultivation, marketing, years of experience, land area cultivated and membership of farmers group among farmers in Ekiti State, Nigeria.

Table 29 further shows that participation in non-yam enterprises ($z = -2.79$, $p \leq 0.01$) had an inverse significant relationship in contributing to yam entrepreneurial activities to financial assets of respondents. The null hypothesis is also rejected and the alternative is acceptable. This finding implies that increase in the activities of non-yam entrepreneurial activities will decrease yam entrepreneurial activities' contribution to sustainable livelihood assets of yam farmers in the study area.

4.8.1.2 Impact relationship of yam entrepreneurial activities on sustainable access to physical assets of respondents

Table 30: Ordered probit regression estimation of physical assets

Physical Assets / Variables	Coefficient	Std. Error	Z -Statistic	$P > z $
Participation in seasonal of yam cultivation activities	.0095849	.0043182	2.22**	0.026
Participation in yam transporting	-.0433447	.0489398	-0.89	0.376
Participation in yam processing	.0792921	.0852108	0.93	0.352
Participation in yam marketing	.0935864	.0458808	2.04**	0.041
Participation in non-yam enterprises	1.629943	.6773936	2.41**	0.016
Experience as yam entrepreneur	.1341237	.1000186	1.34*	0.120
Land tenure	-.0641931	.052337	-1.23	0.220
Land Area cultivated	.0856555	.0422299	2.03**	0.043

Membership of cooperative group	.120874	.1410178	0.86	0.391
Log likelihood = -332.86211				
LR chi2(18)	=	95.85		
Prob > chi2	=	0.0000		
Pseudo R2	=	0.1259		

***, ** and * denotes significance at 1%, 5% and 10% respectively

The result of hypothesis between yam entrepreneurial activities and sustainable access to physical assets of respondents as presented in Table 30 indicated that characteristics of yam entrepreneurial activities of respondents such as-as participation in activities of yam cultivation ($z= 2.22$; $p<0.05$), marketing ($z=2.04$; $p<0.05$), non-yam enterprises ($z= 2.41$; $p<0.05$), experience as yam entrepreneur ($z=1.34$; $p<0.00$) and land area cultivated ($z=2.03$, $p<0.05$) had significant positive contribution to physical assets of respondents. Here, the null hypothesis is rejected, and the alternative is accepted. This finding implies that yam entrepreneurial activities will contribute more to the accessibility of physical assets when there is more involvement in entrepreneurial activities of yam cultivation and marketing, years of experience as yam entrepreneur, and land area cultivated among yam farmers in Ekiti State, Nigeria.

4.8.1.3 Impact relationship between yam entrepreneurial activities on sustainable access to social assets of respondents.

Table 31: Ordered probit regression estimation of social assets

Social Assets / Variables	Coefficient	Std. Error	Z -Statistic	P> z
Participation in seasonal of yam cultivation activities	.2070398	.1124591	1.84*	0.066
Participation in yam transporting	.0911522	.043788	2.08**	0.037
Participation in yam processing	-.0575564	.0764121	-0.75	0.451
Participation in yam marketing	-.4225086	.3449427	-1.22	0.221

Participation in non-yam enterprises	-.0788089	.0470203	-1.68*	0.094
Experience as yam entrepreneur	-.0023463	.0038167	-0.61	0.539
Land tenure	.0616487	.0468534	1.32	0.188
Land Area cultivated	.0239023	.0371523	0.64	0.520
Membership of cooperative group	.7630195	.3336582	2.29**	0.022
Log likelihood = 430.36752				
LR chi2(18)	=	31.01		
Prob > chi ²	=	0.0287		
Pseudo R ²	=	0.0348		

***, ** and * denotes significance at 1%, 5% and 10% respectively.

The result of hypothesis between characteristics of yam entrepreneurial activities and sustainable access to social assets of respondents as presented in Table 31 indicated that characteristics of yam entrepreneurial activities of farmers such as involvement in activities of yam cultivation ($z = 1.84$; $p < 0.1$), transportation ($z = 2.08$; $p < 0.05$), and membership of farmers' group ($z = 2.29$; $p < 0.05$) were positively significant with the contribution of yam entrepreneurial activities to sustainable social assets of respondents. This finding implies that increase in involvement in activities of yam cultivation, yam transportation and membership of farmers' group will be an increase in the contribution of yam entrepreneurial activities to sustainable social livelihood assets of yam farmers in the study area.

4.8.1.4 Impact relationship of yam entrepreneurial activities on sustainable access to human assets of respondents

Table 32: Ordered probit regression estimation of human assets

Human Assets / Variables	Coefficient	Std. Error	Z -Statistic	P> z
Participation in seasonal of yam cultivation activities	.7630195	.3336582	2.29**	0.022
Participation in yam transporting	.0056354	.003559	1.58	0.113
Participation in yam	-.0504966	.0435136	-1.16	0.246

processing

Participation in yam marketing	.3952365	.2662748	1.48	0.138
Participation in non-yam enterprises	.1581187	.0893451	1.77*	0.077
Experience as yam entrepreneur	.1910199	.1049839	1.82*	0.069
Land tenure	.0080623	.0403272	0.20	0.842
Land Area cultivated	.0263333	.0345873	0.76	0.446
Membership of cooperative group	-.0678795	.1187133	-0.57	0.567
Log likelihood = - 558.77114				
LR chi2(18) = 40.58				
Prob > chi ² = 0.0017				
Pseudo R ² = 0.0350				

***, ** and * denotes significance at 1%, 5% and 10% respectively.

The result of hypothesis between characteristics of yam entrepreneurial activities and its impact to sustainable human assets of respondents as presented in Table 32 indicated that characteristics of yam entrepreneurial activities of farmers such as involvement in activities of yam cultivation ($z = 2.29$; $p < 0.05$), participation in non-yam enterprises ($z = 1.76$; $p < 0.1$) and experience as yam entrepreneur ($z = 1.82$; $p < 0.1$) were positively significant with the contribution of yam entrepreneurial activities to sustainable human assets of respondents. This finding implies that increase in yam cultivation and non-yam enterprises activities, and years of experience as yam entrepreneur will increase in the contribution of yam entrepreneurial activities to sustainable social livelihood assets of yam farmers in the study area.

4.8.1.5 Impact relationship of yam entrepreneurial activities on sustainable access to natural assets of respondents

Table 33: Ordered probit regression estimation of natural assets

Natural Assets / Variables	Coefficient	Std. Error	Z -Statistic	P> z
Participation in seasonal of yam cultivation activities	.2230185	.1121706	1.99**	0.047
Participation in yam transporting	-.0176552	.0430391	-0.41	0.682
Participation in yam processing	.0042246	.2864893	0.01	0.988
Participation in yam marketing	.2555602	.1484386	1.72*	0.085
Participation in non-yam enterprises	.0774358	.6220364	0.12	0.901
Experience as yam entrepreneur	.0099643	.0038333	2.60***	0.009
Land tenure	.0156849	.0467113	0.34	0.737
Land Area cultivated	.0139734	.0369174	0.38	0.705
Membership of cooperative group	-.0100863	.1280064	-0.08	0.937
Log likelihood = - 446.95034				
LR chi2(18) = 28.38				
Prob > chi ² = 0.0565				
Pseudo R ² = 0.0308				

***, ** and * denotes significance at 1%, 5% and 10% respectively.

The result of hypothesis between characteristics of yam entrepreneurial activities and its impact to sustainable natural capital of respondents as presented in Table 33 indicated that characteristics of yam entrepreneurial activities of farmers such as involvement in activities of yam cultivation ($z= 1.99$; $p=0.047$), yam marketing ($z= 1.77$; $p=0.077$) and experience as yam entrepreneur ($z= 2.60$; $p=0.009$) were positively significant to the contribution of yam entrepreneurial activities to sustainable natural assets of respondents. This finding implies

that increase in involvement in yam cultivation and marketing activities, years of experience as yam entrepreneur will increase the contribution of yam entrepreneurial activities to sustainable social livelihood assets of natural assets of yam farmers in the study area.

4.8.2 Hypothesis two: There is no significant relationship between selected socioeconomic characteristics of respondents and capacity building needs.

Table 34: Result of regression analysis to identify socioeconomic characteristics determinants of capacity building needs on yam entrepreneurial skills of respondents

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	2.269	.042		54.595	.000
Gender	-.003	.013	-.011	-.202	.840
Age	-.001***	.000	-.172	-3.665	.000
Marital status	-.011	.008	-.060	-1.429	.153
Educational status	.012**	.005	.124	2.583	.010
Household size	.001	.002	.030	.683	.495
Cosmopolitaness	.015***	.003	.223	4.547	.000
Awareness of agri-preneurship	.012	.009	.052	1.291	.197
Experience as yam entrepreneur	-.001***	.000	-.151	-3.455	.001
Land tenure	.002	.004	.023	.585	.559
Land area cultivated	-.001	.003	-.008	-.192	.848

Dependent Variable: Capacity building needs on yam entrepreneurial skills

R = .364

R Square = .133 = **13.3%**

Adjusted R Square = .116 = **11.6%**

Std. Error of the Estimate = .10443

F-Statistics = 7.906, P < 0.01

Sum of square residual = 6.194

*** and ** denotes significance at 1%, and 5% respectively

The multiple regression model with four predictors was observed to produce low $R^2 = .133$ and adjusted $R^2 = .116$ values with F statistics = 7.906, but the significance of the F values at

$P < 0.01$ indicates the significance of the model and hence its ability to make valid predictions on the effect of the variables. Abelson (1995) had similarly reported that the proportion of variance shared between a dichotomous and a continuous variable of respondents can be unpredictably small in social science-based research (that is $R < 0.001$), even when intuition would dictate a very large R^2 . Abelson further stated that even such a tiny R^2 could be meaningful, as long as the effect under investigation can make itself felt.

The result of the multiple regression analysis models in Table 34 showed that educational status ($t = 2.583$; $p = 0.010$) and cosmopolitaness ($t = 4.547$; $p = 0.000$) were positive determinant factors for respondents' need and willingness to participate in capacity building training of yam entrepreneurial skills. Here, the null hypothesis is rejected, and the alternative is accepted. The implication is that highly educated farmer entrepreneurs who are frequently visiting major towns will be willing and always see the need to be trained in yam capacity building skills. Similar importance of education had been cited in literature. Butt, Hassan, Sahi, Atiq, Jabbar, Ahmad, Luqman and Shafique (2011) in a study argued that entrepreneur farmers who attained formal school education might develop and improve knowledge, wisdom and other desirable qualities of the respective individual. On the one hand, lesser educated entrepreneur farmers might struggle with the entrepreneurial environment. Also, Burger O'Neill and Mahadea (2005) reported that "education is an important contributor to the development of an entrepreneurial culture" of a nation and that entrepreneurial culture and related skills are products of some attained levels of formal school education.

Furthermore, only age ($t = -3.665$; $p = 0.000$) and experience as yam entrepreneur ($t = -3.455$; $p = 0.001$) were inversely related to capacity building needs on yam entrepreneurial skills of respondents. This finding implies that increase in age and experience in entrepreneurial activities will decrease the need and willingness of respondents to participate in the capacity building of yam entrepreneurial skills. This study further suggests that older farmers are

likely not to accept entrepreneurial innovative skills for their yam enterprise activities. A similar finding by Carter (2003); McElwee and Bosworth (2010) reported that younger and better-trained farm owners show more diversified business activities, are more likely to have a positive attitude towards new market opportunities, a good appreciation of and sensitivity to customer needs, and are more willing to engage in new ventures.

4.8.3 Hypothesis three: There is no significant relationship between selected socioeconomic characteristics of respondents and attitude towards yam entrepreneurial activities.

Table 35: Result of regression analysis to identify socioeconomic characteristics determinants of attitude towards yam entrepreneurial activities among respondents

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	(B)	Std. Error	Beta		
(Constant)	.446	.090		4.981	.000
Gender	-.070***	.025	-.144	-2.760	.006
Age	.000	.001	.017	.343	.731
Marital status	.027*	.016	.075	1.723	.085
Educational status	.011	.009	.059	1.206	.228
Household size	.000	.003	-.013	-.300	.764
Cosmopolitaness	-.009	.006	-.069	-1.490	.137
Awareness of agri-preneurship	.042**	.020	.103	2.114	.035
Experience as yam entrepreneur	.002***	.001	.153	3.570	.000
Land tenure	.013*	.008	.067	1.660	.097
Land area cultivated	.017	.048	.015	.356	.722

Dependent Variable: Attitude towards yam entrepreneurial activities

R = .681^a

R Square = .479 = **47.9%**

Adjusted R Square = .461

Std. Error of the Estimate = .20999

F-Statistics = 4.419

Sum of square residual = 25.046

***, ** and * denotes significance at 0.01%, 0.05% and 0.10% respectively

Regression analysis results that identified how socioeconomic characteristics determine attitude of farmers towards yam entrepreneurial activities is presented in Table 36. The table showed that socioeconomic characteristics of respondents such as marital status ($t=1.723$; $p=0.085$), awareness of agri-preneurship ($t= 2.114$; $p=0.035$), experience as yam entrepreneur ($t= 3.570$; $p=0.000$) and land tenure ($t= 1.660$; $p=0.097$) were determinants factors for positive attitude towards yam entrepreneurial activities among respondents. Here, the null hypothesis is rejected and the alternative is accepted. The implication is that yam farmers' marital status, level of awareness and higher years of experience of yam entrepreneurial skills activities would have favourable interests, values, norms, problem awareness and self-perception towards yam entrepreneurial activities in the study area (Siebert *et al.*, 2006). This finding is in line with Raman *et al.* (2014) reported that acceptance of mediated change to entrepreneurs would improve farmers knowledge, attitude and skill.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of findings, the conclusion of the study as well as recommendations made from the study. This section also concludes with the recommendations for further studies.

5.1 Summary

5.1 Summary

5.1.1 Socio-Economic Characteristics of Respondents

- The mean age of respondents was 55.0 years.
- The majority (81.2%) of the respondents were married.
- The majority (72.8%) of the respondents were male
- Majority of the respondents had formal education (primary = 34.1%, secondary = 29.1% and tertiary education = 4.3%)
- The mean household size of respondents was 6 persons.
- About 41.2% rarely visit or go out of their residential area.
- The majority (57.9%) were not aware of the agricultural entrepreneurship skills.
- The average year of experience was 30years.
- The majority (61.9%) acquired their land for yam entrepreneurial activities through inheritance.
- The average yam farm size of was 0.96 hectare.
- The gross margin (profit) of farmers was calculated to be ₦ 3,738,650 per season
- Net income per tuber was calculated to be ₦ 389

5.1.2 Characteristics of Entrepreneurial Activities of Respondents

- The majority (83.6%) established their farms
- The majority (66.2%) were a non-member of any crop related enterprise association group
- Main sources of initial capital were through personal savings (69.7%)
- The majority (70.0%) sell their yam produce to wholesalers.
- The average number of workers was 3 persons.
- The majority (74.3%) used both family and hired labour type
- The average working hours per day was 5 hours.
- The main reason for involvement was partly for the market and partly for home consumption (47.7%).
- All (100%) of the respondents were interested and planned to expand production.
- The majority (75.5%) had access to yam-based entrepreneurial business training/seminar
- The majority (60.0%) with access to training further indicated they attended up to 3 seminars.
- General agro-enterprise was mostly indicated as training subject (57.4%).
- The major sources of information among respondents were agricultural extension agents (86.2%), radio (83.3%), fellow farmers (79.5%) and television (61.2%).

