Vol. 19, No. 2, 2019

ISSN 0189-7543

NIGERIAN JOURNAL OF RURAL SOCIOLOGY

A PUBLICATION OF THE RURAL SOCIOLOGICAL ASSOCIATION OF NIGERIA

ISSN 0189 - 7543

NIGERIAN JOURNAL OF RURAL SOCIOLOGY

Vol. 19 **No. 2** **JUNE, 2019**

Published by:
The Nigerian Rural Sociological Association

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The purpose of the Journal is to provide an avenue for fostering creativity, scholarship and scientific information in Rural Sociology, Agricultural Extension, Agricultural Economics, Human Ecology and other related disciplines. Attention is focused on agricultural and rural development. Priority will therefore be given to articles on rural society. The Journal will also accept methodological, theoretical, research or applied contributions in these areas. Opportunity is open to scientists and development experts within and outside the country to submit relevant papers for publication. The journal basically follows a peer reviewed process in its assessment of manuscripts.

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TABLE OF CONTENT

CHALLENGES OF YOUTH PARTICIPATION IN AGRICULTURAL ACTIVITIES IN ONDO STATE, NIGERIA

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ABSTRACT
Youth are one of the most important sectors in any society. Apart from being a major source of manpower for socioeconomic development of the society, youth serve as channels for the transmission of culture and the perpetration of a people's recognizable identity. This study examined the challenges of youth participation in agricultural activities in Ondo state, Nigeria. Multistage sampling procedure was used to select 128 youths. Primary data were collected from the youths through the use of interview schedule. Data were analysed using descriptive (frequency, chart, percentage, mean statistic). The results revealed that, youth participated more in crop production (65.6%) and vegetable farming (50.8%). Majority (98.0%) of the youth had favourable attitude towards agriculture. The major challenges youth faced while participating in agricultural activities were ease of starting small scale agriculture as a career ($\bar{x}$ = 2.26) and income derived from agriculture ($\bar{x}$ =2.25). The study recommended that,to improve youth participation in agricultural activities, government and non-governmental organisations should vigorously pursue sensitization and reorientation of youth on market information available for agricultural products and also the prospects abound in agriculture.
Keywords: Challenges; youth; participation; agricultural activities

INTRODUCTION

Agriculture remains the base of the Nigerian economy irrespective of the Nation's concentration on oil, providing the main source of livelihood for most Nigerians. It employs two-thirds of the entire labour force (FAO, 2018). Agriculture is an important sector in economy of the most developing countries in the world. It is essential for the survival of both man and animal races. Apart from providing food for mankind, agriculture plays important roles in nation building, which include: source of livelihood, role in foreign trade, capital/savings transfers and its role in industrial development.

In many countries youth integration in agricultural activities is important for the development of the agricultural sector. In the rural sector, youths provide opportunities for generating farming entrepreneurs and other rural professions (Chikezie *et al.*, 2012). This is due to the fact that the youths have the potential to overcome some major constraints to expand agriculture production sequel to their openness to new ideas and practices than their co-adult farmers (Daudu, 2009).Many countries in Africa and Sub-Saharan regions for instance Nigeria have realized that in order to reduce food insecurity there must be policies for youth integration in agricultural activities. This is through providing incentives to young people who are engaged in agriculture, availing fair market opportunities for youth, providing training opportunities in new technology and presenting agriculture as profitable venture (Ommani, 2011).

The youths have great role to play in achieving the sustainable development in agriculture which is a road map for achieving national development (vision 2020). Nigeria's multiple problems of food scarcity and insecurity can never be ameliorated by leaving the responsibility of farming and agriculture into the hands of the ageing smallholder farmers who tends not to adopt innovations. Hence, there is the need for the youth as successor generation of agriculture in Nigeria to participate and get involved in agriculture. The efforts of the government and other stakeholders in the country to stimulate the interest of the youths in been involved in the agriculture as a prospect to reduction of unemployment rate is commendable, but little or no change is observed. However, many researchers have been targeted at identifying strategies for ensuring the participation of youths in agriculture without much consideration for the determinants of their participation.

