Entrepreneurial Skills Required by Women Farmers in Processing Soybean (Glycine Max.) for Poverty Alleviation in Benue State, Nigeria

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Abstract: The study investigated entrepreneurial skills required by women farmers in processing soybean (Glycine max.) for poverty alleviation in Benue State, Nigeria. Five research questions guided the study and four research hypotheses were tested at 0.05 level of significance. A survey research design was adopted for the study. The population of the study was 331,522 which included 331,500 farmers and 22 agricultural extension agents. Sample size was 400. A 61-item structured questionnaire titled Entrepreneurial Skills Required in Processing Soybean for Poverty Alleviation in Benue State, Nigeria Questionnaire (ESRWFPSPABSNQ) was developed and validated which was used for data collection. Three experts carried out face and content validation. The reliability coefficient of the instrument obtained was 0.884. The data collected from the field were analyzed using mean and standard deviation (SD) to answer the research questions and t-test to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that all the items were important, all the fifteen basic skills were required by both women farmers and the agricultural extension agents for proper planning of soybean processing enterprises. Out of thirteen equipment listed, only four of them were identified as having 100% utilization for effective soybean processing by women farmers and agricultural extension workers. Fifteen processing skills were needed for processing soybean products. Also, eight entrepreneurial skills were required by women farmers and agricultural extension agents for packaging processed soybean products for poverty alleviation in Benue State and ten entrepreneurial skills were required by women farmers and agricultural extension agents in marketing of soybean products for poverty alleviation. Based on the result, it was recommended that the identified entrepreneurial skills should be utilized by skill acquisition Centre's for training women who wish to engage in soybean processing for income generation.

Keyword: Entrepreneurial skills, women farmers, poverty alleviation, processing soybean (Glycine max.).

1.0   INTRODUCTION

1.1   Background to the Study

A considerable number of women are engaged in the activities of farming in Nigeria just as in other such related societies. About 68% of women work as farmers, farm workers and natural resource managers (Onyemobi, 2000). In doing so, they contribute to national agricultural output,

maintenance of the environment and family food security. In Nigeria, the involvement of women in farming has attracted greater attention in recent years. This is in recognition that women play very significant roles in Nigeria agricultural production, processing and utilization but are constrained under the unified extension system by socio-cultural barriers, and by the current approach that rely almost exclusively on a network of contact farmers that are over 95% male farmers; little research on products - fruits, vegetables, small livestock which are mainly the responsibility of women farmers (Nnadozie & Ibe, 2000). Women farmers play vital roles in food production and food security. They account for 70% of agricultural workers, 80% of food producers, and 100% of those who process basic foodstuffs and they undertake from 60% to 90% of the marketing (Fresco, 2018). Four of ten agricultural workers in the world are women (United Nations, 2008). Women take part actively in farming activities and in processing farm products, in addition to their domestic and reproductive responsibilities. Though, women constitute a large portion of the farming population, women's possibilities in farming are hindered by lack of adequate funding, knowledge and skills, among processing activities geared towards converting the grains into diverse products. In essence, for effective farming practice by women for poverty alleviation, there is need for appropriate acquisition of knowledge on crop farming including soybean.

The development of societies, in general, depends on the knowledge level of the citizenry. People who have the required education on the needed entrepreneurial skills tend not to be useful to them alone but to the society in general. In agriculture, Mbam and Nwibo (2013), reported that women farmers are becoming more entrepreneurial in developing new skills and functional capabilities in order to be competitive. In as much as agriculture is the main source of living for the populace, there is still the problem of poverty in the country. For instance, Firlej as cited in Mbam and Nwibo (2013), hold that despite the potential of agriculture in any economy, poverty and hunger have remained serious threats and obstacles to the development of societies. Thus, with the exceptions of few cases, the role of entrepreneurship and innovation has been given little emphasis in agriculture in spite of the fact that it is a critical aspect of value-added agriculture. In the report of Warren (2004), some studies have dealt with entrepreneurship as business activities related to planting, harvesting, processing and marketing of farm products but only the primary production on farms has been visible, neglecting entrepreneurial aspects that could boost farm business.

Entrepreneurship is the process of creating something new with added values by devoting the necessary time and effort assuming the accompanying financial, psychological and social risks and receiving the resulting rewards of monetary and personal satisfaction and independence (Chinonye, 2010). Entrepreneurship refers to a creative and innovative response in economic and social ventures and involves setting up business ventures through willingness and ability of an individual to explore investment opportunities and being able to run it successfully, through making it profitable or suffering loss of invested capital and involves combining resources to increase value and introducing change and innovation into the production process and creating wealth and employment opportunities (Pantakar & Mehta, 2014). Thus, entrepreneurship skills enhance the capacity to harness the right quantity, quality and combination of resources that are consistent with profit making under risks and uncertainty. The skills could enable individuals such

as women farmers to identify latent business opportunities, together with the ability to organize the required resources with which to profitably take advantage of such opportunities in the face of calculated risk and uncertainties (Cooney, 2012).

In essence, there are great potentials in the agricultural sector for poverty alleviation via soybean farming activity, however most of the entrepreneurial skills that are required for effective development of the sector are lacking. Sousa, Correia and Almeida (2014) affirmed that the processing of the women farmer entrepreneur embraces the idea that entrepreneurial characteristics can be acquired/ learned throughout life, in this study through Agricultural Extension Agents. According to Sousa *et al. (*2014)*,* based on different studies a range of characteristics are associated to entrepreneur profile which are: (i) Ability to achieve goals, particularly planning and autonomy to achieve results (ii) Self-confidence to achieve defined goals and overcome obstacles (iii) Sense of responsibility for the success or failure of business (iv) Ability to learn using failure as a learning experience in a positive way (v) Ability to develop and maintain a successful business through hard work and effort. (vi) Ability to develop innovative new approaches to the market, new concepts, new products and services (vii) Capacity of initiative, identifying and implementing new business opportunities (viii) Ambition to achieve goals (ix) Persistence to face obstacles and reset strategies (x) Ability to establish a network of contacts, to develop and maintain business relationships (xi) Social and relational skills in order to establish interpersonal relationships (Sousa, Correia and Almeida, 2014).

It is important for women farmers to know how to reduce the risk, seek for new sources of innovation, have skills in the use of creative tools and learn from the market, other entrepreneurial skills required for general processing of farm produce, especially soybean. These skills and others are very important that every agricultural entrepreneur or potential entrepreneurs must acquire for development and sustenance of the agricultural sector and for poverty alleviation. Poverty is considered to be the state of not having enough material possessions or income for a person's basic needs such as food, clothing and shelter. Based on the United Nations' (2015) definition of poverty, as highlighted in both the millennium development goals (MDGs) and the sustainable development goals (SDGs), it is a situation of people living on less than $1.25 (£0.83) a day. Causes of poverty, as identified by the Borgen Project (2017), include government corruption, lack of economic infrastructure, poor access to education and poor access to health care. Broadly, poverty can be conceptualized in four ways: Lack of access to basic need/goods; Lack of or impaired access to productive resources; insufficiency of common resources as well as a result of exclusion mechanism (Olayemi, 2012). This, therefore, calls for deployment and implementation of programs/activities that alleviate poverty in our societies.