5.1.3 Attitude of Respondents towards Yam Entrepreneurial Activities

- **Positive attitude** was found in respondents response towards the following statement:
i believe that agri-entrepreneurship extension education will empower my ability for yam entrepreneurial business, ability to try improved practices/services is needed to

become a successful agro-entrepreneur, it is possible to make a living out and escape poverty in yam entrepreneurial business, i would rather own a yam entrepreneurial business than earn a higher salary working for someone else, fulltime commitment and continuous extension training to yam enterprise is a key to success, i can pay any amount to seek for extension information to improve my yam entrepreneurial business, adding value to my yam tubers products/services will increase sales and income and an agro-entrepreneur should have commercial characteristics to determine success.

5.1.4 Access to Livelihood Capitals for Yam Entrepreneurial Activities

- **Free access** of livelihood capitals were indicated among majority of the respondents in income/saving able to meet basic needs (87.2%), yam enterprises input resources (84.1%), mobile phone (72.9%), television (65.0%), radio (72.1%), and cloth (100%), ability to networks and contact with other yam entrepreneurs, ngos and agricultural extension agents (86.7%), participation in social gathering (88.8%), satisfaction as yam entrepreneur (79.0%), decision making ability (70.2%), membership of crop related associations (76.0%), yam entrepreneurial activities knowledge (92.8%), safe drinking water (73.4%), water for yam irrigation farming (61.2%), fertile land for yam cultivation (87.1%), water for processing food (80.2%), favourable weather variability for yam entrepreneurial activities (77.8%).

Contributions of Yam Entrepreneurial Activities to Accessibility of Livelihood Assets

- **High level of contribution** of accessibility to livelihood assets were found to include: income/saving able to meet basic needs (mean=0.75), credit loan (mean=0.57), farm tools and machinery (mean=0.79), yam processing equipment (mean=0.56), yam enterprises input resources (mean=1.19), healthcare facilities (mean=0.62), mobile

phone (mean=0.75), cemented and zinc roof house (mean=1.05), radio (mean=0.64), clothes (mean=1.49), ability to networks and contact with other yam entrepreneurs, ngos and agricultural extension agents (mean=1.00), ability to finance traditional weeding and payment of bride price (mean=0.69), participation in social gathering (mean=0.76), satisfaction as yam farmers entrepreneur (mean=1.18), decision making ability (mean=0.75), formal educational attainment (mean=0.52), health condition (mean=0.70), yam entrepreneurial activities knowledge and skill competency (mean=1.11), safe drinking water (mean=0.77), and fertile land for yam cultivation (mean=1.01).

- **Moderate level of contribution** of accessibility to livelihood assets were found to include: Construction/maintenance of farm road (mean=0.26), House furniture (mean=0.36), Car/motorcycle/tricycle/bicycle (mean=0.07), Power generator/ NEPA (mean=0.03), Television (mean=0.26), Membership of crop related associations (mean=0.07), Water for crop/yam irrigation farming (mean=0.34), and Water for processing food (mean=0.02).
- **Low level of contribution** of accessibility to livelihood assets were found to include: Shop/land for sales of yam produce/processed products (mean= -0.14) and Favourable weather variability for yam entrepreneurial activities (mean= -0.93).

5.1.5 Knowledge of yam entrepreneurial skills

- Majority (62.6%) of the respondents had moderate knowledge level of overall yam entrepreneurial skills.

5.1.6 Capacity building needs on yam entrepreneurial skills

- Capacity building are needed for the following skills: performing improved yam miniset technology, sourcing (rent/purchase) use of necessary farm tools/machinery, operating farm machinery, processing yam tubers into different products and value addition, methods of storing yam tubers and processed products, sourcing for fund to finance yam farming and processing activities, value addition skills in processing yam tuber to different products, packaging skills of yam produce and processed products, keeping basic records of farm income and expenses, planning, prioritising and organising yam farming tasks, assessing and managing farm risk, precautionary practices against yam farming related hazards, skills for ensuring full security of yam enterprises, identifying and cooperating with other players (agricultural extension agents, customers, farmers' cooperative group, support government bodies), effective networking and communication with other players through electronic networking tools (2go and voice call/sms), team working skills, motivation and leadership of farmers' group skills, skills of identifying and understanding the demand of the customer, persuasive communication and negotiation skills, fix price of tubers / processed product, and becoming more effective in satisfying the need of buyers.

- Needed capacity building skills that can be solved through training are found to include: performing improved yam miniset technology, sourcing (rent/purchase) use of necessary farm tools/machinery, operating farm machinery, processing yam tubers into different products, sourcing for fund to finance yam farming and processing activities, value addition skills in processing yam tuber to different products, packaging skills of yam produce and processed products, keeping basic records of farm income and expenses, planning, prioritising and organising yam farming tasks, assessing and managing farm risk, precautionary practices against crop farming related hazards,

identifying and cooperating with support government bodies, effective networking and communication with other players through (electronic mailing address and whatapp), team working skills, and persuasive communication and negotiation skills.

5.1.7 Constraining Vulnerability Factors Limiting Sustainable Yam Entrepreneurial Livelihood activities

- **Major constraining shocks factors** found were pest and diseases infestation (mean=0.77), postharvest/storage pest damage (mean=0.99), and frequent illness/bad health status (mean=1.13).
- **Major constraining adverse trends factors** found are: Inadequate financial credits to promote commercial farming in the rural areas (mean=1.06), Destruction of yam farm by flock of cattle and herdsmen conflict (mean=1.45), Communal/family conflict on farm land (mean=0.84), Unstable price and poor pricing of yam produce (mean=1.14), Inadequate extension education on agricultural entrepreneurship skills among yam farmers (mean=0.98), and Poor access to yam processing equipment (mean=0.62).
- **Major constraining seasonal stress factors** found are: Irregular payment from buyers (mean=0.85), and High cost of hired labour (mean=0.85).

2.18.1 Results of Hypotheses Assessed

- Participation in yam entrepreneurial activities determinants for impact level to access to financial livelihood assets of respondents were participation in seasonal activities of yam cultivation, participation in yam marketing, years of experience as yam entrepreneur, land area cultivated and membership of farmers group

- Characteristics of yam entrepreneurial activities determinants for impact to accessibility of physical livelihood assets of respondents were yam cultivation and marketing, years of experience as yam entrepreneur, and land area cultivated among yam farmers in Ekiti State, Nigeria
- Characteristics of yam entrepreneurial activities determinants for impact to accessibility of social livelihood assets of respondents were yam cultivation, yam transportation and membership of farmers' group will be increase in contribution of yam entrepreneurial activities to sustainable social livelihood assets of yam farmers in the study area.
- Characteristics of yam entrepreneurial activities determinants for contributions level to accessibility of human livelihood assets of respondents were: involvement in yam cultivation and non-yam enterprises activities, and years of experience as yam entrepreneur.
- Characteristics of yam entrepreneurial activities determinants for contributions level to accessibility of natural livelihood assets of respondents were: involvement in activities of yam cultivation and marketing activities and years of experience as yam entrepreneur.
- Socioeconomic characteristics determinants for capacity building needs of respondents were found to include: age, educational status, cosmopolitaness, chosen yam enterprise, and experience as yam entrepreneur.
- Socio-economic characteristics determinants for attitude towards yam entrepreneurial activities among respondents were found to include: gender, marital status, chosen yam enterprise(s), experience as yam entrepreneur, and land tenure.

5.2 Conclusion

The study concluded that;

1. Yam entrepreneurial activities identified among farmers in Ekiti state were yam cultivation, marketing, transporting, and processing.
2. Farmers perceived yam entrepreneurial activities have medium level of influence on access to livelihood assets.
3. Participation in yam entrepreneurial activities identified had positive significant ($p \leq 0.05$) impact to financial, physical, social, human and natural assets of farmers in Ekiti State.
4. Farmers in Ekiti State main sources of information for yam entrepreneurial activities through agricultural extension agents, radio, fellow farmers and television.
5. Farmers in Ekiti State had positive attitude towards yam entrepreneurial activities.
6. Farmers in Ekiti State had low knowledge of yam entrepreneurial skills.
7. Farmers in Ekiti State had low proficiency in several yam entrepreneurial skills.
8. Sustainability of yam entrepreneurial activities of farmers in Ekiti State are constrained by several stresses, adverse and seasonal factors.

5.3 Recommendations

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

1. With the empirical evidence of positive impact of yam entrepreneurial activities to sustainable livelihood assets among relatively old aged respondents in this study. This

study suggests policy formulation and implementation of agricultural extension programmes through government and non-governmental agencies in farming communities of Ekiti State that will motivate more youths to venture into yam based enterprises. In doing this; more youths will be involved in yam entrepreneurial activities and there will be increase production of yam produce in Ekiti State.

2. As majority of the respondents were non-member of any crop related enterprise associations, initial capital was through personal savings with no access of livelihood credit loan, yam processing equipment, farm machinery and inadequate financial credits. This study suggests that extension agents should encourage yam entrepreneur farmers in Ekiti state to come together as association in their respective communities where not existing with the name affiliated to yam value chain enterprises. In this way, they can pool resources together and help each other. It will also make it easy for them to access loan and any other credit facilities as a group.
3. With inadequate extension education on agricultural entrepreneurship skills among yam entrepreneur farmers as constraints, more than halve of the respondents not aware of the agricultural entrepreneurship skills, low knowledge level of opportunity skills, co-operation and networking skills among respondents. This study recommends that efforts should be intensified by extension organisations and other relevant bodies to create awareness of agricultural entrepreneurship skills, encourage farmers to see themselves as entrepreneurs.
4. To build the capacity of yam entrepreneur farmers in Ekiti State for entrepreneurial skills, this study suggests agricultural extension policies formulation and implementing programme that will focus on (i) agri-entrepreneurship training in the specific areas where capacity building needs were identified in this study, and (ii)

encouraging old age and less educated yam-based entrepreneurs to participate in the agri-entrepreneurship capacity building training.

5. There is need for intensive motivation programmes for yam entrepreneur farmers in Ekiti State by agricultural extension organisation with special focus on areas where respondents were found to have negative attitude such as: finding new opportunities to explore in order to increase income, planning what to do according to the schedule, having time to be thinking of creativity for yam entrepreneurial activities and having no ambition for running their yam entrepreneurial activities.
6. Destruction of yam farms by cattle and frequent illness were found as leading constraints to sustainable development of yam entrepreneurial activities in the study area. This study suggests that government and other relevant organisations should pay more attention to health care services delivery in farming communities of Ekiti state, investigate the root cause of frequent illness and provide adequate solution. As regards destruction of farm by cattle which often leads to herdsmen-farmers conflict, this study suggests a problem solving through participatory approach for dialogue that will involve representative from both parties with the opinion that, two fighters should be asked to know what frequently causes conflict between them. They are also in the best position to suggest what may stop them from fighting each other rather than government assuming to know causes and solution to the problem.
7. Finding indicated that respondents were smallholder yam farmers with average of 3 persons as number of workers and where production is partly for the market and partly for home consumption. This study recommends that agricultural extension organisations should include in their extension package, programmes that will boast

the interest of farmers, see themselves as entrepreneur and enhance venture in large scale yam farming and processing.

Contribution to Knowledge

This study had made significant contribution to the body of knowledge. The study had identified that participation in cultivation, processing and marketing of yam entrepreneurial activities identified had positive significant ($p \leq 0.05$) impact to farmers' livelihood (financial, physical, social, human and natural assets).

Other main contributing factors identified were:

- size land area cultivated,
- number of capacity building training received,
- years of experience in yam entrepreneurial activities, and
- hours devoted per day.

Suggestions for further Studies

The study investigated the impact of yam entrepreneurial activities on livelihood of farmers in Ekiti State. Similar research can also be carried out in other areas of widely cultivated crops such as cassava, maize, plantain and banana in the state. These crops have also been shown to also possess inherent contribution to livelihood assets of farmers in the state.

Similar study may also be carried out in other states particularly in the more intensive yam producing areas of the country such as the Benue state.

This study was limited to the retrospective self-assessment of contribution of yam entrepreneurial activities to sustainable livelihood; hence, further studies can be carried out to assess the contribution in terms of actual quantity and quality of assets.

REFERENCES

- Abdul, A.A., & Norhlilmatur, N.S. (2013). Factors That Influence the Interest of Youths in Agricultural Entrepreneurship. *International Journal of Business and Social Science*, 4 (3), 288-302.
- Abdullah, F.A., & Samah, B.A. (2013). Factors impinging farmers' use of agriculture technology. *Asian Social Sciences*, 9(3), 120-124.
- Abdullah, F.A., & Samah, B.A. (2014). Factors Influencing Inclination toward Agriculture Entrepreneurship among Students in Agriculture Learning Institute. *Asian Social Science*, 10 (2), 237 – 278.
- Abelson, R.P. (1985). A variance explanation paradox: When a little is a lot. *Psychological Bulletin*, 97, 129-133.
- Abiola, A.G., & Olaopa, O.R. (2008). Economic Development And Democratic Sustenance in Nigeria. In E. O. Ojo (ed), *Challenges of Sustainable Democracy in Nigeria* (pp. 25-34). Ibadan: John Archers Publishers Limited.
- Aboh, C.L. (2008). Assessment of the Frequency of ICT Tools Usage by Agricultural Extension Agents in Imo State, Nigeria: *Journal of Agriculture and Social Research (JASR)*, 8(2).
- Acs, Z.J., & Storey, D.J. (2004). Introduction: Entrepreneurship and Economic Development. *Regional Studies*, 38 (8), 871 – 877.
- Acs, Z., & Armington, C. (2004). The impact of geographic differences in human capital on service firm formation rates. *Journal of Urban Economics*, 56: 244-78.
- Acs, Z.J., & Szerb, L. (2007). Entrepreneurship Economic growth and Public Policy. *Small Business Economics*, 28 (2-3), 109-122.
- Adah, O.C., Chia, J.I., & Shaibu, M.U. (2016). Assessment of Rural Farmers' Attitudes toward Agricultural Insurance Scheme as a Risk Management Strategy in Kogi State, North central Nigeria. *Journal of Economics and Sustainable Development*, 7 (14), 12-19.
- Adebayo, K., & Okuneye, P.A. (2005). Economics of Agricultural Extension. Adedoyin S.F. (ed), pp. 251.