The main objective of this study was to examine the challenges of youths in agricultural activities in Ondo state, Nigeria. Specifically, the study sought to:

1. ascertain the socioeconomic characteristics of the youth participating in agricultural activities in Ondo State;
2. determine the types of agricultural activities in which youth participate;
3. ascertain the attitude of youth towards agricultural activities; and
4. ascertain the challenges of youth participation in agricultural activities.

It was hypothesised that there is no significant relationship between the socio economic characteristics of the youth and level of participation in agricultural activities.

METHODOLOGY

The study was carried out in Ondo State, which is located in the South West region of Nigeria. It lies between latitude 5°45' and 7°52'N and longitudes 4°20' and 6°05'E. Its land area is

about 15,500km^2. It is bounded by Kwara and Kogi States to the North, Edo State to East, Delta State to the Southeast, Osun and Ogun States to the West and the Atlantic Ocean to the South. All youth in Ondo State constituted the population for the study. A multistage sampling technique was used to select the respondents. In the first stage, four (4) Local Government Areas (LGAs) were randomly selected out of the eighteen (18) LGAs in the state, using simple random sampling technique. In the second stage, four villages/town were purposively selected from each LGAs because of the agricultural activities in the areas. In the third stage, eight youths (4male and 4 female) were purposively selected from each village because of their participation in agricultural activities. In all, thirty two (32) youth (16 male and 16 female) per LGAs were selected. Thus, a total of one hundred and twenty eight (128) respondents constituted the sample size for the study. Interview schedule was used for data collection.

To determine the agricultural activities in which the youth are involved, a Yes and No option was used to indicate youth participation in various agricultural activities. The level of youth participation was measured on a 4-point Likert-type scale of highly involved = 3, involved = 2, slightly involved = 1 and not involved = 0. To ascertain the attitude of youth towards agricultural activities, attitudinal statements of both positive and negative statements were provided for them on a 5-point Likert type scale of strongly agree =5, agree = 4, undecided =3, disagree = 2 and strongly disagree =1. Also, the index of respondents towards agricultural activities was obtained. Twenty (20) statements were used with a maximum score of 100 (5 x 20) and a minimum score of 20 (1 x 20) based on the Likert scale. This gave a mid-point value of 60 (100+2/2). All scores below this mid-point (20 to 60) were tagged as the percentage of youth with unfavourable attitude (or less supportive) towards agricultural activities; while all scores above this mid-point (61 to 120) were tagged as the percentage of youth with favourable attitude (more supportive) towards agricultural activities. To ascertain the challenges of youth participation in agricultural activities, respondents were required to indicate their responses on a 4-point Likert type scale of: to a very great extent = 3, to a great extent = 2, to some extent =1 and to no extent = 0 was used. The cut-off point of 1.5 was obtained.

RESULTS AND DISCUSSION

Socioeconomic characteristics

Table 1 revealed that about 59% of the respondents were within 24-29 years. The average age of the respondents was 27.5 years. This implies that the age bracket categorized to be youths in Nigeria was captured for the study. The result also revealed that half (50%) of them were male, while the remaining 50% were female. This is in line with the stipulated methodology of the study aimed at ensuring an unbiased data. The result further revealed that 54.7% of the respondents were married. This is in agreement with the findings of Adesina and Eforuoku (2017) who found that majority of youths in a similar study in Ondo State were married. About 73.4% of the youth practice Christianity. The mean household size of the respondents was 5 persons. Data in Table 1 revealed that most of the rural youth that participated in agriculture had one form of education or the other. This is in congruent with the findings of Adesina and Eforuoku (2017) who asserted that majority (99.2%) of the youths engaged in agricultural activities in Ondo State had formal education.