Soybean is an annual crop that belongs to the family of Leguminosae, sub-family Papilionoideae and tribe Phaseolae. It is a diploid with chromosome number $2n=2x=40$ (Warren, 2004). Soybean (*Glycine max.)* occupies a premier position among agricultural crops, being the most important source of good quality concentrated proteins as well as vegetable oil. Seeds of soybean have been used in Asia and other parts of the world for many centuries to prepare a variety of fresh, fermented and dried foods. Soy-based nutritious food products such as tofu, soy milk, soy sauce and miso among others have been developed for human consumption while oil extracted soy

meal is used as a nutritious animal feed. Besides its use for domestic purposes, soy oil finds multifarious uses in industries related to production of pharmaceuticals, plastics, papers, inks, paints, varnishes, pesticides and cosmetics. Recently, use of soy oil as biodiesel has opened up another possibility of renewable sources of energy for industrial uses. As a legume crop, soybean is capable of utilizing atmospheric nitrogen through biological nitrogen fixation and is therefore less dependent on synthetic nitrogen fertilizers. Keeping in view its vast utilities, there is ample justification for its significant involvement in major crop improvement programs throughout the world (Pratap, Kumar and Solanki, 2012).

Considered as a miracle crop, Soybean is the world's foremost provider of vegetable protein and oil. The bushy, green soybean plant is a legume related to peas, groundnuts (peanuts) and alfalfa. Soybean is the most important grain legume in the world in terms of production and use, it is important in Africa and Nigeria for three key reasons namely; employment and incomes to people (farmers, processors, marketers), nutrition and health benefits and the role of sustainable farming systems. The choice of soybean for this study is justifiable because soybean is commonly cultivated in Benue (the number one producer in Nigeria), diverse products from its high economic value and increasing acceptability of soybean. Soybean processing concerns the various activities of converting the grain into other respective end-products. Processed soybean product includes: soy milk, soybean oil, soy flour, soy cheese, soy yoghurt, *dadawa* among others. Some of the processed soy products lowly available like soy fortified cereal based products and fermented seeds should have been made readily available. In processing Soybean to any end-product, the activity of peeling is one of the key processes. Peeling can reduce the-heat resistant bacteria in the soy, improve the flavour of products, limit the foaming ability, shorten the heating time required for the inactivation of lipoxygenase, reduce the thermal denaturation of stored protein and prevent enzyme browning. On the other hand, application of edible oil pressing, peeling soybean can improve the protein content of bean and improve the production capacity and oil yield of follow-up activity that may be required (International Institute of Tropical Agriculture, 2011).

The cleaning aspect of soybean process enables the removal of potential contaminants and impurities from the beans. The nature of cleaning, in this regard, depends on the end product of the processed Soybean. For instance, processing the product to flour or liquid could determine the technology-traditional or modern-to be used. There are two main methods of processing soybeans: extraction and mechanical processing. Extraction processing involves the use of chemical reactions to expunge fats and carbohydrates from soybeans. Mechanical processing includes crushing, sorting, grinding, compressing and high temperature processing. However, both methods can be combined (BRONTO Soybean Processing Line, 2021). Packaging materials and techniques for soybeans to ensure freshness and prevent spoilage. Sustainable and eco-friendly packaging options for soybean products. Packaging regulations and standards for soybean exports and imports. While Soybean Marketing trends and analysis for soybean products at local, national, and international levels, Strategies for branding and promoting soybean products to target markets, Consumer preferences, and behavior related to soybean products. Digital marketing and e-commerce strategies for soybean products. Soybean Equipment Machinery and equipment used in soybean planting, harvesting, processing, and packaging,

Advances in technology for efficient soybean production and processing, Equipment maintenance, troubleshooting, and safety practices, Cost analysis, and return on investment for soybean farming equipment. The preceding revelations have provided an insight into the activity of soybean processing approaches, which women farmers can adopt. It is also opinionated that there exist certain entrepreneurial skills that women require in soybean processing for poverty alleviation. However, there is uncertainty on the nature of women farmers' knowledge of entrepreneurial skills regarding Soybean processing for poverty alleviation across some societies such as Nigeria. It is against this backdrop that this research seeks to assess the entrepreneurial skills required by women farmers in processing soybean (*Glycine max*.) for poverty alleviation in Benue State, Nigeria.

1.2   Statement of the Problem

In order to ameliorate the situation, there is need for concerted efforts from the government and development partners in form of interventions. The researcher observed that in the study area Benue State, women do not have the required skills in processing soybean because the availability of processed soybean products are scarce due to lack of processing skills required by these women in processing soybean. One of the ways to ascertain the skills and growth of women is through entrepreneurial skills. It, therefore, becomes imperative for the researcher to investigate entrepreneurial skills required by women farmers in processing soybean (*Glycine max*.) for poverty alleviation in Benue State, Nigeria.

1.3   Objectives of the Study

The general objective of the study was to investigate entrepreneurial skills required by women farmers in processing soybean (*Glycine max.)* for poverty alleviation in Benue State. The specific objectives of the study were to:

i.   ascertain the entrepreneurial skills required by women farmers and agricultural extension agents in planning for soybean processing enterprise for poverty alleviation.

ii.   determine the entrepreneurial skills required by women farmers and agricultural extension agents in identifying equipment of processing soybean for poverty alleviation.

iii.   ascertain the entrepreneurial skills required by women farmers and agricultural extension agents in processing soybean products for poverty alleviation.

iv.   determine the entrepreneurial skills required by women farmers and agricultural extension agents in packaging processed soybean products for poverty alleviation.

v.   examine the entrepreneurial skills required by women farmers and agricultural extension agents in marketing soybean products for poverty alleviation.

The study will be of benefit to women soybean farmers, governments, non-governmental organizations (NGOs), agricultural science teachers, extension agents, the general public and other researchers. The findings of the study will be of great importance to women farmers as it

will create awareness of the entrepreneurial skills required in processing soybean. The acquisition of entrepreneurial skills in soybean processing will go a long way in alleviating poverty, especially among women. The results of the study will also be of benefit to the government as it will provide information to the government in formulating policies that will promote the growth and development of soybean processing in Nigeria and establishment of programs that will directly involve women farmers to maintain high quality products and adopt new entrepreneurial skills that will see the women farmers gain a competitive edge over their competitors. It is hoped that the findings of this study will help non-governmental organizations in collecting usable and reliable data required to support advocacy by various interest groups for a better and practical education system that will meet the needs of students and labor market. This may highlight the areas of inadequacy that the planners will intervene to address identified entrepreneurial skills gap.

More so, the study will be of great importance to agricultural science teachers and extension agents as the findings will provide them with the relevant knowledge in soybean processing. The findings of the study will be of relevance to the general public as it will be uploaded online where members of the public throughout the world can access information on entrepreneurial skills required by women farmers in processing soybean for poverty alleviation.

Furthermore, the findings of the study will be of significance to scholars and researchers as it will therefore serve as a handy literature and empirical study for those embarking on similar researches. The findings will stimulate further research and expand the frontier of knowledge in this area of study.

2.0   LITERATURE REVIEW

This section presents a review of the literature related to the topic of the study under major headings, namely; the theoretical framework, conceptual framework, review of related empirical studies and summary of literature.

2.1   Theoretical Framework

Human capital theory was utilized to provide the theoretical framework for this current research.