- Adebo, G.M., & Ajiboye, A. (2014). Comparative Analysis of Poverty Level Among Rural and Urban Farmers in Ekiti and Ondo States. *Developing Country Studies*, 4 (20), 24-27.
- Adebo. G.M., Ayodele. O.J., & Olowokere. K. (2015). Palm Oil Production as a Poverty Alleviation Strategy among Small-scale Farmers in Ekiti State, Nigeria. *World Journal of Agricultural Research*, 3 (2), 43-48.
- Adedoyin, S.F., Fapojuwo, O.E., & Torimino, D. (1999). Educational communication materials in agricultural technology promotion: A survey of extension agents in Ijebu area of Ogun State. *Proceeding of the fifth Annual National Conference of the AESON*; 1999.
- Adekunle, O.A. (2013). *Key to Unlock*. The One Hundred and Twentieth (120TH) Inaugural Lecture. University of Ilorin, Ilorin, Nigeria. Pp. 18-22.
- Adesiji, G.B. (2006). Competency Needed by Village Extension Agents of Osun State Agricultural Development Programme Nigeria. *Agrosearch*, 8(1), 193-101.
- Adelakun, O.E., Adurogbangba, B., & Akinbile, L.A. (2015). Socioeconomic Effects of Farmer-Pastoralist Conflict on Agricultural Extension Service Delivery in Oyo State, Nigeria. *Journal of Agricultural Extension*, 19 (2), 59-70.
- Adewumi, M.O., & Omotesho, O.A. (2002). An analysis of production objectives of small-scale rural farming households in Kwara State, Nigeria. *Journal of Rural Development*, 25, 201-211.
- Adisa, R.S., Adefalu, L.L., Olatinwo, L.K., Balogun, K.S., & Ogunmadeko, O.O. (2015). Determinants of post-harvest losses of yam among yam farmers in Ekiti State, Nigeria. *Bull. Inst. Trop. Agr., Kyushu Univ.* 38, 73-78.
- Adofu, I., & Akoji, O. (2013). Alleviating poverty through the use of entrepreneurship skill acquisition in Kogi State, Nigeria. *International Open Journal of Economics*, 1, 14-23.
- Ahmad, A.W., Fauziah, W., Yusoff, H.N., & Ahmad K.R. (2011). Preliminary Study of Rural Entrepreneurship Development Program in Malaysia, International Conference On Management (Icm 2011) Proceeding, 537-546.
- Ahmed, A., & McQuid, R.W. (2005). Entrepreneurship; Management and Sustainable Development: World Review of Entrepreneurship. *Management and Sustainable Development*, 1(2), 6-30.

- Ahnstrom, J., Hockert, J., Bergea, H.L., Francis, C.A., Skelton, P., & Hallgren, L. (2008). Farmers and nature conservation: What is known about attitudes, context factors and actions affecting conservation? *Renewable Agriculture and Food Systems* 24, 38-47.
- Aidoo, R., Mensah, J.O., Wie, P. & Awunyo, V. (2014). Prospects of crop insurance as a risk management tool among arable crop farmers in Ghana. *Asian Economic and Financial Review*, 4(3), 341-354.
- Aina, B.S. & Salako, H.A. (2008). Determinants of foreign direct investment in Nigeria: an empirical investigation. *CBN Economic and Financial Review*, 39 (1).
- Ajala, C.G. & Fakoya, E.O. (2003). Women's Small Scale Business Activities Towards Poverty Alleviation in Ibadan North-East Local Government Area of Oyo State. *Asset series*. 3 (1), 1-6.
- Ajijola, S., Awoyemi, T.T. Oluwatayo, I.B. Aduramigba-Modupe, V.O. & Odetola, S.K. (2014). Resources use and economic efficiency for yam production in Oyo State, Nigeria. *European Journal of Physical and Agricultural Sciences*, 2 (2): 39 – 43.
- Ajijola S., Egbetokun, O.A. & Ogunbayo, I.E. (2011). Impact of risk attitudes on poverty level among rural farmers in Ogun State. *Journal of Development and Agricultural Economics*, 3(12), 581-587.
- Ajzen, I. (2002). Perceived behavioural control, self-efficacy, locus of control and the theory planned behaviour. *Applied Social Psychology*, 32, 1-20.
- Akanwa, P.U., & Akpanabia, N.H. (2013). Entrepreneurship Development as Panacea for Unemployment Reduction in Nigeria. *reikojournals*, 6(2)
- Akerele, D., & Adewuyi, S.A. (2011). Analysis of Poverty Profiles and Socioeconomic Determinants of Welfare among Urban Households of Ekiti State, Nigeria. *Current Research Journal of Social Sciences* 3(1), 1-7.
- Akanji, B.O., Akpokodje, G. & Ogundele, O.O. (2003). Labour use pattern on farms. Pages 34–46 in NISER Annual Survey of Crop Production Condition in Nigeria, 2000. NISER, Ibadan, Nigeria.
- Akhuemonkhan, I., & Raimi, L. (2013). Entrepreneurship education and employment stimulation in Nigeria. *Journal of Studies in Social Sciences*, vol. 3,
- Akighir, D.T. (2011). Rice Processing and Poverty Reduction in Kwande Local Government. *An Unpublished M.sc Research Project Submitted to Benue State University Post Graduate School*.

- Akinbile, L.A. (2002). Technology dissemination, agricultural productivity and poverty reduction in the rural sector of Nigeria. In Poverty reduction and agricultural sector in Nigeria. Eds Okunmadewa. Elshaddai Global ventures Ltd. Ibadan. Pp 1-5.
- Ali, D.A.H., & Ali, A.Y.S. (2013). Entrepreneurship development and poverty reduction: Empirical survey from Somalia, *American International Journal of Social Science*, 2, 108-113.
- Alberti, F., Sciscia, S., & Poli, A. (2004). Entrepreneurship Education; Notes on an ongoing debate. Proceedings of the 14th Annual International Entrepreneur Conference, University of Napoli Federico 11, Italy, 4-7 July.
- Alvarez, S.A. & Barney, J.B. (2002). *Resource-based Theory and the Firm, Strategic Entrepreneurship, Creating a Mindset*, Blackwell, Oxford.
- Amujoyegbe, B.J., & Bamire, A.S. (2005). Economic Analysis of Land Improvement Techniques in Smallholder Yam-Based Production Systems in the Agro-Ecological Zones of SouthWestern Nigeria. *J. Hum. Ecol.* 18(1), 1-12.
- Amusa, N.A. (2000). Screening cassava and yam cultivars for resistance to anthracnose using toxic metabolic of collectorichim species. *Mycopathologia* 150:137-142.
- Anríquez, G., & Stamoulis, K. (2007). Rural Development and Poverty Reduction: Is Agriculture Still the Key?, ESA Working Paper No. 07-02, June 2007 Agricultural Development Economics Division, The Food and Agriculture Organization of the United Nations, www.fao.org/es/esa
- Anozie, R.O., Anozie, S.N., Usanga, U.J., & Okelola, O.E. (2014). The State of Adoption of Yam Minisett Technique in Imo State, Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology*, 3(6), 562-568.
- Anderson, J.R., & Feder, G. (2003). Rural Extension Services: Agriculture and Rural Development Department World Bank, Washington DC. World Bank Policy Research Working Paper 2976.
- Anderson, A.R., & Jack, S.L. (2000). Teaching the entrepreneurial art, in *International Dimensions of Teaching Entrepreneurship*, ed Evans, D.S, Cole Superieur, Poitiers
- Apata, T.G., Apata, O.M., Igbalajobi, O. A., & Awoniyi, S.M.O. (2010). Determinants of rural poverty in Nigeria: Evidence from small holder farmers in South-western, Nigeria. *Journal of Science and Technology Education Research*, 1(4), 85 – 91.
- Apata, T.G. (2015). Entrepreneurship Processes and Small Farms Achievements: Empirical Analysis of Linkage. *Journal of Entrepreneurship Management and Innovation (JEMI)*, 11 (2), 105-127.

- Apata, T.G., Folayan, A., Apata O.M., & Akinla J. (2011). Central Bank of Nigeria statistical bulletin. The Economic Role of Nigerian Subsistence Agriculture in Transition: Implication for Rural Development 8th annual conference of Agricultural Economics Society Warwick University.
- Ardichvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of Business Venturing*, 18(1), 105-123.
- Aremu, M.A., & Adeyemi, S.L. (2011). Small and Medium Scale Enterprises as A Survival Strategy for Employment Generation in Nigeria. *Journal of Sustainable Development*, 4(1), 200 – 206.
- Ariyo, D. (2008). Small firms are the backbone of the Nigerian economy. Retrieved Nov. 8, 2016, from <http://www.africaeconomicanalysis.org>
- Arisena, G. M. K., Mustadjab, M. M., Setiawan, B., & Koestiono D. (2014). The Influence of Environment and Entrepreneurship Factors toward the Farming Performance. *Journal of Economics and Sustainable Development*, 5 (9), 49 – 55.
- Arogundade, B.B. (2011). Entrepreneurship Education: An Imperative for Sustainable Development in Nigeria. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, 2 (1), 26-29.
- Asefa, T. (2007). Poultry Management Practices and on Farm Performance Evaluation of Rhode Island Red (RIR), Fayoumi and Local Chicken in Umbullo Wachu,” Department of Animal and Range Sciences, Hawassa College of Agriculture, Awassa, 2007.
- Asteboro, T., & P. Thompson (2011). Entrepreneurs, Jack of All Trades or Hobos?, *Research Policy* 40 (5), 637-649.
- Ashley, C. & Carney, D. (1999). *Sustainable Livelihoods: Lessons from early experience*. Department for International Development, London.
- Asitik, J.A. (2015). Culture rural and entrepreneurship in Northern Ghana. *Humanities and Social Sciences Review*, 4(2), 239-252.
- Audet, J. (2000). Evaluation of two approaches to entrepreneurship education using an intention-based model of venture capital. *Academy of Entrepreneurship Journal*, 6 (1).
- Awe, A.A. (2013). Government Expenditure and Poverty Reduction in Ekiti State, Nigeria. *Research Journal of Finance and Accounting*, 4 (5), 95 – 104.
- Awoniyi, O. A., & Omonona, B.T. (2006). Production Efficiency in yam based enterprises in Ekiti State, Nigeria. *Journal of Central European Agriculture*, 7 (4), 627-636.
- Awotide, O.D., Kehinde, A.L., Peter, O., & Agbola, P.O. (2010). Poverty and rural livelihood diversification among farming households in southwest Nigeria. *Journal of Food, Agriculture & Environment*, 8 (1), 367 - 371.

- Awosusi, O. (2010). The Problems of Bulk-Selling Yams in Harvest and Poverty of Farmers in Ekiti State, Nigeria. *African Research Review* 4 (3b), 179-191.
- Barrett, C.B., & Brown, D.R. (2002). Agriculture and rural development: Christian groups combating persistent poverty. Department of applied economics and management Cornell University working paper 2002-45. Available at: <https://www.gordon.edu/ace/barrettbrown.doc> (accessed on 02/10/2016).
- Badi, R.V., & Baadi, N.V. (2006). *Entrepreneurship*, New Delhi; Vrinda Publication Ltd
- Baker, W.E., & Sinkula, J.M. (2009). The complementary effects of market orientation and entrepreneurial orientation on profitability in small businesses. *Journal of Small Business Management*, 47(4), 443-464.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Basso, O., Fayolle, A., & Bouchard, V. (2009). Entrepreneurial orientation: the making of a concept. *The International Journal of Entrepreneurship and Innovation*, 10(4), 313-321.
- Basu, A. (2004). Entrepreneurial aspirations among family business owners: An analysis of ethnic business owners in the UK. *International Journal of Entrepreneurial Behaviour & Research*, 10(1/2), 12-33.
- Bessant, J. (2003). *High-Involvement innovation*. West Sussex: John Wiley & Sons Ltd.
- Best, R. (2003). Farmer Participation in Market Research to Identify Income-Generating Opportunities. Centro Inter- nacional de Agricultura Tropical (International Center for Tropical Agriculture),” Kampala, 2003, p. 2. [www.International Center for Tropical Agriculture.cgiar.org/](http://www.InternationalCenterforTropicalAgriculture.cgiar.org/)
- Best, R. Delve, R., Kaaria, S., Kirkby, R., & Pascal, C. (2004). Linking Small –holder farmers to markets In East Africa ;Empowering Mountain Communities to ijdentify Market opportunities and Develop Rural Agroentreprises, International Centre For Tropical Agriculture, Kampala.
- Bekele, A. (2008). Livelihood strategies and food security in Woliyta, Southern Ethiopia: the case of Boloso Sore District. MSc thesis submitted to Haramaya University. Available at: <http://www.scribd.com> (accessed on 2/09/2016).
- Berger, D.E. (2003). Introduction to Multiple Regression. Claremont Graduate University. Retrieved from <http://wise.cgu.edu> on 2nd May, 2016.
- Bhardwaj, B.R., Agrawal, S. & Momaya, K. (2007). Corporate entrepreneurship model: Source of competitiveness. *IIMB Management Review*, 19(2), 131-145.
- Bird, B. (1995). Towards a Theory of Entrepreneurial Competency. *Advances in Entrepreneurship, Firm Emergence and Growth* 2, 51-72.
- Block, J. & Sandner, P. (2006). *The effect of motivation on self-employment duration in Germany: Necessity versus opportunity entrepreneurs*. MPRA Munich Personal RePEc Archive, Paper no. 215. Retrieved 19 June, 2016, from <http://mpra.ub.uni-muenchen.de/215>

- Bosworth, G. (2011). Characterising rural businesses, Tales from the paperman, the 9th Rural Entrepreneurship Conference, Nottingham Trent University, available at <http://www.ntu.ac.uk/nbs/document_uploads/109330.pdf> [accessed on 01.12.2015]
- Bone, Z., Henry, E., Hunt, E., & Sefton, C. (2003). Attitude and Family Farm Business Performance. *International Farm Management Congress*, 1 – 7.
- Boone, H.N., & Boone, D.A. (2012). Analyzing Likert Data. *Journal of Extension*, 50 (2), 2
- Bruton, G. D., Ahlstrom, D., & Obloj, K., (2008). Entrepreneurship in Emerging Economies: Where are we today and where the research should go in the future? *Entrepreneurship Theory and Practice*, 32(1), 1 – 14.
- Burger, L., O'Neill, C., & Mahadea, D. (2005). The impact of previous knowledge and experience on the entrepreneurial attitudes of Grade 12 learners. *South African Journal of Education* 25(2), 89–94.
- Butt, T.M., Hassan, M.Z., Sahi, S.T., Atiq, M., Jabbar, A., Ahmad, I., Luqman, M., & Shafique, W. (2011). Role of youth in agricultural and rural development: a self perceived case study of Okara district, Punjab, Pakistan. *Journal of Agricultural Extension and Rural Development* 3(2), 23-28.
- Burton, R.J.F., & Wilson, G.A. (2006). Injecting social psychology theory into conceptualisations of agricultural agency: Towards a post-productivist farmer self-identity? *Journal of Rural Studies*, 22, 95-115.
- Burns, P. (2008). *Corporate entrepreneurship: Building the entrepreneurial organization*. (2nd ed.). Hampshire: Palgrave Macmillan.
- Butler, L.M. & Mazur, R.E. (2007). Principles and processes for enhancing sustainable rural livelihoods: Collaborative learning in Uganda. *International Journal of Sustainable Development and World Ecology* 14(6), 604-617.
- Çaliyurt, K. T. (2011). Importance of financial management knowledge in small and medium enterprises (SMEs) managed by women. *Trakya University Journal of Social Science*, 13(2), 327-354.
- Carney, D. *et al.* (1999). Livelihood approaches compared: a brief comparison of the livelihoods approaches of the UK Department for International Development (DFID), CARE, Oxfam and the UNDP. A brief review of the fundamental principles behind the sustainable livelihood approach of donor agencies. *Livelihoods connect*. London: DFID.
- Carney, D. (2003). Sustainable livelihoods approach: progress and possibilities. Available at: http://www.eldis.org/vfile/upload/1/document/.../SLA_Progress.pdf (accessed on 08/05/2016).
- Carter, S. (2003). Entrepreneurship in the farm sector: Indigenous growth for rural areas. In O.J. Borch, and L. Ronning (Eds.), *Entrepreneurship in regional food production*. Proceedings of 2nd normadic workshop on entrepreneurship in regional food production bodo, may 5-6, 2003, pp. 22-47. Norlands Forskning.
- Carree, M., & Thurik, R. (2005). Understanding the role of entrepreneurship for Economic Growth: Discussion paper on Entrepreneurship Growth and Public Policy. Max

Planck Institute for Research into Economy Systems Group Entrepreneurship, Growth. Germany.