Participation of the youth in agricultural activities

Table 2 shows the percentage distribution of respondents according to their participation in agricultural activities. Findings indicate the various agricultural activities in which young people are engaged in the study area which include poultry production, crop production, animal rearing, fish production, agribusiness, agro-processing, snail rearing and vegetable farming. Results show that (36.7%) engaged in poultry production, (65.6%) engaged in crop production, and the major crops that are being planted include cassava, banana, plantain, yam and maize. About 31% engaged in animal rearing, 25% engaged in fish production, 38.8% engaged in agribusiness, 34.4% engaged in agro-processing, 15.6% engaged in snail farming and 50.8% engaged in vegetable farming. It can be concluded that the youth in the study area participate more in crop production than any other agricultural activities, which could be due to the low rate of risk and failure associated with crop production unlike livestock farming.

Table 1: Socioeconomic characteristics of respondents

Variables	Frequency	Percentage	Mean
Age (years)			
18-23	48	37.5	
24-29	75	58.6	27.5
30-35	5	3.9	
Sex			
Male	64	50.0	
Female	64	50.0	
Marital status			
Married	70	45.3	
Single	58	54.7	
Religion			
Christianity	94	73.4	
Muslim	29	22.7	
Traditional	5	3.9	
Household size			
1-4	48	37.5	
5-8	75	58.6	5 persons
>8	5	3.9	
Educational level			
No formal education	15	11.7	
Primary education attempted	4	3.1	
Primary school completed	17	13.3	
Secondary education attempted	15	11.7	
Secondary school completed	27	21.1	
Vocational training	28	21.9	
Higher education	22	17.2	

Source: Field survey, 2016

Table 2: Percentage distribution of youth participation in agricultural activities

Farming Activities	Frequency	Percentage
Poultry production	47	36.7
Crop production	84	65.6
Animal production	40	31.3
Fish production	32	25.0
Agribusiness	51	39.8
Agro-processing	44	34.4
Snail farming	20	15.6
Vegetable farming	65	50.8

Source: Field survey, 2016

Level of participation in agricultural activities

Data on Table 3 reveal the respondents' level of participation in agricultural practices. The respondents were highly involved and participated in crop production ($\bar{x}$ =1.73). This is in congruent with the finding of Nwaogwu and Obele (2017) who found that crop farming ranked highest among all agricultural activities in which youths were engaged in Niger Delta region of Nigeria. Participation in crop production is high because of the relative ease of starting the crop production enterprise. Furthermore, results showed the respondents' level of participation in the following agricultural activities: vegetable farming ($\bar{x}$=1.26), agribusiness ($\bar{x}$=0.81), poultry production ($\bar{x}$= 0.82) and agro-processing ($\bar{x}$=0.75). This implies that the respondents' levels of participation in these agricultural activities are not high. This could be because of the stress that is involved some of these activities and the capital intensive nature of the activities.

Table 3 further revealed the low level of participation in animal rearing ($\bar{x}$=0.60), fish production ($\bar{x}$ = 0.56) and snail farming ($\bar{x}$ = 0.29). Few of the respondents that rear animals are for domestic purposes. The youth involvement is also very low in fish production because it requires a large capital to start. Gwary, *et al.* (2008) in their study reported that youths were more interested in crop production than livestock, probably due to the short gestation period of the crop varieties produced, which ensures quick turnover. In

addition, livestock production could be more capital intensive than crop production, hence the preference for crop production by most youths.

Table 3: Level of participation of respondents in agricultural activities

Agricultural activities	Not participated %	Slightly participated %	Participated %	Highly participated %	Mean
Poultry production	62.5	86.0	13.3	15.6	0.82
Crop production	33.6	7.0	11.7	47.7	1.73*
Animal Rearing	69.5	10.9	9.4	10.2	0.60
Fish Production	75.8	4.7	7.0	12.5	0.56
Agribusiness	60.9	3.9	28.1	7.0	0.81
Agro-processing	66.4	3.1	19.5	11.0	0.75
Snail farming	85.2	5.5	4.7	4.7	0.29
Vegetable Farming	50.0	6.3	11.7	32.1	1.26