2.1.1. Human Capital Theory by Mincer (1958)

Human capital theory was postulated by Mincer (1958). It proposes that human beings can increase their productive capacity through greater education and skills training. Human capital theory is a theory of earnings, one of the major determinants of poverty. This theory explains both individuals' decisions to invest in human capital (Education and training) and the pattern of individuals' lifetime earnings. Individuals can gain skills that will make them more productive. The productivity leads to greater earnings. Training is regarded as an investment as it involves costs and benefits which can be assessed by using financial criteria such as present value and the

internal rate of return. Human capital theory is based on neo-classical theories of labor markets, education and economic growth. It takes for granted that employees are productive resources and attempts to find out whether highly trained people are more productive than other personnel. The role of human capital is widely discussed in economic development, productivity analysis, innovation, public policy and education. In other words, organizations are keen to cover this training cost, as they will obtain almost all the returns from the enhanced productivity by the new skills acquired. The theory is relevant to the study because it proposes that individuals can gain entrepreneurial skills that will make them more productive. When women farmers are well trained on entrepreneurial skills required in processing soybean for poverty alleviation, they earn money and are lifted out of poverty.

2.2   Conceptual Framework

The following concepts that are related to the study were discussed on the following heading: Skills, entrepreneurial skills, soybean processing, soybean products, packaging soybean products, soybean marketing, poverty and poverty alleviation, agricultural entrepreneurship skills and poverty alleviation in Nigeria, review of empirical studies and summary of literature reviewed.

2.2.1   Skills: Skills is defined by Agboeze (2010), as professional ability to perform or carry out a task very well. In the context of this study, skill is the ability required by women in agriculture to enable them perform task efficiently such as in the production of soybean. If the skill in soybean production is acquired by women in agriculture, it will lead to massive production of soybeans for poverty alleviation. Skills are the learned abilities to perform actions with determined results with good execution often within a given amount of time, energy, or both. Skills can often be divided into domain-general and domain-specific skills. Skills are the expertise or talent needed in order to do a job or task. Job skills allow you to do a particular job and life skills help you through everyday tasks. There are different types of skills that can help people succeed at all aspects of their life whether school, work, or even a sport or hobby (Tomaszewski, 2021).

2.2.2 Entrepreneurial skills: Entrepreneurial skills according to Adeyemo (2009), are developed competencies required to initiate and sustain a business venture. They are basic skills necessary to enable you start, develop, finance and succeed in business. Salgado-banda (2005), viewed entrepreneurial skills as abilities to have self-belief, boldness, for internal management and external advancement of the firm in all aspects. Olagunju (2004), described Entrepreneurial skills as the ability of an individual to exploit an idea and create enterprise not only for personal gain but also for social and development gains. Hisrich and Peters (2002), also described Entrepreneurial skills as the ability to create something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence. Therefore, Rychem and Solagnik (2003), noted that entrepreneurial skills are acquired through training that emphasizes the acquisition and development of appropriate knowledge and skills that will enable an individual to maximize the resources around him within the limits of his capability. Entrepreneurial skills consist of effective utilization of ideals, information and facts that help a learner developed competencies, marketing, services, or being productive employee of

organizations (Olibie and Obidike, 2008). In this study, Entrepreneurial skills are the basic skills required by women farmers in processing soybean for poverty alleviation and succeed in soybean enterprises and these skills are required by the women farmers through entrepreneurship training.

2.2.3   Women farmers in Soybean Processing

Women farmers who take part in soybean processing require general processing skills, whether modern or local and passes through a number of stages. Soybean processing demands that certain relevant things should be taken into consideration. According to Vesala and Peura (2003), these are: preparing to plant, land preparation, choice of variety, seed cleaning and preparation, soybean germination test, planting, date of planting, seed rate, seed dressing, plant spacing and sowing, fertilizer, soil fertility enhancement, pests and diseases, weeds and their control, Insects and their control, diseases and their control, harvesting soybean, postharvest operations, threshing and storage. These elements in the stages of soybean processing which Vesala and Peura noted encompass the pre-planting, planting, harvest and post-harvest phases of Soybean processing. Some important elements in the post-harvest stage of soybean which Vesala and Peura did not include, are the marketing attributes of soybean**.**

2.2.4   Women Farmers in Processing Soybean products

> *Soy milk is obtained by grinding, soaking and straining soybeans creates a mild-tasting liquid known as soy milk. Soy milk is usually a suitable replacement for dairy milk. Vanilla and chocolate soy milk are often sold alongside unflavoured soy milk, which are all typically packaged in aseptic containers. A 1-cup serving of soy milk has 104 calories, 6 grams of protein and 3.5 grams of fat, on average. Fortified soy milk is a good source of calcium, iron, vitamin B-12 and vitamin D (Gandhi, 2009). Soybean curd or tofu: This is created by curdling soy with a coagulant. Tofu, which has minimal flavour can absorb seasonings and flavourings easily. Firm tofu is dense and useful in stir fries or soups. Soft tofu is mushier and works in place of yogurt smoothies. A 1/2-cup serving of firm tofu has 88 calories, over 10 grams of protein and 5 grams of fat. Creamy desserts using tofu are common in grocery stores as are plain blocks of tofu with varying firmness. Most Asian markets carry fresh tofu, which has a smoother texture and flavor (Nishinari and Wang 2018).*

2.2.5   Women Farmers in Packaging Soybean Products

Soybean just as other agriculturally processed related products can be packaged in various methods, which the Ministry of Food Processing Industries of India (2020), documented as pouch, metal can, layered cartons, glass bottles, sacks, plastics bottles, sealed nylon/polythene bags and other plastic containers.

2.2.6   Women Farmers in Marketing Soybean

Marketing according to Kolter (2003) is a social process by which individuals and groups obtain what they need and want through creating, offering and freely exchanging products and services of value with others. In the view of Olukosi, Isitor and Ode (2007), agricultural marketing can be defined from micro and macro viewpoints. From the micro view point, agricultural marketing is expressed as the performance of all business activities which direct the forward flow of goods and services to consumers in order to accomplish the products objectives. From the macro view point, it seeks to examine the total system of economic activities concerned with the flow of agricultural products from producers to final consumers, the kind of institutions and the price making mechanisms that guides those flows, the interactions among consumers, agricultural business firms, farmers and even government that determine the level of expenditure and the sharing of those expenditure as income to market participants.

2.2.7   Poverty and Poverty Alleviation

Poverty can be conceptualized in four ways: Lack of access to basic need/goods; Lack of or impaired access to productive resources; inefficient of common resources as well as a result of exclusion mechanism (Olayemi, 2012). Poverty means the lack of income or shortage of assets; the lack of competence, confidence, disempowerment, etc.; has also deprivation of national currency; it is also common to speak of a poor understanding, or culture, or spirit (Singer, 2010). Poverty may arise from low productivity of the households and they face financial constraints and lack of other incentives of entrepreneurship (Adenutsi, 2009). The World Bank indicates that poverty is categorized as both absolute and relative (Misango and Ongiti, 2013). When poverty is said to be absolute, it describes as a lack of resources to meet the physical needs for survival, a lack of basic security, the absence of one or more factors that enable individuals and families to assume basic responsibilities and to enjoy fundamental rights (Ali and Ali, 2013).