- Carney, D. (1998). *Sustainable Rural Livelihoods: what contribution can we make?* Department for International Development, London.
- Casillas, J.C. & Morena, A.M. (2010). The relationship between entrepreneurial orientation and growth: The moderation role of family involvement. *Entrepreneurship & Regional Development*, 22(3-4), 265–291.
- Çaliyurt, K.T. (2011). Importance of financial management knowledge in small and medium enterprises (SMEs) managed by women. *Trakya University Journal of Social Science*, 13(2), 327-354.
- Center for Rural entrepreneurship, (2005). Energizing the entrepreneurial economy, Policy Brief, No.2, RUPRI.
- Charney, A., & Libecap, D.B. (2000). The Impact of Entrepreneurship Education: An Evaluation of the Berger Entrepreneurship Program at the University of Arizona, 1985-1999. Kansas City, MI: The Kauffman Center for Entrepreneurial Leadership.
- Chandrashekar, S., & Bahal, R. (2012). Factors Influencing the Entrepreneurial Behaviour of Agricultural Graduates. *SAARC J. Agri.*, 10 (2), 31-39.
- Cheng, Y.M., & Chan, W.S. (2009). The Effectiveness of Entrepreneurship Education in Malaysia. *Education and Training*, 51 (7), 555-566.
- Christoplos, I. (2010). Mobilizing the Potentials of Rural and Agricultural Extension. Food and Agricultural Organization, Rome.
- Chipeta, S., Christoplos, I., & Katz, E. (2008). Common Framework on Market-Oriented Agricultural Advisory Services. Wageningen, Netherlands: Neuchâtel Group.
- Collis, D. J. & Montgomery, C. A. (2005). *Corporate Strategy: A Resource-Based Approach*. (2nd ed.). Boston: McGraw-Hill/Irwin.
- Cooper, J. R. (1998). A multidimensional approach to the adoption of innovation. *Management Decision*, 36(8), 493-502.
- Currie, G., Humphreys, M., Ucbasaran, D. & McManus, S. (2008). Entrepreneurial Leadership in the English Public Sector: Paradox or Possibility? *Public Administration*, 86, (4), 987–1008.
- Covin, J. G., & Slevin, D. P. (2002). The entrepreneurial imperatives of strategic leadership. In M. A. Hitt, R. D. Ireland, S. M. Camp, & D. L. Sexton (Eds.), *Strategic entrepreneurship: Creating a new mindset*: 309–327. Oxford: Blackwell Publishers.
- Dana, L. P. (2001). The Education and Training of Entrepreneurship in Asia. *Education + Training*. 43(8/9), 405-415.
- Daily, C. M., McDougall, P. P., Covin, J. G. & Dalton, D. R. (2002). Governance and Strategic Leadership in Entrepreneurial Firms. *Journal of Management*, 28, 387-412.
- Dauda, O. (2007). Entrepreneurship Education. *Learning Organisation*. 5 (3), 144.155.

- Davis, B., Winter, P., Carietto, G., Covarrubias, K., Quinones, E., Zezza, A., Stamoulis, K., Bonomi, G., & Diguiseppe, S. (2008). Rural Income Generating Activities: A Cross Country Comparison. Background paper for the World Development Report 2008.
- Davis, P., Naughton, J., & Rothwell, W. (2004). New roles and new competencies for the profession. *Training & Development*, 58(4), 26-37.
- Deamer, I., and Earle, L. (2004). Searching for Entrepreneurship. *Industrial and Commercial Training*, 36 (3), 99-103.
- Deakins, D., & Freel, M. (2003) *Entrepreneurship and small firms*. Berkshire, UK, McGraw-Hill.
- Degei, A. C., & Martin, S. (2009). An integrated Methodology for incubation of Business Ideas in Rural Community in Portugal.
- De Lauwere, C., Verhaar, K., & Drost, H. (2006). *Het Mysterie van het Ondernemerschap, boeren en tuinders op zoek naar nieuwe wegen in een dynamische maatschappij* (The Mystery of Entrepreneurship; Farmers looking for new pathways in a dynamic society, in Dutch with English summary). Wageningen University and Research Centre, Netherlands.
- De Lauwere, C.C. de, Schoorlemmer, H.B., Smit, A.B., Roelofs, P.F.M.M. & Poelman A.A.M. (2002). Research to possible improvements of the entrepreneurship of integrated and biological farmers: start for a more professional approach (in Dutch with English abstract). Agrotechnology & Food Innovations, Report 002, Wageningen.
- Defra, F. (2007). Barriers to Farm Diversification: Report of the Joint Industry Working Group, London: Department for Environment, Food and Rural Affairs.
- Department for International Development of the United Kingdom DFID (2004). Rural urban development case study – Nigeria. Oxford Policy Management, pp. 22
- Department for International Development of the United Kingdom DFID (1999). *Approch to Sustainable Livelihood*: www.nssd.net/references/SustLiveli/DFIDapproach.htm, accessed 4th April 2016
- Dewett, T. (2004). Employee creativity and the role of risk. *European Journal of Innovation Management*, 7(4), 257-266.
- Dreyer, A. (2006). Strategic innovation: A new perspective on strategic management, *Handbook of business strategy*, 7(1), 143-147.
- Dollinger, M. J. (2003). Entrepreneurship - strategies and resources, Pearson International Edition, New Jersey.
- Dollinger, M. J. (2008). Entrepreneurship Strategies and Resources International Edition 3rd Edition, Prentice Hall, New Jersey.
- Duru, M. (2011). Entrepreneurship Opportunities and Challenges In Nigeria. *Business and Management Review*, 1(1), 41-48.

- Duniya, A. S. (2010). Challenges of Entrepreneurship Development in Agriculture for Job Creation in Nigerian. Proceedings of the 24th Annual National Conference of Farm Management Association of Nigeria held at Adamawa State University, Mubi between 11th – 14th October, 2010. Pp. 1 – 4.
- Dutta, S. (2004). Rural Industrial Entrepreneurship: The Case in Bardhaman District in Bengal. Dissertation: Wihaningen University, Netherland.
- Ebewore, S. O., Egbodion, J. & Oboh O. O. (2013). Profitability Analysis of Yam Production in Ika South Local Government Area of Delta State, Nigeria. *Journal of Biology, Agriculture and Healthcare*, 3(2), 118 – 129.
- Ebiringa, O. T. (2012). Perspectives: Entrepreneurship Development & Growth of Enterprises in Nigeria. *Entrepreneurial practice review*, 2 (2).
- Ekumankama O. O. (2000). Farmers' level of satisfaction with formal agricultural information source in Umuahia, Abia state, Nigeria. *Journal of Sustainable Agriculture and Environment*. 2(2): 257-263.
- Ellis, F. (2000). The Determinants of Rural Livelihood Diversification in Developing Countries. *Journal of Agricultural Economics*, 51 (2), 289-302.
- Emerole, C. O. Dorcas, U., & Kelechi, C. (2014). Determinants of Entrepreneurship Decision for Agricultural Business among Graduates in Abia State, Nigeria. *International Conference on Agricultural, Environmental and Biological Sciences (AEBS-2014)* April 24-25, 2014 Phuket (Thailand).
- Esiobu, N. S., & Onubuogu, G. C. (2014). Determinant of Income from Pineapple Production in Imo State, Nigeria: An Econometric Model Approach; *Journal of Economics and Sustainable Development*, 5 (22), 122-132.
- Esiobu, N. S., Onubuogu, G. C., & Ibe, G. O. (2015). Analysis of Entrepreneurship Development in Agriculture among Arable Crop Farmers in Imo State, Nigeria. *International Journal of African and Asian Studies*, 7, 2015.
- Ekong, E. E. (2003). An introduction to rural sociology. Uyo, Nigeria: Dove Education Publishers.
- European Commission (2004). Com Green Paper Entrepreneurship in Europe. www.esofarmers.org.
- Ekumade, A. B., & Osundare, F. O. (2014). Determinants and Effect of Livelihood Diversification on Farm Households in Ekiti State, Nigeria. *Journal of Economics and Sustainable Development*, 5(5), 104-110.
- Etim, N. A., Thompson, D. & Onyenweaku, C. E. (2013). Measuring efficiency of yam (*Dioscorea* spp) production among resource poor farmers in rural Nigeria. *Journal of Agriculture and Food Sciences*, 1(3), 42-47.
- Ezeibe, A. B. C., Okorji, E. C., Chah, J. M., & Abudei, R. N. (2014). Impact of entrepreneurship training on rural poultry farmers Adoption of Improved management practices in Enugu State, Nigeria. *African Journal of Agricultural Research*, 9(20), 1604 – 1609.

- FAO (2001). *International Workshop on Farm Radio Broadcasting: Information & Communication Technologies (ICTs) Servicing Farm Radio: New Contents, New Partnerships*, 19-22 February 2001, Rome, Italy. Available: <http://www.fao.org/docrep/003/x6721e/x6721e00.htm#TopOfPage> [accessed 3 October 2016].
- FAO (2006). Insecurity in the World 2006. Eradiating World hunger-taking stock ten years after the World the World Food Summit <http://rdenews.up/b.edu.php/index.php>
- FAO (2012). *Entrepreneurship in farming: Farm management extension guide*. Food and Agriculture Organisation of the United Nations Rome.
- FAO. (1992). *Planning of effective training*. A Guide to Curriculum Development FAO. Rome. Pp. 24-37.
- Falola, A & Adewumi, M. O. (2011). Constraints to Use of Mobile Telephony for Agricultural Production in Ondo State, Nigeria. *Journal of Research in Forestry, Wildlife and Environment*, 4 (2), 52-63.
- Falconer, K. (2000). Farm-level constraints on agri-environmental scheme participation: A transactional perspective. *Journal of Rural Studies*, 16(3): 379–394.
- Fairlie, R. W. (2005). Entrepreneurship and Earnings among Young Adults from Disadvantaged Families. *Small Business Economics*, 25(3), 223-36.
- Fawole, O. P., & Oladele, O. I. (2007). Sustainable Food Crop Production Through Multiple Cropping Pattern among Farmers in South West Nigeria. *J. Hum Ecol.*, 21(41), 245-249
- Farrington, J. (2001). Sustainable livelihoods, rights and the new architecture of aid. Natural Resource Perspectives 69. Overseas Development Institute, London.
- Forza, C. (2002). Surveys; Survey research in operations management: a process-based Perspective, *International of Operations & Production Management*, 22(2), 152-194.
- Forsman, S. (2003). Creation of competitive advantage in regional food production: market opportunities and challenges. In *Entrepreneurship in Regional Food Production*, pp. 123-142. Norland Research Institute, Bodo, Norway.
- Filion, L. J. (1997). *From entrepreneurship to entrepronology*. San Francisco, California: HEC, The University of Montreal Business School. Paper presented at the 42nd 1CSB World Conference, June 21-24.
- Gana, J. S. (2001). *Entrepreneurship*. Jofegan Associates.
- Gani, B.S. & Adeoti, A.I. (2011) Analysis of Market Participation and Rural Poverty among Farmers in Northern Part of Taraba State, Nigeria. *Journal of Economics*, 2(1): 23-36
- Galloway, L. & Brown, W., 2002, Entrepreneurship education at university: a driver in the creation of high growth firms? *Education + Training* 44(8/9): 398-405.
- Getz, D. (2003). *Guide to Rural Economic and Enterprise Development*. Eschborn, Germany: Deutsche Gesellschaft für Technische Zusammenarbeit.