Mean ≥ 1.5 * highly involved
Source: Field survey, 2016

Attitude of the youth towards agricultural activities

Table 4 show the respondents' attitude towards agricultural activities. The youth strongly agree (72%) that involvement in agricultural activities is profitable, 57.0% strongly agree that engaging in agricultural activities is lucrative and 49.2% strongly agree that agriculture can help provide for socioeconomic needs. This implies that the rural youth see agricultural activities as a profitable business which everyone can be involved in whether literate or illiterate in which it can help to meet their socio economics needs. This finding collaborate the findings of Kimaro, Towo, Moshi (2015) that rural youth believe that they can get their socioeconomic needs through participation in agricultural activities.

The youth also strongly agree (55.5%), that some agricultural activities doesn't require a large capital to invest, 49.2% of the youth agree that inclusion of agriculture in all levels of education can motivate youth to participate in agriculture, while 51.6% also agree that agriculture is a major employer of labour in rural areas. Also, 52.3% agree that incentives serve a good motivator for participating in agricultural activities, 70.0% agree that recognising youth as stakeholders in agriculture can help to bring out the great ideas they possess, 37.5% agree that involvement of youth in agriculture can lead to reduction in social vices and disturbance, 46.1% agree that practicing agriculture takes time and transcends generation. This implies that rural youth believe that the inclusion of agriculture as a subject in all levels of education will positively influence their participation in agricultural activities and that agriculture can provide employments but the government support is a significant factor for the improvement of the sector.

The result in Table 4 further revealed that 70.3% of the youth strongly disagree that agriculture is meant for the school drop-outs and illiterates, 55.5% strongly disagree that agricultural activities are for the old people, 52.3% strongly disagree that agricultural activities tarnishes ones status in the society. This implies that majority of the respondents have negative disposition towards farming as a way of employment/profession. The youth sees the practicing of agriculture for those that are old and illiterates. This result disagree with of the findings of Girei *et al* (2016) that 44% of the respondents disagree that farming is for school drop-outs.

Also, 60.2% of the respondents disagree that engaging in agricultural activities tends to waste resources, 52.3% agree that practicing agriculture do not alleviate poverty in the society, 39.8% disagree that involvement in agricultural activities is risky, 43.8% of the youth agree that the yield of some agricultural activities tends to be low and discouraging, 43.8% agree that participating in agriculture is time consuming, and38.3% of the youth agree that marketing of agricultural produce is stressful. In the same vein, 50.8% of the youth agree that agricultural activities are tasking in term of energy and power. From these results, youth regard investment in agriculture as risky, time consuming, waste of resources, and do not help in reducing poverty in the society.

Succinctly, analysis as indicated in Figure 1 revealed that majority (98%) of the respondents had favourable attitude towards agricultural activities in Ondo state, Nigeria while the remaining 2.0% of the respondents had unfavourable attitude towards agricultural activities. This means that rural youth who participated in agricultural activities had positive attitude towards agriculture. The finding is similar to that of Abdullah (2013), who found that the attitude of rural youths towards agriculture in Nigeria is favourable and a factor which significantly influence the youth interest in agriculture. The result is also in tandem with the finding of Adesina and Eforuoku (2017) who found

that youths in Ondo state were favourably disposed to the Youth-in-Agriculture Programme (YIAP) in Ondo State, Nigeria.