2.2.8   Agricultural Entrepreneurship Skills and Poverty Alleviation in Nigeria

It has been reported by World Bank in 1996 that poverty in Nigeria is becoming 'widespread and severe' (Kudi, Usman, Akpoko and Banta, 2008) and in spite of the Nigeria's vast resources, the country is known for her low Gross Domestic Product (GDP), low per capital income, high unemployment rate, low industrial utilization capacity, high birth rate and subsistence agricultural dependent. According to Ocar (2003), Nigeria ranks number 148th in 2002 according to Human Development Index rating. It was further reported that the Nigeria's basic indicators placed the country among the 26 poorest countries in the world. The proportion of Nigerians living below the poverty line of one dollar a day has increased dramatically during the last two decades. In the year 2000, more than 70% of Nigerians were estimated to believing below the internationally defined poverty line (Ocar, 2003). Furthermore, in the same year, both per capital income and per capita private consumption were lower than that obtained in the early 1970s. Per capital income fell from $1,600 in 1980 to $270 in 2000 and the trend continued till date. Generally, about 90 percent of Nigeria's poor are engaged in agriculture, while 58percent of the urban population is living in poverty (Ogunlela and Ogungbile, 2006).

2.3 Review of Related Empirical Studies

Asogwa, Olaitan and Asouzu (2013) on entrepreneurial skills required by women retirees for processing of pineapple fruit into juice as a sustainable business in Enugu State, Nigeria. Three research questions and three hypotheses guided the study. The study made use of survey research design. The population for the study was 184 made up of 11 local pineapple processors and 173 teachers of Home Economics in Enugu State, Nigeria. A 32-skill item questionnaire was used for data collection. The questionnaire was validated by three experts. Split-half technique and Pearson product moment correction method were used to determine the internal consistency of the instrument. A reliability coefficient of 0.89 was obtained. Mean and standard deviation were used to answer the research questions and t-test statistics was used to test the hypothesis. It was found that women retirees required 9 skills in planning for pineapple fruit processing business, 16 in processing pineapple fruit into juice and 7 in marketing of pineapple juice. It was recommended that the identified skills be used to retrain women retries in pineapple fruit processing business. In Enugu State, it was observed that retirees are anxious to get engaged in any profitable business that requires minimal capital involvement. It was also observed that processing pineapple fruit into juice requires minimal capital involvement that could be accommodated within the pension of women retirees to sustain their living. Based on the observations, this study was carried out to identify entrepreneurial skills required by women retirees in pineapple fruit processing as a life sustaining business. The study found out that 32-skill items are required by women retirees in planning, processing and marketing of pineapple juice as a business. It was therefore, recommended that the entrepreneurial skills identified by this study be utilized for training of retirees in processing pineapple fruit into juice as a sustainable business for women retirees in planning, processing and marketing of pineapple juice as a business.

The reviewed study is related to the present study in the sense that both studies treated the same subject matter; entrepreneurial skills required for processing though the present study is on women farmers in processing soybean for poverty alleviation in Benue State while the reviewed study was on entrepreneurial skills required by women retirees for processing of pineapple fruit into juice as a sustainable business in Enugu State, Nigeria. The present study is similar to the reviewed study as it adopts survey design, uses questionnaire, Cronbach alpha reliability was used to determine the internal consistency of the instrument. Mean and standard deviation were both used for answering the research questions and t-test statistics was used to test the hypotheses in the reviewed study. The present study adopts mean and standard deviation in answering the research questions and t-test statistics was used to test the null hypotheses. The reviewed study provided empirical evidence to support the findings of the present study. The difference between the present study and the reviewed study is that the present study is carried out in Benue State while the reviewed study was carried out in Enugu State. The present study uses a population of 331,522 made up of 331,500 Women farmers and 22 Agricultural extension agents while the population for the reviewed study was 184 made up of 11 local pineapple processors and 173 teachers of Home Economics in Enugu State. Three research questions were answered and three null hypotheses were tested for the reviewed study while five research questions will be answered and four null hypotheses were tested in the present study. The present study will use

61-skill items questionnaire while the reviewed study made use of 32 item questionnaire. The sample size for the present study was 400 while there was no sampling for the reviewed study. The reliability coefficient obtained in the reviewed study is 0.89 while the reliability coefficient obtained in the present study is 0.88. The reviewed study focused on entrepreneurial skills required by women retirees for processing of pineapple fruit into juice as a sustainable business in Enugu State, Nigeria while the present study focuses on entrepreneurial skills required by women farmers in processing soybean for poverty alleviation in Benue State, Nigeria.

Oladejo (2013) carried out a study on profitability of soybean processing in Ogbomoso Area of Oyo State, Nigeria. The study investigated the cost and returns to soybean processing in Ogbomoso area of Oyo state. Purposive sampling technique was employed to select a total number of 240 soybean processors (120 soycheese and 120 soymilk processors). Data were collected with the use of a structured interview schedule. The result revealed that the mean age for soy cheese producers was 38 years compared with 42 years for soymilk producers. Mean household size was 4.75 for soy cheese producers compared with 5.13 for soymilk producers. Above 88% of soymilk producers received formal education compared with 100% of soy cheese counterparts, while 80% of soy cheese producers compared with 93.3% of soymilk producers were married. Budgetary analysis revealed that soymilk enterprise attracts gross margin of #1,053.00 per processing cycle while soy cheese enterprise attracts gross margin of #350.67 per processing cycle. Soybean processing is found to be profitable with benefit cost ratio of respondents greater than one. Regression analysis revealed that significant variables affecting revenue to soymilk enterprise include purchase cost of soybeans and age (in business) of respondents while for soy cheese enterprise, significant variables include purchase cost of soybeans and cost of other ingredients used in soy cheese production. The result of the analysis shows a positive and significant relationship between processing technique and returns to the enterprise. The study concluded that soymilk enterprise is more profitable than soy cheese enterprise in the study area.

The study revealed that soybean processing is profitable. The result of the analysis shows a positive and significant relationship between processing technique and returns. It is therefore recommended that local people should be encouraged to invest in the venture with the hope of enhancing the economic empowerment of low income earners. Efforts should also be made by the processors to improve their processing technique. The reviewed study is related to the present study in the sense that both studies treated the same subject matter; soybean processing though the present study is on entrepreneurial skills required by women farmers in processing soybean for poverty alleviation in Benue state, Nigeria while the reviewed study was on profitability of soybean processing in Ogbomoso Area of Oyo State, Nigeria. The present study is similar to the reviewed study as it adopts survey design, Cronbach alpha reliability was used to determine the internal consistency of the instrument. The reviewed study provided empirical evidence to support the findings of the present study. The difference between the present study and the reviewed study is that the present study uses a population of 331,522 made up of 331,500 Women farmers and 22 Agricultural extension agents while the population of the reviewed study was 240 soybean processors made up of 120 soy cheese processors and 120 soy milk processors. Data was collected using well-structured interview schedule while the present study uses

questionnaire. Four research questions were answered and four null hypotheses were tested using multiple regression analysis for the reviewed study while five research questions were answered and four null hypotheses were tested using t-test in the present study. The reviewed study focused on profitability of soybean processing in Ogbomoso Area of Oyo State, Nigeria while the present study focuses on entrepreneurial skills required by women farmers in processing soybean for poverty alleviation in Benue State, Nigeria.