- Gebremedhin, G., & Jaleta, M. (2010). *Commercialization of smallholders: Does market orientation translate into market participation?* (No. 22). ILRI (aka ILCA and ILRAD).
- Gibb, A. A. (2000). In pursuit of a new 'enterprise' and 'entrepreneurship' paradigm for learning: creative destruction, new values, new ways of doing things and new combinations of knowledge. *International Journal of Management*, 4 (3): 233-69.
- Gianneti, M., & Simonov, A. (2009). Social interactions and entrepreneurial activity. *Journals of Economics and management Strategy*, 18 (3), 665-709.
- Goetz, S., Partridge, M., Deller, S., & Fleming, D. (2010). Evaluating U.S.rural entrepreneurship policy. *Journal of Regional Analysis and Policy*, 40(1), 20-33.
- Gorman, G, Hanlon, D., & King, W. (1997). Some research perspectives on entrepreneurship education. *International Small Business Journal*, 15(3), 56-77.
- Gray, J. (2000). *At home in the Hills: sense of place in the Scottish Borders*: Oxford, Berghahn.
- Gürbüz, G. & Aykol, S. (2009). Entrepreneurial management, entrepreneurial orientation and Turkish small firm growth. *Management Research News*, 32(4), 321-336.
- Gujarati, D. N. (2006). *Essentials of econometrics*. 3rd Edition. New York: Mc-Graw Hill.
- Gwary, M. M., Kwaghe, P. V., Ja'afar- Furo, M. R., and Dennis, A. (2011). Analysis of entrepreneurial agricultural activities of youths in Michika Local Government Area of Adamawa State, Nigeria. *Journal of Development and Agricultural Economics Vol. 3*(3), pp. 91-97
- Hagh juo, N. (1992). The requirements of technical education and professional development. *Hamahang Journal*. No. 31.
- Hashemi, S. M. K., Nadi, H. K. & Rezvanfar, A. (2012). Agricultural Personnel's Intrapreneurial Behavior: Effects of Perceived Organizational Support. *Annals of Biological Research*, 3(1), 575-582.
- Hawkes, C. & Ruel, M. T. (2006). The links between agriculture and health: An intersectoral opportunity to improve the health and livelihoods of the poor. *Bulletin of the World Health Organization*. 84: 985–991.
- Hawkins, R. (ed). (2009). *Collective innovation, A Source Book*. South Africa: ICRA, NUFFIC Publication.
- Helmore, K., & Singh, N. (2001). *Sustainable livelihoods: building on the wealth of the poor*. Bloomfield, USA: Kumarian Press.
- Helmore, K. & Singh, N. (2001). *Sustainable Livelihoods: Building on the Wealth of the Poor*. Kumarian Press, Connecticut, USA.
- Hoekman, B., Michalopoulos, C., Schiff, M. & Tarr, D. (2001). Trade Policy and Poverty Alleviation. *World Bank Working Paper No. 2733*, Washington DC: World Bank.

- Hill, J., & McGowan, P. (1999). A qualitative approach to developing small firm marketing planning competences, *Qualitative Market Research: An international Journal*, 2(3)
- Hogg, M., & Vaughan, G., (2005). *Social Psychology*, London: Prentice-Hall.
- Hussin, M. R., Asaari, M. H. A., Karia, N., & Hamid, A. J. A. (2012). Small Farmers and Factors that Motivate them towards Agricultural Entrepreneurship activities, *Journal of Agribusiness Marketing*, 5: 47-60.
- Ibitoye, S. J., & Onimisi, J. A. (2013). Economic assessment of yam production in Kabba-Bunu Local Government Area of Kogi State, Nigeria. *J. Dev. Agric. Econ.*, 5(11), 470-475
- Ibrahim, A. B. & Soufani, K. (2002). Entrepreneurship and Training in Canada : A Critical Assessment. *Education + Training* 44 (8/9), 421-430.
- Idowu. A. O. (2013). Poverty Profile of Rural Farm Household in Southwest Nigeria. *Agronomie Africaine*, 25(3), 309 - 319
- Igwe, C. N., Adebayo, M. S., Olakanmi, O. A., Ogbonna, I. G., & Aina, O. S. (2013). Promoting Wealth and Job Creation in Nigeria-Review of the Role of Entrepreneurship. *Journal of Sustainable Development Studies*, 3 (1), 80-100
- Interman (1991). *Profiles of Entrepreneurship Development Programmes*. Geneva: International Labour Office.
- Inyang, B. J. & Enuoh, R. O. (2009). Entrepreneurial Competencies: The Missing Links to Successful Entrepreneurship in Nigeria. *International Business Research*, 2 (2), 62-71
- Izekor, O. B., & Olumese, M. I. (2010). Determinants of Yam Production and Profitability in Edo State, Nigeria. *African Journal of General Agriculture* 6 (4), 205-2010.
- Ireland R.D, Hitt MA, Sirmon DG (2003). A Model of Strategic Entrepreneurship: The Construct and its Dimensions. *Journal of Management*, 29(6) 963–989
- Jibowo, G. (1992). *Essential of Rural Sociology*. Gbemi Sodipo Press Ltd., Abeokuta, Nigeria.
- Johnson, L. K. (2002). The organizational identity trap. *MIT Sloan Management Review*, 43(4): 11.
- Jibril, I. U. (2009). Squatter Resettlement/Relocation Programme in Abuja, Nigeria and the Issue of Land Title Security. FIG Working Week, Eilat, Israel, 3-8 May, pp. 1 – 15.
- Katz J. (1991). The Institution and Infrastructure of Entrepreneurship”, *Entrepreneurship Theory and Practice*, Spring 1991 p85-102.
- Kalantaridis, C., and Bika, Z. (2006), ‘In-migrant entrepreneurship in rural England: beyond local embeddedness’, *Entrepreneurship & Regional Development*, 18 (2), 109–131.
- Kanothi, R. N. (2009). The dynamics of entrepreneurship in ICT: Case of mobile phones downstream services in Kenya. Institute of Social Science, Working Paper, No. 466.
- Kallio, V. and Kola, J, (1999). *Maatalousyritysten menestystekijät: Aluetutkimus Etelä-Karjalassa, Etelä-Savossa ja Kymenlaaksossa* (‘Success Factors of Farm Enterprises

- in Finland*). University of Helsinki, Department of Economics and Management, Publications No. 24.
- Knudson, W. A., Wysocki, A., Champagne, J. & Peterson, H.C. (2004). Entrepreneurship and Innovation in the Agri-Food System. *American Journal of Agricultural Economics*, 86(5), 1330-1336.
- Kirby, D. A. (2002). *Entrepreneurship Education: Can Business Schools Meet the Challenge?* International Council for Small Business ICSB 2002-079 47th World Conference San Juan, Puerto Rico June 16-19.
- Kirubi, C. (2006). How Important is Modern Energy for Micro-Enterprise? Evidence from Rural Kenya. Master Thesis, University of California, Berkeley.
- Kirzner, I. M. (1973). *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Kiggundy, M. N. (2002). Entrepreneurs and entrepreneurship in Africa: What is known and what needs to be done. *Journal of Developmental Entrepreneurship*, 7(3), 239-258.
- Kolawole, O. D. & Torimiro, D. O. (2005). Participatory Rural Entrepreneurship Development for Grassroots Transformation: A Factor Analysis. *Journal of Human Ecology*, 18(3), 193-198.
- Korsching, P. F. & Allen, J. C. (2004). Locality Based Entrepreneurship: A Strategy for Community Economic Vitality. *Community Development Journal*, 39(4), 385-400.
- Kodithuwakku, S. & Rosa, P. (2002). The entrepreneurial process and economic success in a constrained environment. *Journal of Business Venturing*, 17, 431-465.
- Korieocha, D. S., Ogbonna, M. C., Korieocha, J. N. & Nwokocha, C. C. (2011). Effect of fluazifopbutyl and atrazine + metolachlor (Tank mixed) for weed control in sweet potato (*Ipomoea batatas*) in South Eastern, Nigeria. *Journal of Agriculture and Social Research*, 11(1), 72-76.
- Kuratko, D. F. (2005). Entrepreneurship education: Emerging trend and challenges for the 21st century. <http://www.usasbe.org/pdf/CWP-kuratko.pdf>.
- Kuratko, D.F. (2007). Entrepreneurial Leadership in the 21st Century. *Journal of Leadership and Organizational Studies*, 2007, 13, 4.
- Kuratko, D. F. & Audretsch, D. B. (2009). Strategic entrepreneurship: exploring different perspectives of an emerging concept. *Entrepreneurship Theory and Practice*, 33(1), 1-17.
- Kuratko D. F., Richard and F., and Hodgetts M. (2001). *Entrepreneurship a Contemporary Approach*, Harecourt College Publishers, New York.
- Lazear E. P. (2004). Balanced Skills and Entrepreneurship. *American Economic Review* 94(2), 208-211.
- Lazear E. P. (2005) Entrepreneurship. *Journal of Labor Economics* 23(4), 649-680.

- Likert, R. (1932). A technique for the measurement of attitudes. NY: *Arch Psychology*, 22(140), 55.
- Lope-Phihie, Z. A. & Bagheri, A. (2011). Malay secondary school students' entrepreneurial attitude orientation and entrepreneurial self-efficacy: a descriptive study. *Journal of Applied Science*, 11(1), 316-322.
- Llewellyn, D., & Wilson, K. (2003). The controversial role of personality traits in entrepreneurial psychology. *Education+Training*, 45(6), 341-5.
- Lumpkin, G. T. & Dess, G. G. (2001). Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*, 16(5), 429-451.
- Lundy, M., Gottret, M.V, Cifuentes, W., Ostertag, C.F, Best, R., Ferris, S. & Peters D. (2004). Design of Strategies to Increase the Competitiveness of Smallholder Chains, Rural Agro Enterprise Development Project," International Center for Tropical Agriculture, Cali, 2004.
- Mafukata, M. A. (2015). Factors Having The Most Significance on the Choice and Selection of Marketing Channels Amongst Communal Cattle Farmers in Vhembe District, Limpopo Province. *Journal of Human Ecology* 19 (1-2), 77-87.
- Man, T. W. Y., Lau, T. & Chan, K. F. (2002). The competitiveness of small and medium enterprises - A conceptualization with focus on entrepreneurial competences. *Journal of Business Venturing*, 17: 123-142.
- Manyong, V. M., Amegbeto, K. N., Asiedu, R. & Coulibal, O. (2002). "Technology adoption within yam-based production system": Prospects for the diffusion of improved varieties in Nigeria. *IITA Project 5 2002*, pp: 6-11.
- Matanmi, S., & Awodun, M. (2005). An Assessment of Competitive Strategies and Growth Patterns of New Enterprises in Nigeria using the Developing Economy Model. *Lagos Organization Review*, 1(1), 26-32.
- Matlay, H. (2005). Entrepreneurship education in UK business school: Conceptual, contextual and policy consideration. *Journal of Small Business and Enterprise Development*, 12 (4), 627- 643
- Marsden, T. & Smith, E. (2005). Ecological entrepreneurship: sustainable development in local communities through quality food production and local branding. *Geoforum*, 36(4), 440-451.
- Martin, R. & Osberg, S. (2007). Social Entrepreneurship: The Case for Definition. Stanford Social Innovation Review, Leland Stanford Jr. University.
- Maru, A. (2003). Information and communication technology use in agricultural extension in India. Available at: http://cta.int/obsavatory2003/case_studies_case_study_india.pdf. Accessed on 12 January, 2016
- Mbam, B. N. & Nwibo, S. U. (2013). Entrepreneurship Development as a Strategy for

- Poverty Alleviation among Farming Households in Igbo-Eze North Local Government Area of Enugu State, Nigeria. *Greener Journal of Agricultural Sciences*, 3 (10), 736-742.
- McElwee, G. (2004). A segmentation framework for the farm sector. 3rd Rural Entrepreneurship Conference University of Paisley.
- McElwee, G. (2005). Developing entrepreneurial skills in Agriculture; A literature review on entrepreneurship in Agriculture. Public report of the EU-project 'Developing Entrepreneurial Skills of Farmers'; University of Lincoln, 2005; available on www.esofarmers.org
- McElwee, G. (2006). Farmers as entrepreneurs: developing competitive skills. *Journal of Developmental Entrepreneurship*, 11 (3), 187–206.
- McElwee, G. (2006). The entrepreneurial farmer: A Pandora's box. *Rural Enterprise and Management*, 2(2), 23-42.
- McElwee, G. (2008). A taxonomy of entrepreneurial farmers. *International Journal of Entrepreneurship and Small Business*, 6(3), 465-478.
- McElwee, G., & Bosworth, G. (2010). Exploring the strategic skills of farmers across a typology of farm diversification approaches. *Journal of Farm Management*, 13(12), 819–838.
- McElwee, G., & Robson, A. (2005). Diversifying the farm: opportunities and barriers. *Finnish Journal of Rural Research and Policy*, 4/2005.
- McDowell, C., & Sparks, R. (1989). Multivariate modelling and prediction of farmers' conservation behaviour towards natural ecosystems. *Journal of Environmental Management* 28, 185-210.
- McFadzean, E., O'Loughlin, A. & Shaw, E. (2005). Corporate entrepreneurship and innovation. Part 1: The missing link. *European Journal of Innovation Management*, 8(3), 350-372.
- McGrath, R. M., & MacMillan, I. C. (2000). *The entrepreneurial mindset*. Boston: Harvard Business School Press.
- McMullen, J.S., Plummer, L. A., & Acs, Z. J. (2007). What is an entrepreneurial opportunity? *Small Business Economics*, 28(4), 273-283.
- Meert, H., Van Huylenbroeck, T., Bourgeois, M., & van Hecke, E. (2005). Farm Household survival strategies and diversification on marginal farms. *Journal of Rural Studies*, 21: 81-97.
- Meinzen-Dick, R., Raju, K. V. & Gulati, A. (2002). What affects organization and collective action for managing resources? Evidence from canal irrigation systems in India. *World Development*, 30(4), 649–666.
- Mesquita, L. F., & Lazzarini, S. G. (2008). Horizontal and vertical relationships in developing economies: implications for SMEs' access to global markets. *Academy of Management Journal*, 51(2), 359-380.

- Meccheri, N., & Pelloni, G. (2006). Rural entrepreneurs and institutional assistance: an empirical study from mountainous Italy. *Entrepreneurship and Regional Development*, 18 (5), 371–392.
- Mensah S. A., & Benedict E. (2010). Entrepreneurship training and poverty alleviation: Empowering the poor in the Eastern free state of South Africa, *African Journal of Economic and Management Studies*, 1, 138-163.
- Milcah, W., Mulu-Mutuku, D. A., Odero-Wanga, A. M., Ali-Olubandwa, J. M., & Amos, N. (2013). Commercialisation of Traditional Crops: Are Cassava Production and Utilisation Promotion Efforts Bearing Fruit in Kenya? *Journal of Sustainable Development*, 6 (7), 48-58.
- Minniti, M., & Lévesque, M. (2008). Recent developments in the economics of entrepreneurship. *J. Bus. Vent.* 23, 603-612
- Mitchelmore, S. & Rowley, J. (2010). Entrepreneurial competencies: A literature review and development agenda. *International Journal of Entrepreneurial Behaviour and Research*, 16(2), 92-111.
- Miller, D. R. S., Sutherland, L. A., Morrice, J. G., Aspinall, R. J., Barnes, A., Blackstock, K.L., Buchan, K., Donnelly, D., Hawes, C., McCrum, G., Matthews, K., Miller, D., Renwick, A., Smith, M., Squire, G., Toma, L. (2009). Rural land use study 1: Drivers and decision-making. Research Findings No.8. RERAD, Scottish Government, November 2009
- Mitra J., & Abubakar, Y. (2011). Knowledge creation and human capital for development: The role of graduate entrepreneurship, *Education+ Training*, 53, 462-479.
- Mohamed, Z. & Rezai, G. (2011). The effectiveness of entrepreneurship extension education among the FOA members in Malaysia, *Current Research Journal of Social Sciences*, 3, 17-21.
- Mohd-Salleh H. D., Hoe C. H., Norashidah H., Oii Y. K., Shuhymee, A., Habal B., Norita D., Nosli M., Armanurah, M., Lily, J. A. & Mohammed, N.M.H. (2005). *Asas keushawanan*. Kuala Lumpur: Thompson Learning.
- Morris, M. H., Kuratko, D. F. & Covin, J. G. (2008). *Corporate Entrepreneurs and Innovation* (2nd ed.). Mason, OH: South-Western.
- Morena, A. & Casillas, J. (2008). Entrepreneurial orientation and growth of SMEs: A causal model. *Entrepreneurship Theory and Practice*, 32(3), 507-528.
- Morgan S. L., Marsden T., Miele M., *et al.* (2010). Agricultural multifunctionality and farmers' entrepreneurial skills: A study of Tuscan and Welsh farmers. *Journal of Rural Studies* 26 (2), 116-129.
- Mosley, P. & Verschoor, A. (2005). Risk attitudes in the vicious cycle of poverty. *Eur. J. Dev. Res.*, 17(1), 59-88.
- Mullins, L. J. (2010). *Management and Organizational Behaviour*, Ninth ed, London: Pearson Education Ltd.