Table 4: Percentage distribution of youth attitude towards agricultural activities

Statements	Strongly Agree %	Agree %	Undecided %	Disagree %	Strongly disagree %
Engaging in agricultural activities is lucrative	57.0	36.7	3.1	3.1	0.0
Involvement in agricultural activities is profitable	72.7	25.8	0.8	0.8	0.0
Agricultural activities help to provide for socio economic needs	49.2	49.2	0.8	0.8	0.0
Involvement of youth in agriculture can lead to reduction in social vices and disturbance	27.3	37.5	20.3	12.5	2.3
Inclusion of agriculture in all levels of education can motivate youth to participate in agriculture	35.9	49.2	5.5	7.8	1.6
Agriculture is a major employer of labour	25.8	51.6	10.2	11.7	0.8
Incentives is a good motivator for participating in agricultural activities	27.3	52.3	5.5	10.9	3.9
Practicing agriculture takes time and transcends generation	10.2	46.1	14.8	22.7	6.3
Some agricultural activities doesn't require a large capital to invest	55.5	33.6	3.9	2.3	4.7
Recognizing youth as stakeholders in agriculture because of the great ideas they possess	18.8	70.0	8.6	9.4	2.3
Engaging in agricultural activities tends to waste resources	0.0	6.3	4.7	60.2	28.9
Agricultural activities tarnishes one's status in the society	1.6	0.8	5.5	39.8	52.3
Participating in agricultural activities is time consuming	18.8	43.8	4.7	22.7	10.2
Agriculture is meant for the school droppers and illiterates	3.1	1.6	1.6	23.4	70.3
Involvement in agricultural activities is risky	7.8	36.7	3.1	39.8	12.5
Practicing agriculture do not alleviate poverty	27.3	52.3	8.6	3.9	7.8
Marketing of agricultural produce is stressful	21.9	38.3	9.4	23.4	7.0
Yield of some agricultural activities tend to be slow and discouraging	12.5	43.8	11.7	22.7	9.4
Agricultural activities are for the old people	3.9	1.6	1.6	37.5	55.5
Agricultural activities are tasking in terms of energy and manpower	35.2	50.8	4.7	7.0	23.1

Source: Field survey, 2016

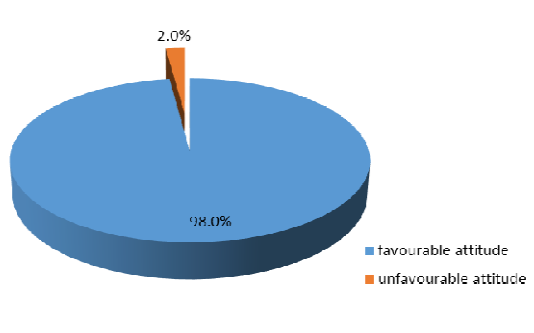

Figure1: Respondents Attitudinal Index towards Agricultural Activities

Challenges of youth participation in agricultural activities

Table 5 show the challenges of youth participation in agricultural activities. The major challenges were; ease of starting agriculture as small scale business ($\bar{x}$ 2.26), income derived from agricultural produce ($\bar{x}$=2.25), perception towards agriculture as income generating activities ($\bar{x}$=2.15), favourable attitude towards agriculture as a career ($\bar{x}$= 1.89) and availability of land to practice agricultural activities ($\bar{x}$=1.77). This implies that majority of the respondent participation is dependent on the fact that income can be derived from practicing agriculture to meet their livelihood. Therefore it can be also concluded that participation of rural youth in agricultural activities depends on the availability and access of land in rural areas. Rural youth who can access land are the one who participate in agricultural activities. The result is also in support of Kising'u (2016) findings that majority (60%) of the youth indicated that, their perceptions towards agriculture influenced their participation in agricultural activities. This study is in support of the findings of Nwaogwugwu and Obele (2017) that poor income from agriculture based lively\hood dissuade youth involvement in farming.

Other challenges youth faced while participating in agricultural activities are; availability of fund to participate in agricultural activities ($\bar{x}$=1.73), motivation from other colleagues ($\bar{x}$=1.63), possession of agricultural skills and knowledge ($\bar{x}$=1.62), job opportunities available in agriculture ($\bar{x}$=1.50) and parental influence on the choice of agriculture as a business ($\bar{x}$=1.50).

This result is in support of Kwenye and Sichone (2018) that lack of access to capital was the major factor constraining youth participation in agriculture. Results also indicate that knowledge about agriculture has influence the respondent participation in agricultural activities and also parent has influence their participation by helping their parent on the farm.