Asogwa, Isiwu and Amonjenu (2015), on entrepreneurial skills required by women farmers in processing of tiger nut tuber into milk for poverty reduction in Benue State, Nigeria. Three research questions were answered and three null hypotheses were tested for the study. The study made use of survey research design. The population for the study was 151 made up of 106 teachers of Agriculture and 45 teachers of Home Economics in Benue State, Nigeria. A 34-skill item questionnaire titled 'Tiger nut Processing Entrepreneurial Skills Questionnaire' (TPESQ) was used for data collection. The TPESQ was validated by three experts. Cronbach alpha reliability method was used to determine the internal consistency of the instrument. A reliability coefficient of 0.89 was obtained. Mean was used to answer the research questions and t-test statistics was used to test the null hypotheses at 0.05 level of alpha. It was found that women farmers required 10 skills in planning for tiger nut tuber processing enterprise, 14 skills in processing tiger nut tuber into milk and 10 skills in marketing of tiger nut milk. It was recommended among others that the identified entrepreneurial skills be developed into a training manual and utilized by skill acquisition centres for training of women and youths who wish to engage in tiger nut processing enterprise. The reviewed study is related to the present study in the sense that both studies treated the same subject matter; entrepreneurial skills required by women farmers though the present study is on processing soybean while the reviewed study was on processing tiger nut tuber into milk. The present study is similar to the reviewed study as it adopts survey design, uses questionnaire, Cronbach alpha reliability was used to determine the internal consistency of the instrument and both the reviewed and present studies were carried out in same area of study.

Agbo, Yakubu, and Ayang (2021), conducted a study on Development of entrepreneurial skills module in Ginger *Zingiber officinale* production for the training of secondary school leavers in Nasarawa State. In the reviewed study, development of entrepreneurial skill training module in ginger production is a research study that tends to tackle the problem of mass unemployment in Wamba Local Government Area of Nasarawa State. The target population was all Senior Secondary School (SSS) III students in Wamba Local Government Area. The study developed skills module for training of secondary school leavers in seven clusters of husbandry practices viz: Planning, pre-planting, planting, field maintenance operations, harvesting, processing of ginger and marketing of ginger products. Survey research design was adopted for the study. A 61-item structured questionnaire used to elicit responses from 129 respondents who were in SSS III. The questionnaire was divided into seven sections based on the research questions. Each of the skills item has a 4-points response scale of highly needed (HN), moderately needed (MN), slightly needed (SN) and not needed (NN) with a corresponding value of 4, 3, 2, and 1 respectively. The questionnaire was validated by two (2) experts from Departments of Crop Production and Agricultural Extension, University of Agriculture, Makurdi. Data obtained from the trial testing on 20 students in Makurdi, was analyzed using the Cronbach Alpha reliability method with a

coefficient of 0.87. Mean and standard deviation were used to answer the research questions. Findings emerging from the study revealed all the skill items in planning, pre-planting, planting, field maintenance operations, and harvesting, processing and marketing operations respectively, were needed for training of secondary school leavers. The researchers therefore recommended that the training module developed should be used as workshops guide for secondary school leaver sand others who may be interested in Ginger farming by schools, skill acquisition centres, extension agents and government departments of agriculture. This will go a long way to curb social vices engaged by youths like thuggery, gangstarism, armed robbery, prostitution, and drug related crimes. The study reviewed is related to the present study in the area of entrepreneurial skills module for ginger production though the present study is on entrepreneurial skills in processing soybean. The reviewed study will provide empirical basis to support the findings of the present study. However, both studies differ in the geographical area and content. While the reviewed study was carried out in a local government called Wamba LGA of Nasarawa state and treated ginger production, the present study was carried out in Benue state and covered soybean processing. Furthermore, the population for the study was 129 students comprising of 73 males and 56 females while the present study used a population of 331,522 made up of 331,500 Women farmers and 22 Agricultural extension agents. Seven research questions were answered and seven null hypotheses were tested for the reviewed study while five research questions was answered and four null hypotheses was tested in the present study

An investigation carried out by Anthony, Waba and Bandawa (2021), on effects of varying processing methods of soybean on performance of broiler chickens in Federal Polytechnic Bali teaching and research farm, Taraba State. This was done to examine the impact of different soybean processing methods and the effects of processed soybean on broiler performance. For this purpose, a 56-day research was conducted on 400 ROSS 308 broiler chickens, which were raised under good intensive system of management in Federal Polytechnic Bali teaching and research farm, Taraba State. In achieving this, birds were assigned to five (5) treatment and sample size of six (6) per pen was used with eight replications. Performance data was collected weekly and carcass analysis was done on the trial day (56). Data were analyzed using ANOVA in SPSS, Confidence and significance level at 95% and P 0.05 was observed in all the parameters tested. However, high performance observed in this research trial was recorded in a treatment A, D and E respectively. This proved that hydro-thermal treatment of soybean was the best method that preserved nutrients, reduced anti-nutritional factors and enhance performance in broiler chickens. Similarly, the significant increase seen on the length and weight of the small intestine indicates increased surface area for nutrient absorption. On the other hand, poor performance was recorded on treatment B and C. This reveals that thermal processing methods (toasting and extrusion) were not suitable for optimum performance as shown in this research trial. The comparative trial on evaluation of different methods of soybean processing shows that the hydro-thermal and the control treatment was the overall best in the preservation of nutrient, removal of anti-nutritional factors and performance improvement in broilers chickens unlike the thermal processing methods. The tool used in arriving at this decision provides farmers with a better decision on the best processing method that will improve optimal performance. The study reviewed is related to the present study in the area of soybean processing. However, both studies differ in the geographical area and content. The reviewed study was carried out in Bali research

farm of Taraba state while the present study is carried out in Benue state. Furthermore, the population for the study was 400 ROSS 308 broiler chickens while the present study used a population of 331,522 made up of 331,500 Women farmers and 22 Agricultural extension agents.

3.0 METHODOLOGY

This section explains the various methods and procedures that were used in gathering data relevant for this research study. Survey research design was adopted for the study. The rationale for choosing this design as the appropriate one is that the researcher was interested in eliciting information from the respondents on the subject matter. This study was carried out in Benue State in the north central geo-political region of Nigeria, with Makurdi as its capital city. The choice of the study area was justifiable because soybean is commonly cultivated in Benue (the number one producer in Nigeria), diverse products from its high economic value, increasing acceptability of soybean, contributions to rural development and increasing export opportunities. The population of the study comprised 331,522 which 331,500 are women soybean farmers in Benue State and 22 agricultural extension agents, (Desk Officer Farmers' and Agricultural Association, Benue State Ministry of Agriculture and Natural Resources 2021) with Zone A having 116,025, Zone B 165,750 and Zone C 49,725 making up the total population of 331,522 (See Appendix 'F').

The sample size for the study was 400 respondents. The sample size was determined using 'Taro Yamane formula' (see Appendix 'A'). Multi-stage sampling procedure was used to select the sample size. The choice of multi-stage sampling technique was because the selection of the sample size involved several stages. In the first stage, the 22 agricultural extension agents were purposively selected. The second stage involved the use of stratified proportionate random sampling technique to select the farmers based on the proportion in each of the zone, 126, farmers were selected from zone A, 189 from Zone B, while 63 women farmers from Zone C. This was done to ensure that, relative proportion of the women farmers from each zone involved in the study was exactly its relative contribution in the sample (see Appendix 'B' Pg. 128). The instrument for data collection was 61 items structured questionnaire. (See Appendix 'G'). To ensure the reliability of the instrument, Cronbach's Alpha was used to determine internal consistency of items. The reliability coefficient obtained for instruments is 0.88. Based on the value, it can be said that the items of the instrument are reliable (Appendix 'E'). A total of 400 copies of the questionnaire was administered to the respondents. The data collected were analyzed using mean and standard deviation (SD) to answer the research questions. The decision made was based on the real limit of numbers. Hence a mean response score of 3.50-4.00 was considered as highly required (HR), 2.50-3.49 Moderately Required (MR), 1.50-2.49 Slightly Required (SR), while 0.50-1.49 was considered as Not Required (NR). The null hypotheses were tested using t-test statistical tool at 0.05 level of significance. The decision rule for the rejection or acceptance of each hypothesis was based on the set value of 0.05, where the P-value is greater than or equal to the set value of 0.05($P \geq 0.05$) the hypothesis was accepted but will be rejected where the P-value is less than the set value of 0.05($P < 0.05$).