- Mullins, J. W. & Forlani, D. (2005). Missing the boat or sinking the boat: A study of new venture decision making. *Journal of Business Venturing*, 20(1), 47–69.
- Mujuru, J. T. R. (2014). Assessing the impact of strategic entrepreneurship skills training workshops on small-holder farmers' entrepreneurial competence and capabilities: Case studies of Dototo Irrigation scheme in Mashonaland central province and Mitchell in Mashonaland East province, Zimbabwe. *International Journal of Small Business and Entrepreneurship Research*, 2 (1), 11-19.
- National Bureau of Statistics (2005). Poverty Profile for Nigeria. *Nigerian Bureau of Statistics*. Abuja, Nigeria.
- National Bureau of Statistics (2012). Nigeria Poverty Profile 2010. *Nigerian Bureau of Statistics*. Abuja, Nigeria. January 2012
- Neuman, W. (2000). *Social Research Methods: Qualitative and Quantitative Approaches*, 4th Ed. Boston: Allyn and Bacon.
- Nieman, G., Hough, J. & Nieuwenhuizen, C. (2004). Entrepreneurship: A South African Perspective ,Pretoria ,Van Schaik Publishers.Timmons A ,Spinelli ,S (2003) New Venture Creation For the 21th Century.
- Nkang, N. M., Abang, S. O., Akpan, O. E. & Offem, K. J. (2006). Cointegration and error correction modelling of agricultural export trade in Nigeria: The case of cocoa. *Journal of Agriculture and Social Sciences*, 2(4), 249–255.
- Nkechi, A., Ikechukwu, E. J. & Okechukwu, U. F. (2012). Entrepreneurship development and employment in Nigeria: Problems and prospects. *Universal Journal of Education and General Studies*, 1(4), 088-102.
- Nnadi, F. N., Chikaire, J., Echetama, J. A., Ihenacho, R. A. & Utazi, C. O. (2013). Assessment of agricultural extension strategies for poverty alleviation in Imo State, Nigeria. *Net Journal of Agricultural Science* 1(2), 17-23.
- Nwachukwu, I. N., & Ezech, C. I. (2007). Impact of Selected Rural Development Programmes on Poverty Alleviation in Ikwuano LGA, Abia State, Nigeria MPRA Paper No. 13720, *African Journal of Food, Agriculture, Nutrition and Development*, 7 (5).
- Nwaobi, G. C. (2003). Solving the Poverty Crisis in Nigeria: An Applied General Equilibrium approach. *Quantitative Economic Research Bureau*. Gwagwalada, Abuja.
- Nwaobiala, C. U. & Eze, C. I. (2008). Effects of Private Sector Extension Service on Crop Farmers Production in Ogba/Egbema/Ndoni LGA of Rivers State, Nigeria. *Journal of Food and Fibre Production*, 1 (1), 50 – 56.
- Nwaogwugwu, O. N. & Matthews-Njoku, E. C. (2017). Livelihood Resources Available to Rural Households in Southeast Nigeria: Implication for Agricultural and Rural Development in Nigeria. *Scientia Agriculturae*, 17 (1): 15-21
- Nwangwu I. O. (2006). Fundamentals of entrepreneurship in educational management. Enugu: Cheston Agency Ltd.

- Ngorora, G .P. K., & Mago, S. (2013). Challenges of rural entrepreneurship in South Africa : Insights from Nkonkobe municipal area in the eastern Cape Province. *International Journal of Information Technology and Business Management*, 16 (1), 1- 11.
- Odero, K. K. (2006). Information capital: 6th asset of sustainable livelihood framework. *Discovery and Innovation* 18(2), 83-91.
- Odjegba, E. (2005). Building Nigeria's entrepreneurship: What stakeholders say about essential ingredients. *Sunday Vanguard*. July 3.
- OECD, (2006). Entrepreneurship in the Districts Uckermark in Brandenburg, and Parchim in Mecklenburg-Western Pomerania, Discussion Paper, OECD, Paris.
- Ofana, O. G., Efeiom, E. C. & Omini, E. E. (2016). Constraints to agricultural Development in Nigeria. *International Journal of Development and Economic Sustainability*, 4(2), 1-15.
- Ogbe, S.E. (2010). Determinants of Microcredit and microfinance outreach to farmers in Abia State; A case study of National special programme on food security. MSc Thesis, Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike. Pp51.
- Ogunde O. & Akingbade W. A. (2012). Entrepreneurship training and education as strategic tools for poverty alleviation in Nigeria. *American International Journal of Contemporary Research*, 2, 148-156..
- Ogunde, O. J. K. (2000). Determinant of entrepreneurial emergence, behaviour and performance in Nigeria, Unpublished Doctorial Dissertation; Nigeria: University of Lagos.
- Ogunde, O. J. K. (2007). Introduction to Entrepreneurship Development, Corporate Governance, and Small Business Management. Lagos: Molofin Nominees.
- Ogunde, O. J. K. & Olayemi, O. O. (2004). Entrepreneurial Education and Social Economic Reconstruction; *Nigeria Journal of Curriculum and Institution*, 12: 1
- Ogwumike, F. O. (2002). An appraisal of Poverty and Poverty Reduction Strategies in Nigeria. *CBN Economic and Financial Review*, 39 (4), 21 -35.
- Ogunleye, A. O. (2000) *An Introduction to Research Methods in Education and Social Sciences*; Ondo, Sunshine International Publication (Nig.) LTD pp 132-133.
- Okeme, I. Alawa, A. D., & Akwagiobe, C. U. (2014). Entrepreneurial Skills Required by Secondary School Graduates for Economic Success in Cocoa Production in Ikom Local Government Area of Cross River State, Nigeria. *Journal of Education and Practice*, 5(16), 174-183.
- Okoli, V. B. N., Okereke, C. N., Onubuogu, G. C., & Esiobu, N. S. (2014). Analysis of Participating and Non-Participating Commercial Agriculture Development Project (CADP) Farmers in Pineapple Production in Awgu LGA, Enugu State, Nigeria; *Global Advanced Research Journal of Agricultural Science*, 3(8), 259-270.

- Oladoja, M. A., Adedoyin, S. E., & Adeokun, O. A. (2008). Training needs of fisher folks on fishing technologies. *Journal of Food Agriculture and Environment Science and Technology* 6, 1
- Olagunju, Y. A. (2004). Entrepreneurship and Small Scale Business Management. Ibadan University Press Plc.
- Oluwasusi, J. O., & Tijani, S. A. (2013). Farmers adaptation strategies to the effect of climate variation on yam production: a case study in Ekiti state, Nigeria. *Agrosearch*, 13 (2), 20-31.
- Oluwasusi, J. O., & Sangotegbe, N. S. (2012). Awareness and perception of climate variation among yam farmers in Ekiti State, Nigeria. *Journal of Environmental Extension*, 10: 46 – 51.
- Oluwatosin, F. M., & Shittu, G. A. (2014). Effect of socio-economic characteristics on the farm productivity performance of yam farmers in Nigeria. *New York Science Journal*; 7(2), 66-72.
- Oluremi, H. A., & Gbenga, M. A. (2011). Environmental Factors and Entrepreneurship, Development in Nigeria. *Journal of Sustainable Development in Africa*, 13 (4), 127-139.
- Onipede, S. (2003). Towards Creating an Environment for Sustainable Economic Growth in Nigeria, International Experience. [Online] Available: <http://www.economist.com/countries/Nigeria/profile.cfm?folder=profile-Economic%20structure>.
- Onoja, A. O & Agumagu, A. C. (2009). Econometric Modeling of the Effects of Economic Policies on food output in Nigeria under Obasanjo's Administration. *Journal of Sustainable Development in Africa*, 1(1), 98-112.
- Osuagwu, L. (2002). Entrepreneurship in a Developing Economy; Empirical evidence from Nigeria Business Organizations; *International Journal of Entrepreneurship*, 6: 19-32.
- Osuagwu, L. (2006). Small Business and Entrepreneurship Management. Lagos: Grey Resources Limited
- Okoedo-Okojie, D. U., & Onemolease, E. A. (2009). Factors Affecting the Adoption of Yam Storage Technologies in the Northern Ecological Zone of Edo State, Nigeria. *J Hum Ecol*, 27(2), 155-160.
- Okurut, F. (2008). Determinants of Microenterprise Performance in Uganda. *The IUP Journal of Agricultural Economics*, 5: 77 - 87.
- Okpara, J. O. (2011). Factors constraining the growth and survival of SMEs in Nigeria: Implications for poverty alleviation, *Management Research Review*, 34, 156-171.
- Okezie, A. I., Alex, O., & Asoluko, C. N. (2013). Challenge and Prospects of Entrepreneurship in Nigeria. *Academic Journal of Interdisciplinary Studies*, 2(5), 25-36.

- Onyebinama U. A. U., & Onyebinama I. C. (2010). Extension education on entrepreneurship development in Nigeria agriculture. *Agricultural journal*, 5(2): 63-69.
- Opafunso, Z. O., & Okhankhuele, O. T. (2014). An Assessment of the Impact of Government Intervention Projects on Poverty Alleviation/Reduction in Ekiti State, Nigeria. *Mediterranean Journal of Social Sciences*, 5(4), 274-281
- Okeke, A. M., Oraka, E. O., & Obasi, C. C. (2015). Analysis of Factors Influencing Entrepreneurship Behaviour among Yam Agribusiness Entrepreneurs in Benue State, Nigeria. *Journal of Business and Management*, 17 (10 Version I), 86-89.
- Osayande I., & Osabuohien, J. I. (2016). Effect of Yam-Based Production on Poverty Status of Farmers In Kabba/Bunu Local Government Area of Kogi State, Nigeria. *International Journal of Environmental & Agriculture Research*, 2 (6), 13-20.
- Omolayo, B. (2006). Entrepreneurship in Theory and Practice. In F. Omotosho, T.K.O. Aluko, O.I. Wale Awe and G. Adaramola (eds). Introduction to Entrepreneurship development in Nigeria. Ado-Ekiti: UNAD Press.
- Onakoya, A. B. O., Fasanya, I. O., & Abdulrahman, H. D. (2013). Small and Medium Scale Enterprises Financing and Economic Growth in Nigeria. *European Journal of Business and Management*, 5 (4), 130 – 136.
- Onubuogu, G. C., & Onyeneke, R. U. (2012). Market Orientation of Root and Tuber Crops Production in Imo State, Nigeria, *Agricultural Science Research Journals*, 2(5), 206-216.
- Onubuogu, G. C., Esiobu, N. S., Nwosu, C. S., & Okereke, C. N. (2014). Resource use efficiency of smallholder cassava farmers in Owerri Agricultural zone, Imo State, Nigeria; *Scholarly Journal of Agricultural Science* 7(8), 142-152.
- Onumadu, F. N., & Nwaobiala, C. U. (2012). Assessment of Youths Participation in Yam Miniset Technology in Ivo Local Government Area of Ebonyi State, Nigeria. *Journal of Economics and Sustainable Development*, 3 (3), 45 - 50.
- Ogbonna, M. C., Onyenweaku, C. E., and Nwaru, J. C. (2012). Economic Poverty Status and Food Demand in Rural Africa: Evidence from Yam Farmers in South East, Nigeria. *International Journal of Applied Research and Technology* 1 (3), 40 – 52.
- Othman, N., & Kutty, F. (2010). Entrepreneurship behaviour amongst Malaysian University students, *Pertanika Journal of Social Sciences & Humanities*, 18 (1), 23-32.
- Pages, E. R. & Markley, D. M. (2004). Understanding the environment for rural North Carolina. Center for Rural Entrepreneurship. Available at <http://www.ruraleship.org>.
- Peterman, N., & Kennedy, J. (2003). Enterprise education: Influencing student's perception of entrepreneurship. *Entrepreneurship, Theory & Practice*, 28 (2), 129-142.
- Petrin, T. (1994). Entrepreneurship as an economic force in rural development, Seventh FAO/REU International development Summer school, Germany, pp. 8-14.
- Peura, J., Siiskonen, P., & Vesala, K. M. (2002). 'Entrepreneurial Identity among the Rural Small Business Owner-Managers in Finland'. In: Tanvig H. W. (Ed.), *Rurality, Rural*

- Policy And Politics. In: A Nordic-Scottish Perspective. Esbjerg: Danish Centre For Rural Research and Development, Working paper 1/02.
- Philip, O. A., Kedinden, A. O., & Ganiyu, O. O. (2006) Principle and practices of crop production ideals and innovations publications, a division of BUM (Nigeria) Ltd. P 198.
- Phelan, C., & Sharpley, R. (2012). Exploring entrepreneurial skills and competencies in farm tourism. *Local Economy* 27(2), 103 -118.
- Pyysiäinen, J., Anderson, A., McElwee, G., & Vesala, K. M. (2006). Developing the entrepreneurial skills of farmers: Some myths explored. *International Journal of Entrepreneurial Behaviour and Research*, 12, 21-39.
- Pyykkönen, P. (1996). Maatalousyrityksen kasvuprosessi. (The growth process of the farm – Empirical study on structural change in Finnish agriculture and farm growth), Reports and discussion papers 141, Helsinki: Pellervo Economic Research Institute.
- Raman, M. H., Asmuni, A., Idris, K., Saad, S. & Azmin, V. A. (2014). An Assessment of Entrepreneurship Programme towards Modern Agri-Technology Usage in Serdang, Selangor, Malaysia. *Asian Social Science*, 10(22), 303 – 314.
- Rae, D. (2007). Entrepreneurship: from opportunity to action, Basingstoke: Palgrave Macmillan.
- Rantamäki-Lahtinen, L. (2002). Finnish Pluriactive Farms – the Common But Unknown Rural Enterprises. In Tanvig H. W. (Ed.), *Rurality, Rural Policy And Politics In a Nordic-Scottish Perspective*. Esbjerg: Danish Centre for Rural Research and Development, Working paper 1/02.
- Rauch, A., Wiklund, J., Lumpkin, G. T. & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33(3), 761-787.
- Roe-Odegard, I. K. (2004). Entrepreneurship in education in Norway. Retrieved August 06, 2014 [http://www.regjeringen.no/upload/KD/vedlegg/Grunnskole/Entrepreneurshipin Education in Norway](http://www.regjeringen.no/upload/KD/vedlegg/Grunnskole/EntrepreneurshipinEducation%20in%20Norway).
- Ronning, L. & Ljunggren, E. (2007). Community Entrepreneurship: Building Entrepreneurship-facilitating social capital, Nordland Research Institute, Norway.
- Rowe, W. G. (2001). Creating wealth in organizations: The role of strategic leadership. *Academy of Management Executive*, 15(1): 81–94.
- Rudmann, C. (Ed.) (2008): D9+D10: Entrepreneurial skills and their Role in Enhancing the Relative Independence of Farmers. Research Institute of Organic Agriculture, Frick, Switzerland.
- Samah, B., Silva, J. L., Shaffril, H. A., & Uli, J. (2010). Attitude towards contract farming among Malaysian Agriculture Learning Institution students, *American Journal of Economics and Business Administration*, 2(3), 266-271.