4.0   **RESULTS AND DISCUSSION**

4.1 **Data presentation and Analysis**

4.1.1 Research Question One

What are the entrepreneurial skills required by women farmers and agricultural extension agents in planning for soybean processing enterprise for poverty alleviation?

Table 1: Mean rating of responses on entrepreneurial skills required by women farmers and agricultural extension agents in planning for soybean processing enterprise for poverty alleviation (N= 400).

S/N	Item statement	Mean	Std Dev.	Rmk
1	Formulate specific objectives for soybean processing enterprise.	3.940	**.303**	Required
2	Review the objectives periodically as changes take place.	3.963	.226	Required
3	Source of funding.	3.948	.274	Required
4	Draw a timetable of activities involved in processing.	3.945	.287	Required
5	Decide on the location of the processing activities.	3.963	.257	Required
6	Deduce on the size or quantity of soybean to be processed.	3.970	.198	Required
7	Identify relevant processing input.	3.053	.245	Required
8	Identify important source of labour.	3.950	.296	Required
9	Identify market outlets for processed soybean products.	3.960	.242	Required
10	Budget for soybean processing enterprise.	3.068	.251	Required
11	Identify source of funds for establishment of processing unit.	3.965	.243	Required
12	Ability to foresee the viability of processing enterprise.	3.980	**.157**	Required
13	Identify the needed equipment for soybean processing.	3.975	.222	Required
14	Determine the storage approach.	3.163	.206	Required
15	Ability to identify the desired output of varieties of soybean to be processed.	3.965	.253	Required
	Grand Mean	3.787	.244	Required

Std Dev = Standard Deviation, Rmk = Remark

Results in Table 1 revealed all the fifteen (15) skill items have mean values ranging from 3.053 to 3.980 above the benchmark of 2.50 on a four (4) point rating scale with the grand mean of 3.787. This indicated that all the items specified on entrepreneurial skills are required by women farmers in planning for soybean processing enterprise for poverty alleviation in Benue State. Also, the standard deviation of .157 to .303 with grand standard deviation of .244 showed that the respondents were not far from each other in their responses.

4.1.2 Research Question Two

What are the entrepreneurial skills required by women farmers and agricultural extension agents in identifying equipment and materials for processing soybean for poverty alleviation?

Table 2: Percentage skills required in identifying equipment and materials in processing soybean for poverty alleviation (N= 400).

S/N	Item	Y	% Y	N	% N	Rmk
1	Harvester	-	-	400	100	N
2	Peeling machine	12	3	388	97	Y
3	Washing & soaking machine	9	2.25	391	97.75	Y
4	Soybean grinding machine	400	100	-	-	Y
5	Soybean cooking machine	22	5.50	378	94.50	Y
6	Soybean mixing & seasoning machine	8	2	392	98	Y
7	Soybean filter machine	4	1	396	99	Y
8	Soybean sealing machine	2	0.5	398	99.50	Y
9	Soybean roasting machine	22	5.50	378	94.50	Y
10	Soybean extraction machine	-	-	400	100	N
11	Pots & other containers	400	100	-	-	Y
12	Sieve	400	100	-	-	Y
13	Basket	400	100	-	-	Y

Y = Yes, N = No, Rmk = Remark

Results in Table 2 revealed that, only four equipment listed out of the thirteen (13) have 100% identification. These are, soybean grinding machine, pots and other containers, sieve and basket respectively. This result showed that these are the equipment that are used for processing soybeans for poverty alleviation in Benue state. Similarly, the result showed that harvester and soybean extraction machines are not being used. This is represented by 100% response rate respectively; while the remaining equipment were not identified.

4.1.3 Research Question Three

What are the entrepreneurial skills required by women farmers and agricultural extension agents in processing of soybean products for poverty alleviation?

Table 3: Mean rating of responses on entrepreneurial skills required by women farmers and agricultural extension agents in processing of soybean products for poverty alleviation (N= 400).

S/N	Item statement	Mean	Std Dev.	Rmk
1	Thresh dried soybean pods manually or mechanically.	3.963	.267	Required
2	Winnow soybean manually to remove the seeds from the debris.	3.960	.262	Required
3	Dry winnowed soybean seeds before storage.	3.963	.257	Required
4	Store soybean seeds at moisture content of 10% until ready for sale.	3.968	.248	Required
5	Stack the soybean in wind to dry.	3.960	.252	Required
6	Ability to decorticate soybean before grinding.	3.965	.263	Required
7	Remove soybean seeds from the sun when dried before mechanical grinding.	3.973	.178	Required
8	Handpick stones from soybean seeds.	3.965	.184	Required
9	Identify the relevant tools/equipment to be used in processing the products.	3.955	.288	Required
10	Identify the end product of the processed soybean.	3.990	.122	Required
11	Preparation and dehulling skills.	3.973	.205	Required
12	Extraction process	3.960	.262	Required
13	Desolventizing	3.970	.198	Required
14	Sequentially separate soybean husks.	3.970	.222	Required
15	Extrusion of soybean.	3.980	.172	Required
	Grand Mean	**3.968**	**.225**	**Required**

Std Dev = Standard Deviation, Rmk= Remark

Results in Table 3 revealed that, all the fifteen (15) elements of entrepreneurial skills are required by women farmers and agricultural extension agents in processing of soybean products for poverty. This is represented by 100% of positive response rate received from the 400 respondents depicted by grand mean value of 3.968 and a standard deviation of 0.225 respectively.

4.1.4 Research Question Four

What are the entrepreneurial skills required by women farmers and agricultural extension agents in packaging processed soybean products for poverty alleviation?

Table 4: Mean rating of responses on entrepreneurial skills required by women farmers and agricultural extension agents in packaging processed soybean products for poverty alleviation (400).

SN	Item statement	Mean	Std Dev.	Rmk
1	Packaging using pouch	3.973	.216	Required
2	Packaging in metal can	3.973	.205	Required
3	Packaging using layered cartons	3.038	.237	Required
4	Packaging using glass bottles	3.948	.300	Required
5	Packaging using sacks	3.975	.199	Required
6	Packaging using plastic bottles	3.988	.150	Required
7	Packaging using sealed nylon/polythene bags	3.980	.199	Required
8	Packaging using other plastic containers	3.053	.255	Required
	Grand Mean	**3.741**	**.220**	**Required**

Std Dev = Standard Deviation, Rmk= Remark

From the results in Table 4, it was revealed that, all the 8 elements of entrepreneurial skills are all required by women farmers and agricultural extension agents for packaging processed soybean products for poverty alleviation in Benue State. This is represented by 100% of positive response rate received from the 400 respondents depicted by grand mean value of 3.741 and a standard deviation of 0.220 respectively.

4.1.5 Research Question Five

What are the entrepreneurial skills required by women farmers and agricultural extension agents in marketing of soybean products for poverty alleviation?