- Santacolomba, P. & Riveros, H. (2004). Alternatives to Improve Negotiation and Market Access Capabilities of Small-Scale Rural Entrepreneurs in Latin America. AGSR Working Document 4. Agricultural Management, Marketing and Finance service (AGSF). Agricultural Support Systems Division, Food and Agriculture Organization of the United Nations, Rome.
- Sathiabama, K. (2010). Rural women empowerment and entrepreneurship development. Available at: <http://www.microfinancegateway.org/Rural/%20Women%20Empowerment%20and%20Entrepreneurship%20Dev> (accessed on 02/06/2016).
- Sarasvathy, S.D., Dew, N., Velamuri, S. R., & Venkataraman, S. (2010). Three views of entrepreneurial opportunity. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research* (pp. 77-96). New York: Springer.
- Sarwoko, E., Surachman., and Hadiwidjojo, A.D. (2013). Entrepreneurial Characteristics and Competency as Determinant of Business Performance in SMEs, *Journal of Business and Management*, 7(3), 31-38.
- Schilling, M. A. (2005). *Strategic management of technological innovation*, Tata McGraw Hill Education.
- Scoones, I. (1998). *Sustainable Livelihoods: A Framework for Analysis*. Institute for Development Studies, University of Sussex. www.usider.org/tr/indir/ebooks/sustainable_rural.pdf. accessed on 5/4/09.
- Scoones, I. (2009). Livelihood perspectives and rural development. *Journal of peasant Studies*, 36 (1).
- Scorson, E. (2003). Encouraging Entrepreneurship in Rural Communities. *Journal of Extension*. 41, 6.
- Schiebel, W. (2002). Entrepreneurial Personality Traits in Managing Rural Tourism and Sustainable Business In: *Agrarmarketing Aktuell* 2002/2003, pp. 85-99.
- Schiebel, W. (2005). Entrepreneurial personality traits in managing rural tourism and sustainable business. *Rural Tourism and Sustainable Business, Aspects of Tourism*, 26, 287-304.
- Schultz, P. W., & Oskamp (1996). Effort as a moderator of the attitude behaviour relationship: general environmental concern and recycling. *Social Psychology*, 59, 375-383.
- Schoon, B., & Grotenhuis, R. (2000). Values of Farmers, Sustainability and Agricultural Policy. *Journal of Agricultural and Environmental Ethics*, 12, 17-27.
- Sekumade, A. B. & Osundare, F. O. (2014). Determinants and Effect of Livelihood Diversification on Farm Households in Ekiti State, Nigeria. *Journal of Economics and Sustainable Development*, 5 (5), 104 – 110
- Sherief, S. R. (2005). Entrepreneurship as economic force in rural development <http://www.Afric economic Analysis.org> (retrieved on 12th April 2016)

- Shaw, E. (1999). A guide to the qualitative research process: evidence from a small firm study. *Qualitative Market Research: An International Journal*, 2(2), 59-70.
- Shane, S. & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25, 217-227.
- Shane, S., Locke, E. A. & Collins, C. J. (2003). Entrepreneurial motivation. *Human resource management review*, 13(2), 257-279.
- Stevenson, L. (2005). Entrepreneurship Policy: Theory and practice. [Online] Available: <http://en.wikipedia.org/w/index.php.title = Entrepreneurship & old id=485430163>. (retrieval date: June, 5, 2016).
- Stathopoulos, S., Psaltopoulos, D., & Skuras, D. (2004). Rural entrepreneurship in Europe: A research framework and agenda. *International Journal of Entrepreneurial Behaviour & Research*, 10(6), 404-425.
- Stoner, J. A. F., & Gilbert R. F. (1995). Management. 6th Edition. Eaglewood Cliffs, New Jersey. Prentice Hall Inc.
- Silva, O. (2007). The Jack-of-All-Trades entrepreneur: Innate talent or acquired skill? *Economics Letters* 97: 118-123.
- Silva, J. L., Mohamad-Shaffril, H. A., Uli, J. & Abu-Samah, B. (2010). Socio-demography factors that influence youth attitude towards contract farming, *American Journal of Applied Sciences*, 7(4), 603 – 608.
- Sidhu, K. & Kaur, S. (2006). Development of Entrepreneurship among Rural Women. *Journal of Social Sciences*, 13 (2), 147-149.
- Siebert, R., Toogood, M., & Knierim, A. (2006). Factors Affecting European Farmers' Participation in Biodiversity Policies. *Sociologia Ruralis* 46, 318-340.
- Sinkaye, T. (2005). Agricultural Extension Participatory Methodologies and Approaches in Agricultural Extension in Nigeria, S. F. Afolayan (ed) Ilorin AESON, p220-233.
- Sonne, L. (2010). Pro-poor, entrepreneur-based innovation and it's in rural development. available at <http://www.merit.unu.edu/publications/wppdf/2010/wp2010-037.pdf>. (accessed on 30/11/2016).
- Sobalaje, A. J. & Adigun, G. O. (2013). Use of Information and Communication Technologies (ICTs) by Yam Farmers in Boluwaduro Local Government Area of Osun State, Nigeria. *Library Philosophy and Practice (e-journal)*, paper 1018: 1- 18
- Smit, A. B. (2004). Changing external conditions require high levels of entrepreneurship in Agriculture. In: Bokelman, W. (2004). Acta Horticulture No. 655, Proceedings of the 15th International Symposium on Horticultural Economics and Management, Berlin, Germany.
- Suleiman, A. S. (2006). The Business Entrepreneur; Entrepre- neurial Development, Small and Medium Enterprises, 2nd Edition, Entrepreneurship Academy Publishing, Kaduna.

- Svetlicic, M., Jaklic, A., & Burger, A. (2007). Internationalization of small and medium-sized enterprises from selected Central European economies. *Eastern European Economics*, 45(4), 36-65.
- Swedberg, R. (2000). The Social Science View on Entrepreneurship: Introduction and Practical Implications. In Swedberg, R. (ed.) *Entrepreneurship: The Social Science View*. New York: Oxford University Press, 7-44.
- Suzani, Z., Mirdamadi, S. M. & Mohamadi, I. M. (2010). The Role of Agricultural Extension on Incidence of farmers' Entrepreneurial characteristics: Case study of Kermanshah Province, Iran. *Euphrates Journal of Agriculture Science*, 2(3), 117-123.
- Subramanian, A. & Nilakanta, S. (1996). Organizational innovativeness: exploring the relationship between organizational determinant of innovation, types of innovations and measures of organizational performance. *Omega, International Journal of Management Science*, 24(6), 631-647.
- Tende, S. B. A. (2013). Government initiatives toward entrepreneurship development in Nigeria. *Global Journal of Business Research* 8, 109-120.
- Tsado, J. H., Olaleye, R. S., Nmadu, J., Ajayi, O. J. & Umar, I. S. (2010). Sustaining extension activities in yam production an assessment of the production constraints of farmers in Yagba Local Government Areas of Kogi State. Paper presented at the 11th annual national conference of national Association of Agricultural Economists held at Federal University of Technology Minna, Nigeria 30th Nov – 3rd December, 2010 Pp 99.
- Timmons, J. A. & Spinelli, S. (2003). *New Venture Creation For The 21 th Century* 9th ed McGraw-Hill, New York.
- Timmons, J. A. & Spinelli, S. (2004). *New Venture Creation: Entrepreneurship for the 21st Century*. Boston: McGraw Hill Irwin.
- Timmons, J. A. (1994). *New Venture Creation: Entrepreneurship for the 21st Century*. Burr. Ridge, IL: Irwin, 7-8.
- Udoh, E. J. & Etim, N. A. (2008). Measurement of Farm-Level Efficiency of Waterleaf (*Talinum triangulare*) Production among City Farmers in Akwa Ibom State, Nigeria. *Journal of Sustainable Development in Agriculture and Environment*, 3(2), 47 – 54.
- United Nations, (1995). *Report of the World Summit for Social Development* [online] Available at <<http://www.un.org/documents/ga/conf166/aconf166-9.htm>> (Accessed on 2 December 2016)
- UNECA (2009). *Economic Report on Africa. Challenges to Agricultural Development in Africa*. Addis Ababa, Ethiopia: United Nations Economic Commission for Africa and African Union.
- Unachukwu, G. O. (2009). Issues and Challenges of Development of Entrepreneurship in Nigeria. *African Research Review* 3 (5), 213-226.
- Urban, B. (2007). A framework for understanding the role of culture. *Acta Commercii*, 7, 82-95.

- Vaghely, I. P., & Julien, P. A. (2010). Are opportunities recognised or constructed?: An information perspective on entrepreneurial opportunity identification. *Journal of Business Venturing*, 25(1), 73-86.
- Van Woerkum, C. (2000). Interactive Policy-Making: The Principles. *Journal of Agricultural Education and Extension*, 6, 199 - 212.
- Van der Ploeg J. D. (2014). Dieci caratteristiche dell'agricoltura familiare. *BioAgricoltura*, n 143-144:28
- Verheul, I., Wennekers, S., Audretsch, D., & dan Thurik, R. (2001). An Eclectic Theory of Entrepreneurship. Tinbergen Institute Discussion Paper TI 2001-030/3. <http://www.tinbergen.nl>.
- Vesper, K. (1980). *New Venture Strategies*. Englewood Cliffs, New Jersey. Prentice Hall.
- Vesala, K. M. & Peura, J. (2002). *Entrepreneurial Identity among On-Farm Business Diversifiers*. University of Helsinki, Institute for Rural Research and Training, Mikkeli, Publications, 78.
- Vesala, K. M., Peura, J., & McElwee, G. (2007). The split entrepreneurial identity of the farmer. *Journal of Small Business and Enterprise Development*, 14(1), 48-63.
- Vik, J. & McElwee, G. (2011). Diversification and the entrepreneurial motivations of farmers in Norway. *Journal of Small Business Management*, 49(3), 390-410.
- Volk, T. (2008). Agriculture in Western Balkan Countries. Studies on the Agricultural and Food Sector in Central and Eastern Europe. IAMO. Leibniz-Institut für Agrarentwicklung in Mittel und Osteuropa.
- Von Stamm, B. (2008). *Managing Innovation, Design and Creativity* (2nd ed.). West Sussex: Wiley.
- Warren, P. (2002). Livelihood diversification and enterprise development: an initial exploration of concepts and issues FAO, LSP WP54. Available at: <http://www/ftp/ftp.fao.org/docrep/fao/008/j2816e/j2816e00.pdf> (accessed 02/09/2016).
- Wagner, J. (2003). Testing Lazear's jack-of-all-trades view of entrepreneurship with German micro data. *Applied Economics*, 10(11), 687 - 689.
- Wagner, J. (2006). Are nascent entrepreneurs 'Jacks-of-all-trades'? A test of Lazear's theory of entrepreneurship with German data. *Applied Economics*, 38(20), 2415 - 2419.
- Warren, M. (2004). Farmers online: drivers and impediments in adoption of Internet in UK agricultural businesses. *Journal of Small Business and Enterprise Development*, 11 (3), 371-381.
- Walzer, N. (2009). *Entrepreneurship and local economic development*, Lexington Books.
- Weissleder, L. M. & Heckelei, T. (2008). Analysing Major Determinants of European FDI into the Mediterranean Countries. Paper presented in the 12th Congress of the European Association of Agricultural Economists, Bonn, Germany.

- Wilson, G. A., Hart, K., (2000). Financial imperative or conservation concern? EU farmers' motivations for participation in voluntary agri-environmental schemes. *Environment and Planning A*, 32, 2161- 2185.
- Wickham, P. A. (2006). *Strategic Entrepreneurship*, Harlow: Pearson Education.
- Wiklund, J., & Shepherd, D. (2003). Knowledge-based Resources, Entrepreneurial Orientation, and the Performance of Small and Medium-sized Businesses. *Strategic Management Journal*, 24, 1307–1314.
- Williams, C. C. (2011). Entrepreneurship, the informal economy and rural communities: People and Places in the Global Economy. *Journal of Enterprising Communities*, 5(2), 145–157.
- World Bank (2007). World Development Report: Agriculture development for Development. Washington D.C. World Bank.
- World Bank (2008). Health Workers Needed: Poor Left Without Care in Africa's Rural Areas. Available online at: <http://go.worldbank.org/IUY3J2M0A0>, Retrieved on March 7, 2016.
- Wortman, M. S. (1990). A unified approach for developing rural entrepreneurship in the U.S. *Agribusiness*, 6, 221-236.
- Wiklund, J. & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing* 20(1), 71-91.
- Wolpert, J. D. (2002). Breaking out of the innovation box. *Harvard Business Review*, 80(8), 77–83.
- Yaaghubi, A., Chizari, M., Pezshkirad, G., & Foeli, S., (2009). Importance of farm management skills from the viewpoint of Wheat farmers in Tafresh Township. *Journal of Agricultural Economic and Development*, 17(66), 99–114.
- Yusuf, S. A. (2008). Assessment of Poverty among Urban Farmers in Ibadan Metropolis, Nigeria. *Journal of Humanties*. 24(3), 201-207.
- Zaknayiba, D. B., & Tanko, L. (2013). Costs and Returns Analysis of Yam Production among Small Scale Farmers in Karu Local Government Area, Nasarawa State, Nigeria. *PAT*, 9 (1), 73-80.
- Zamanipour, A. (2007). Agricultural Education in Iran: A Wrong Beginning and a Vague Future. *Agricultural Extension and Education Science Journal*, 3(1), 159-174.
- Zainalabidin M., Golnaz R., & Mad N.S. (2011). The Effectiveness of Entrepreneurship Extension Education among the FOA Members in Malaysia. *Current Research Journal of Social Sciences* 3(1), 17-21

**QUESTIONNAIRE
UNIVERSITY OF ILORIN**

**RESEARCH TITLE:
IMPACT OF YAM ENTREPRENEURIAL ACTIVITIES TO SUSTAINABLE
LIVELIHOOD OF FARMERS IN EKITI STATE, NIGERIA**

Dear Respondents,

The purpose of this interview schedule is to examine the above stated research title in Ekiti State of Nigeria. Your response would be used purely for research purposes and will be treated as confidential.