Table 5: Mean rating of responses on entrepreneurial skills required by women farmers and agricultural extension agents in marketing soybean products for poverty alleviation (400).

SN	Item statement	Mean	Std Dev.	Rmk
1	Advertise soybean to attract customers.	3.928	.312	Required
2	Grade and measure soybean in tags.	3.950	.270	Required
3	Open a sales book record for the product.	3.955	.280	Required
4	Fix appropriate prices for the different grades of the products.	3.930	.283	Required
5	Distribute or transport products to the buyers.	3.945	.278	Required
6	Expanding market for soybean	3.950	.270	Required
7	Keep good record of sales.	3.963	.267	Required
8	Carry out market survey to identify cost of different quality of soybean products	3.123	.336	Required
9	Determine the right time to sell soybean products	3.975	.172	Required
10	Sell in small measure in order to increase patronage	3.965	.232	Required
	Grand Mean	**3.868**	**.270**	**Required**

Std Dev = Standard Deviation, Rmk= Remark

From the results in Table 5, it was also revealed that, all the 10 elements of entrepreneurial skills are required by women farmers and agricultural extension agents for marketing processed soybean products for poverty alleviation in Benue State. This is represented by 100% of positive response rate received from the 400 respondents depicted by grand mean value of 3.868 and a standard deviation of 0.270 respectively.

4.2 Hypotheses Testing

4.2.1 Hypothesis 1

There is no significant difference between the mean responses of women farmers and agricultural extension agents on the entrepreneurial skills required in planning for soybean processing for poverty alleviation in Benue State.

Table 6: t-test analysis of the mean ratings of responses of women farmers and agricultural extension agents on the entrepreneurial skills required in planning for soybeans processing for poverty alleviation.

Variable	N	Mean	Df	P-Value	Alpha-Value	Dec.
Soybean Women Farmers	378	3.788	398	.461	0.05	NS
Agricultural Extension Agents	22	3.764				

N= Number of Respondents, Df= Degree of Freedom, Dec.= Decision, NS= Not Significant.

The result of t-test analysis on Table 6 revealed that Soybean Women Farmers had mean value of 3.788 while Agricultural Extension Agents had a mean value of 3.764 with a degree of freedom of 398 and the p-value of .461 being greater than the alpha-value of 0.05. This shows that there was no significant difference in the mean ratings of the responses of women farmers and agricultural extension agents on the entrepreneurial skills required in planning for soybeans processing enterprise for poverty alleviation in Benue State. Based on this finding therefore, the earlier null (H_{O1}) hypothesis was upheld which negates the alternative hypothesis.

4.2.2 Hypothesis 2

There is significant difference between the mean responses of women farmers and agricultural extension agents on the entrepreneurial skills required in processing soybean products for poverty alleviation in Benue State, Nigeria.

Table 8: t-test analysis of the mean ratings of responses of Women Farmers and Agricultural Extension Agents on the entrepreneurial skills required in processing soybean products for poverty alleviation.

Variable	N	Mean	Df	P-Value	Alpha-Value	Dec.
Soybean Women Farmers	378	3.976	398	.000	0.05	S
Agricultural Extension Agents	22	3.815				

N= Number of Respondents, Df= Degree of Freedom, Dec.= Decision, S= Significant.

The result of t-test analysis on Table 8 revealed that soybean women farmers had mean value of 3.967 while agricultural extension agents had a mean value of 3.815 with a degree of freedom of

398 and the p-value of .000 being less than the alpha-value of 0.05. This shows that there is significant difference in the mean ratings of the responses of women farmers and agricultural extension agents on the entrepreneurial skills required for processing soybean products for poverty alleviation in Benue state. Hence we reject the stated null (H$_{O2}$) hypothesis. This also means that there was significant difference between the mean values of the variables studied. The significant difference observed in table 8 could be as a result of the difference in the range of the mean ratings of respondents which is from 3.95 to 3.99. Also, the standard deviation of the respondents ranges from .17 to .28.

4.2.3 Hypothesis 3

There is significant difference between the mean responses of women farmers and agricultural extension agents on the entrepreneurial skills required in packaging processed soybean products for poverty alleviation in Benue state, Nigeria.

Table 9: t-test analysis of the mean ratings of responses of women farmers and agricultural extension agents on the entrepreneurial skills required in packaging processed soybean products for poverty alleviation.

Variable	N	Mean	Df	P-Value	Alpha-Value	Dec.
Soybean Women Farmers	378	3.734	398	.000	0.05	S
Agricultural Extension Agents	22	3.860				

N= Number of Respondents, Df= Degree of Freedom, Dec.= Decision, S= Significant.

The result of t-test analysis on Table 9 revealed that soybean women farmers had mean value of 3.734 while agricultural extension agents had a mean value of 3.860 with a degree of freedom of 398 and the p-value of .000 being less than the alpha-value of 0.05. This showed that there was significant difference in the mean ratings of the responses of on the entrepreneurial skills required by women farmers and agricultural extension agents in packaging processed soybean products for poverty alleviation in Benue State. Based on our stated decision rule therefore, the null (H$_{O3}$) hypothesis is rejected in this regard. This implied that there was significant difference between the mean values of the variables studied. The significant difference observed in table 9 showed that the responses of respondents on packaging processed soybean were at different range level (3.05 to 3.98) and the standard deviation also ranged from .15 to .30.

4.2.4 Hypothesis 4

There is no significant difference between the mean responses of Women Farmers and Agricultural Extension Agents on the entrepreneurial skills required in marketing soybean products for poverty alleviation.

Table 10: t-test analysis of the mean ratings of responses of women farmers and agricultural extension agents on the entrepreneurial skills required in marketing soybean products for poverty alleviation.

Variable	N	Mean	Df	P-Value	Alpha-Value	Dec.
Soybean Women Farmers	378	3.869	398	.438	0.05	NS
Agricultural Extension Agents	22	3.855				

N= Number of Respondents, Df= Degree of Freedom, Dec.= Decision, NS= Not Significant.

The result of t-test analysis on Table 10 revealed that soybean women farmers had mean value of 3.869 while agricultural extension agents had a mean value of 3.855 with a degree of freedom of 398 and the p-value of .438 being greater than the alpha-value of 0.05. This showed that there was no significant difference in the mean ratings of the responses of women farmers and agricultural extension agents on the entrepreneurial skills required in marketing soybean products for poverty alleviation in Benue state, Nigeria. Recall our decision rule earlier stated, the null hypothesis (H$_{O4}$) was therefore upheld that there was no significant difference between the mean values of the variables studied.

4.3   Discussion of Findings

The result of research question one revealed that fifteen (15) skill items identified were very critical entrepreneurial skills required by women farmers and agricultural extension agents in planning for soybean processing enterprise for poverty alleviation in Benue state, Nigeria, the result is in consonance with the findings of Asogwa, Olaitan, and Asouzu (2013), whose found out that women retirees required nine skills in planning for pineapple fruit processing business, also the study support the findings of Okeme Isaac, Alawa, Adie David, Akwagiobe, Clement and Ukwapu (2014), whose findings revealed that all the identified skill items in the area of planning, management, the study also agree with the findings of Asogwa, Isiwu, and Amonjenu (2015), that revealed that women farmers required 10 skills in planning for tiger nut tuber processing enterprise, fourteen (14) skills in processing tiger nut tuber into milk and 10 skills in the marketing of tiger nut milk.

The result is also in consonance with the result of Agbo, Yakubu, and Ayang (2021), which revealed that planning, and pre-planting, were needed for the training of secondary school leavers. the study also supports the findings of Okafor, Okeme, and Oketoobo (2010), who found that entrepreneurial skill in planning, while the result negates the findings of Mama, Asogwa, and Ukonze, (2012), who revealed that nine competencies in planning, while the result support the findings of Onoriode, (2017) who revealed that there were nine agripreneurial skills in planning. This result may be due to the fact that planning skills in planning are an important aspect of the processing of soybean.

Of the arrays of thirteen items of equipment and materials, only 4 were fully identified, for the processing of soybeans for poverty alleviation, 1 piece of equipment was not used at all while the

rest eight were not identified by the women farmers and agricultural extension agents in the processing of soybean for poverty alleviation in Benue state, Nigeria. This result negates the findings of Mama, Asogwa, and Ukonze, (2012), who identify the skills include setting goals for processing cassava into garri, flour, chips, and starch; reviewing the goals periodically; deciding on the location of the enterprise so on.

Also, the result is in consonance with the findings of Onoriode, (2017) who found that youths required all the items on agriprenuerial skills in processing Chevon (Goat meat) into Kebab for Sustainable Income Generation in Delta State. The result also agrees with the findings of Singh, Tegegne, and Ekanem, (2012), who identify the skill in the ginger processing Industry in India. The study also supports the findings of Okeme Isaac, Alawa, Adie David, Akwagiobe, and Clement Ukwapu (2014), Finding of this study showed that all the skill identified in this study was required by secondary school graduates for economic success in cocoa production. This is because the identified equipment for processing soybean in Benue State

The result of research question three revealed that fifteen (15) skill items delineated were very critical entrepreneurial skills required by women farmers and agricultural extension agents in the processing of soybean products for poverty alleviation. This result is in consonance with the findings of Asogwa, Olaitan, and Asouzu (2013) It was found that women retirees required 16 skills in processing pineapple fruit into juice. The result negates the findings of Oladejo (2013) who found out soybean processing is found to be profitable with a benefit-cost ratio of respondents greater than one. While the findings are in consonance with the findings of Okeme Isaac, Alawa, Adie David, Akwagiobe, Clement and Ukwapu (2014) which revealed that production farm level processing was required by secondary school graduates for economic success in cocoa production. The result findings of Asogwa, Isiwu, and Amonjenu (2015) found 14 skills in processing tiger nut tuber into milk. Also, the result agrees with the findings of Agbo, Yakubu, and Ayang (2021) who found out processing was needed for the training of secondary school leavers. Meanwhile, the findings of the study agree with the study of Okafor, Okeme, and Oketoobo (2010) who found out that secondary school graduates in Anambra state require a lot of entrepreneurial skill in processing palm oil. The result is also in consonance with the findings of Mama, Asogwa, and Ukonze, (2012) and Onoriode, (2017) who revealed eleven competencies in processing cashew nut enterprise and 32 agripreneurial skills in processing of chevon into kebab

The eight (8) skill items identified were very important entrepreneurial skills required by women farmers and agricultural extension agents in packaging processed soybean products for poverty alleviation. The study is consonance with the findings of Mama, Asogwa, and Ukonze, (2012), who found the packaging skills in the processing cassava, the skills include setting goals for processing cassava into gari, flour, chips, and starch; reviewing the goals periodically; decided on the location of the enterprise on so on. The study also supports the findings of Singh, Tegegne and Ekanem, (2012). Whose result revealed that ginger can be processed into foods with high e nutritious; dealing with low price elasticity for processed food products?

The eight (8) skill items identified were very important entrepreneurial skills required by women farmers and agricultural extension agents in Marketing processed soybean products for poverty alleviation. The result agrees with the findings of Asogwa, Olaitan, and Asouzu (2013). It was found that women retirees required 7 skills in the marketing of pineapple juice. The findings are also in consonance with the findings of Okeme Isaac, Alawa, Adie David, Akwagiobe, Clement and Ukwapu (2014), whose findings revealed marketing skills were required by secondary school graduates for economic success in cocoa production. Also, the finding is also in consonance with the findings of Asogwa, Isiwu, and Amonjenu (2015), and Agbo, Yakubu, and Ayang (2021), who revealed ten (10) skills in the marketing of tigernut milk and marketing operations respectively, was needed for training of secondary school leavers. While the findings also support the work of Okafor, Okeme, and Oketoobo (2010) and Mama, Asogwa, and Ukonze, (2012), the study found that secondary school graduates in Anambra state require a lot of entrepreneurial skills in marketing palm oil. That revealed 7 competencies in marketing of cashew nut are required by secondary school graduates for success in cashew nut processing enterprise. Also, the finding is in consonance with the findings of Onoriode (2017). It was found that youths required all the items eight (8) agripreneurial skills in the marketing kebabs required by youths for sustainable income generation in Delta State.

5.0   CONCLUSION AND RECOMMENDATIONS

5.1   Conclusion

Based on the findings of the study, it was concluded that, the processing of soybean products for the Nigerian market by entrepreneurial women farmers and agricultural extension agents required some basic and very necessary skills. Soybean is largely produced annually but it is largely unexploited, cheap and eaten without much knowledge of its benefits. Farmers produce soybean and sell at the farm gates to middle men who process them and make multiple gain from the efforts of the farmers leaving the farmers in the same state of poverty. The researcher also observed that women in the state depend solely on their husbands for their daily meal and other basic necessities. This dependency on their husbands which has resulted in increased rate of poverty in the State and could be reduced if women engage in processing of soybean to increase earnings. Based on these observations, the study was carried out to identify the entrepreneurial skills required by women farmers in processing soybean for poverty alleviation.

5.2   Recommendations

Based on the findings of the study the following recommendations have been made:

1. The identified entrepreneurial skills should be utilized by skill acquisition centres for training women who wish to engage in soybean processing for income generation.

2. The identified skills in soybean processing should be packaged into a training manual for training women farmers in processing methodologies.

3. Extension agents should organize periodic training for women farmers in identification of equipment and materials for processing of soybean

4. Staff of ministry of agriculture in conjunction with extension agents should train farmers on packaging and marketing of soybean.

5. Extension agents should expand market for soybean and its products through advertisement.

5.4   Limitations of the Study

The conclusion and generalization of the study have the following limitations:

1. The researcher was confronted with unwillingness of some women farmers to respond to questionnaire items and even bluntly refusing to accept copies of questionnaire from the researcher. In some instances, verbally retorted that filling or responding to questionnaire is not translating into provision of money to support them therefore, they are not willing to answer any questions.

2. Some of the women farmers who are not well educated just viewed the whole research process as something not useful to the business of processing which they are already doing.

3. The study was confronted with limited financial resources needed to go to all the geographical areas delineated for the study as cost of transportation and other incidental costs exerted financial drains on the researcher.

5.5 Suggestions for Further Studies and Contribution to knowledge

The study has created gaps that future researchers may wish to bridge. These gaps suggested to be filled are: Assessment of skills in soybean production, Identification of suitable machines for soybean processing and skills required in packaging processed soybean products. The findings of this study identified entrepreneurial skills such as planning, identification, processing, packaging and marketing required by women farmers in processing soybean (Glycine max.) for poverty alleviation in Benue State, Nigeria.

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