Thank you in advance

Yours sincerely,

Komolafe, S.E.

Note: Please tick (✓) or fill in the gap as appropriate and note that multiple responses is allowed where necessary

Name of Local government

Name of community

SECTION A: SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

1. Gender: Male [], Female []
2. Age: (years)
3. Marital Status: Single [], Married [], Divorced [], Widowed [], Separated []
4. Educational status: No formal education [], Adult literacy [], primary education [], Secondary education [], Tertiary []
5. Household size: (people)
6. Years of yam farming experience: (years)
7. Land tenure: Rent [], Gift [], Purchase [], and Inheritance []
8. Average land area cultivated per season (ha)

9. Cosmopolitaness: how often do you normally visit major towns? Rarely [], once a year [], once in six months [], once in three months [], once a week [], more frequently []
10. Aware of agricultural entrepreneurship?: Yes [], No []
11. Participation in other farming activities: please specify
12. Participation in off-farming activities: please specify

SECTION B: CHARACTERISTICS YAM ENTREPRENEURIAL ACTIVITIES OF RESPONDENTS

13. Participation in Yam Entrepreneurial Activities of respondents

Activities	Great Extent	Little Extent	Not Relevant
Processing			
Transporting			
Marketing			

14. Seasonal calendar of yam entrepreneurial activities.

INSTRUCTION: Please tick (√) as appropriate the month you mostly engage in the following activities.

Activities	Months of engagement
Land clearing	
Planting	
Mulching	
Sticking	
Pest and disease control	
Weeding	
Harvesting, transporting and marketing	
Storage	
Shortage	

Use 1 to 12 indicate January to December

Please tick (√) or fill in the gap as appropriate

15. Membership of any crop related enterprise group? Yes [], No []
16. Main source of initial capital: Own savings [], Family [], Friends [], Bank credit [], Cooperative [], Others specify.....
17. Main buyers of your products: Own/family consumption [], Consumer in the market [], Retailers [], Wholesalers [], Government [], Other, please specify:
18. Numbers of workers: (people)
19. Reason for involvement: Exclusively for home consumption with rarely any surpluses produced [], Mostly for home consumption, but with the intention of selling surpluses on the market [], Partly for the market and partly for home consumption [], Exclusively for the market [].
20. Number of hours devoted for the business per day; (hours)
21. Do you plan to expand the production? Yes [], No []
22. Access to yam entrepreneurial business training/Seminar?: Yes [], No []
23. Number of seminar/training attended: (number)
24. Training Organisation(s): please specify
25. Training Subject (s): General agro-enterprises [], improved crop production practices [] crop processing [], Agricultural Marketing and distribution [], Irrigation [], Savings and Records [], Soil fertility management [], Disease Control [], Name others
26. Source(s) of information:

Sources	Yes	No
Agricultural Extension agent		
Television		
Radio		
Internet/journals		
Cooperative/ farmers group		
Fellow crop farmers/maketers		

Private consultants		
If others, please indicate. 1.		
2.		
3.		

SECTION C: ATTITUDE TOWARDS YAM ENTREPRENEURIAL ACTIVITIES

Please, indicate your opinion on the following attitudinal statements in yam entrepreneurial activities

	Attitudinal statements	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	I believe that agri-entrepreneurship extension education will empower my ability for yam entrepreneurial business					
2	Ability to try improved practices/services is needed to become a successful agro-entrepreneur					
3	I often find new opportunities to explore in order to increase my income					
4	I am prepared to take risks and bear all uncertainty in farming					
5	It is possible to make a living out and escape poverty in yam entrepreneurial business					
6	I would rather own a yam entrepreneurial business than earn a higher salary working for someone else					
7	Fulltime commitment and continuous extension training to crop enterprise is a key to success					
8	I can pay any amount to seek for extension information to improve my yam entrepreneurial business					
9	Adding value to my yam tubers products/services will increase sales and income					
10	An agro-entrepreneur should have commercial characteristics to determine success					
11	I learn from my setbacks and move on					
12	I plan what to do according to the schedule					
13	I am positive about myself and my					

	yam entrepreneurial business that I will be successful					
14	Adopting innovative practices cannot multiply my income					
15	I do not believe in yam farming business, so I don't encourage others to start it					
16	Ability to make timely decision does not determine success in agri-entrepreneurship					
17	I do not have time to be thinking of creativity for my yam entrepreneurial activities					
18	I have no ambition for running my yam entrepreneurial activities.					

SECTION D: ACCESS TO LIVELIHOOD CAPITALS AND ASSETS

Please, indicate your opinion on your level of access to the following input resources/capitals needed for yam entrepreneurial activities

Input resources/capital needed for yam entrepreneurial activities	Level of Access to capital		
	No access	Restricted	Free access
Financial Assets			
Income/saving able to purchase inputs			
Access to credit loan			
Physical Assets			
Rent/Purchase of farm machinery			
Purchase of yam processing equipment			
Purchase of yam cultivation inputs			
Construction/maintenance of good road to farm site			
Rent/Purchase of transport for yam product distribution/marketing			
Payment of shop rent for sales of yam produce/processed products			
Access to health care facilities			
Access and payment of mobile phone			

Access to cemented and zinc roof house or payment of house rents			
Purchase of house furniture			
Purchase of car/motorcycle/bicycle			
Access/ purchase of power generator			
Purchase of television			
Purchase of Radio			
Access to clothing			
Social Assets			
Ability to networks and contact with other yam entrepreneurs, NGOs and Agricultural Extension agents			
Finance traditional weeding and Payment of bride price			
Participation in social gathering			
Satisfaction as yam entrepreneur			
Decision making ability			
Membership of yam related associations			
Human Assets			
Educational attainment			
Health condition			
Yam entrepreneurial knowledge & skill competency			
Experience in yam related enterprises			
Natural Assets			
Access safe drinking water			
Access to water for yam irrigation farming			
Rent/purchase/free access to fertile land for yam cultivation			
Access to well water for processing food			
Favourable weather variability for yam			

entrepreneurial activities			
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Please, indicate your opinion on how yam entrepreneurial activities had contributed to your access to the following livelihood assets

ACCESS TO ASSETS	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Financial Assets					
Income/saving able to meet basic needs					
Access to credit loan					
Physical Assets					
Rent/Purchase of farm machinery					
Purchase of yam processing equipment					
Purchase of yam cultivation inputs					
Construction/maintenance of good road to farm site					
Rent/Purchase of transport for yam product distribution/marketing					
Payment of shop rent for sales of yam produce/processed products					
Access to health care facilities					
Access and payment of mobile phone					
Access to cemented and zinc roof house or payment of house rents					
Purchase of house furniture					
Purchase of car/motorcycle/bicycle					
Access/ purchase of power generator					

Purchase of television					
Purchase of Radio					
Access to clothing					
Social Assets					
Ability to networks and contact with other yam entrepreneurs, NGOs and Agricultural Extension agents					
Finance traditional weeding and Payment of bride price					
Participation in social gathering					
Satisfaction as yam entrepreneur					
Decision making ability					
Membership of yam related associations					
Human Assets					
Educational attainment					
Health condition					
Yam entrepreneurial knowledge & skill competency					
Experience in yam related enterprises					
Natural Assets					
Access safe drinking water					
Access to water for yam irrigation farming					
Rent/purchase/free access to fertile land for yam cultivation					
Access to well water for processing food					
Favourable weather variability for yam entrepreneurial activities					

SECTION E: Respondents' knowledge of yam entrepreneurial skills

Tasks	Yes	No
Yam cultivation skills		
Improved land preparation		
Selecting suitable fertile land for yam production		
Performing improved yam miniset technology		
Mulching		
Sticking		
Sourcing (rent/purchase) use of necessary farm tools/machinery		
Operating farm machinery		
Dose and method of application of agro-chemicals and fertilizer.		
Recommended row to row and plant to plant spacing		
Operating Knapsack sprayer		
Appropriate time of harvesting		
Processing yam tubers into different products and value addition		
Methods of storing yam tubers and processed products		
Recommended dose and application of pesticide, insecticide and weedicide		
Opportunity skills		
Identifying, investigating and evaluating opportunities		
Sourcing for fund to finance yam farming and processing activities		
Value addition skills in processing yam to different products		
Packaging skills of yam produce and processed products		
Market and customer orientation		
Management skills		
Keeping basic records of farm income and expenses		
Time management skills		
Managing/supervision skills of hired farm labours and their needs		
Planning, prioritising and organising yam farming tasks		
Assessing and managing farm risk		
Improving efficiency, cutting costs and increase productivity		
Problem solving skills		
Skills in decision making, control and negotiation		
Precautionary practices against yam farming related hazards		
Skills for ensuring full security of yam enterprises		
Co-operation / networking skills		
Identifying and cooperating with other players such as;		
1. Agric. extension agents		
2. Customers		
3. farmers' cooperative group		
4. support NGOs		

5. support government bodies		
Effective networking and communication with other players through electronic networking tools		
1. Facebook		
2. Electronic mailing address		
3. Whatapp		
4. 2go		
5. SMS		
Team working skills		
Training and developing others		
Motivation and Leadership of team skills		
Customer/marketing skills		
Skills for transporting yams produce/products securely to the market		
Skills of identifying and understanding the demand of the buyers		
Skills of finding distribution channels		
Avoiding failing to meet buyer's specification		
Persuasive communication and negotiation skills		
Fix price for different yam produce/processed product		
Keeping of sales record skills		
Becoming more effective in satisfying the need of buyers that buys yam produce		

SECTION F: Capacity Building Needs on yam Entrepreneurial Task

Tasks	Frequency of Performance	Importance of task	Difficulty in handling task	Proficiency level
Yam cultivation skills				
Improved land preparation				
Selecting suitable fertile land for yam production				
Performing improved yam miniset technology				
Mulching				
Sticking				
Sourcing (rent/purchase) use of necessary farm tools/machinery				
Operating farm machinery				
Dose and method of application of agro-chemicals and fertilizer.				
Recommended row to row and plant to plant spacing				

Operating Knapsack sprayer				
Appropriate time of harvesting				
Processing yam tubers into different products and value addition				
Methods of storing yam tubers and processed products				
Recommended dose and application of pesticide, insecticide and weedicide				
Opportunity skills				
Identifying, investigating and evaluating opportunities				
Sourcing for fund to finance yam farming and processing activities				
Value addition skills in processing yam to different products				
Packaging skills of yam produce and processed products				
Market and customer orientation				
Management skills				
Keeping basic records of farm income and expenses				
Time management skills				
Managing/supervision skills of hired farm labours and their needs				
Planning, prioritising and organising yam farming tasks				
Assessing and managing farm risk				
Improving efficiency, cutting costs and increase productivity				
Problem solving skills				
Skills in decision making, control and negotiation				
Precautionary practices against yam farming related hazards				
Skills for ensuring full security of yam enterprises				
Co-operation / networking skills				

Identifying and cooperating with other players such as;				
6. Agric. extension agents				
7. Customers				
8. farmers' cooperative group				
9. support NGOs				
10. support government bodies				
Effective networking and communication with other players through electronic networking tools				
6. Facebook				
7. Electronic mailing address				
8. Whatapp				
9. 2go				
10. SMS				
Team working skills				
Training and developing others				
Motivation and Leadership of team skills				
Customer/marketing skills				
Skills for transporting yams produce/products securely to the market				
Skills of identifying and understanding the demand of the buyers				
Skills of finding distribution channels				
Avoiding failing to meet buyer's specification				
Persuasive communication and negotiation skills				
Fix price for different yam produce/processed product				
Keeping of sales record skills				
Becoming more effective in satisfying the need of buyers that buys yam produce				

Note: Checklist for enumerator use only

Code	Frequency	of	Importance of	Difficulty in	Proficiency to apply
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	Performing task	task	handling task	task
1 =	Seldom	Marginally important	Easy	cannot do at all
2 =	Occasionally	Moderately important	Moderately difficult	can do less than half of the task
3 =	Weekly to monthly	Very Important	Very difficult	can do more than half but less than total
4 =	Daily to weekly	Extremely important	Extremely difficult	can do total but cannot maintain time schedule
5 =	Daily	-	-	can do within time schedule

SECTION F: Constraining Vulnerability Factors to Sustainable Entrepreneurial Livelihood Activities of Yam Farmers

Constraints	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Lack of government policies that promotes agri-prenueship among rural farmers					
Frequent change of government and their agricultural revolution policies					
No access to financial credits and borrowing sources to promote commercial farming in the rural area					
Lack of extension education on agricultural entrepreneurship skills among rural farmers					
Poor access to network/contact with agric. extension agents and other yam farmers					
Frequent illness/bad health status					
Lack of access to subsidized input					
Gender discrimination in accessing inputs					
Flood					
Drought					
Pest and diseases infestation					
Crime and theft					
Destruction of yams by flock of cattle and herdsmen conflict					
Communal/family conflict on farm land					
Scarcity of appropriately skilled farm labour					
High cost of hired labour					
Identifying input suppliers					
Unstable price and poor pricing of yam produce					
Poor access to market information					
Long distant to market					
Irregular payment from buyers					
Inadequate farmland					
Poor electricity supply					

Bad road network/structure					
Poor access to yam cultivation equipment					
Poor access to yam processing equipment					
Unfavourable vegetation of the area for yam cultivation					
Unfavourable condition of climate					
Postharvest/storage pest damage					

Thank you!

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For enumerator only:

Name of enumerator

Phone number of enumerator

Date of interview

Figure 6: Cross section of Focus Group Discussion with yam farmers at Erinfun Ekiti State



Source: Field survey, 2016

Figure 7: Cross section of Focus Group Discussion with yam farmers at Erinfun, Ekiti State



Source: Field survey, 2016

Figure 8: Interview with farmers who transported yam to market at Erinfun Ekiti State



Source: Field survey, 2016

Figure 9: Interview section with farmers at Efrinfun Ekiti State



Source: Field survey, 2016

Figure 10: Interview section with farmers marketing their yam at Odo-oro, Ekiti State



Source: Field survey, 2016

Figure 11: Interview section with farmers at Odo-oro, Ekiti State



Source: Field survey, 2016

Figure 12: Interview section with farmers at Odo-oro, Ekiti State



Source: Field survey, 2016