The following variables were not considered as challenges affecting youth participation in agricultural activities. They include; availability of farm labour to work and assist on farm ($\bar{x}$ 1.43), accessibility to and availability of credit facilities for agricultural related activities (x1.42), future prospects in agriculture as a business ($\bar{x}$ =1.38), increased agricultural research opportunities ($\bar{x}$=1.20) and various competitors from other sectors of the economy ($\bar{x}$ = 1.17). This implies the accessibility of the respondent to where they can borrow money in other to invest into agriculture is not a challenge to some extent in participating in agricultural activities. Others are: seasonal shifts in prices of agricultural produce ($\bar{x}$=1.10), availability of incentives from the government for participation in agricultural activities ($\bar{x}$=1.06), favourable government policies ($\bar{x}$=1.06), availability of extension services to handle problems on the farm ($\bar{x}$=1.02) and risks and uncertainty associated with agriculture ($\bar{x}$=0.83).

CONCLUSION

The study assessed the challenges of youth participation in agricultural activities, ascertained the youth's level of participation in agricultural activities and also determined youth attitude towards participation in the agricultural activities in Ondo State, Nigeria. The level of participation of respondents were very high in crop production and vegetable farming. It was found that respondents had positive and favourable attitude towards agriculture. In the same vein the study highlighted; ease of starting agriculture as a small scale business, income derived from agricultural produce, perception towards agriculture as income generating activities and possession of agricultural skills as the major challenges of youth participation in agricultural activities. The study therefore recommends the provision of adequate sensitization, resources and platforms for the youths to participate more in agricultural activities since they are favourably disposed to it.

Table 5: Challenges affecting youth participation in agricultural activities

Determinant factors	To no extent %	To some extent %	To a great extent %	To a very great extent %	Mean	SD
Possession of agricultural skills and knowledge	17.2	26.6	33.6	22.7	1.62*	1.02
Availability of land to practice agricultural activities	7.0	38.3	25.0	29.7	1.77*	0.96
Availability of fund to participate in agricultural activities	6.3	38.3	32.0	23.4	1.72*	0.89
Availability of farm labour to work and assist on farm	31.3	15.6	32.0	21.1	1.43	1.14
Increased agricultural research opportunities	39.1	19.5	23.4	18.0	1.20	1.14
Income derived from agricultural Produce	4.7	10.2	40.6	44.5	2.25*	0.82
Motivation from other colleagues and friends	14.8	26.6	39.1	19.5	1.63*	0.96
Availability of incentives from the government for participant in agricultural activities	46.1	16.4	23.4	14.1	1.06	1.12
Favorable Government policies	50.0	11.7	21.1	17.2	1.06	1.18
Accessibility to and availability of credit facilities for agricultural related activities	29.7	23.4	21.9	25.0	1.42	1.16
Job opportunities available in agriculture	22.7	30.5	26.6	20.3	1.50*	1.06
Risks and uncertainty associated with agriculture	52.3	22.7	14.8	10.2	0.83	1.03
Parental influence on the choice of agriculture as a business	23.4	24.2	32.0	20.3	1.50*	1.06
Attitude towards agriculture as a career	9.4	20.3	42.2	28.1	1.89*	0.92
Seasonal shifts in prices of agriculture Produce	39.1	27.3	18.0	15.6	1.10	1.09
Perception towards agriculture as income generating activities	1.6	17.2	45.3	35.9	2.15*	0.76
Various competitors from other sectors of the economy	38.3	21.9	24.2	15.6	1.17	1.10
Ease of starting agricultural small scale as a business	0.8	16.4	39.1	43.8	2.26*	0.76
Future prospects in agriculture as a business	25.0	30.5	26.6	18.0	1.38	1.04
Availability of extension services to handle problems on the farm	45.3	19.5	23.4	11.7	1.02	1.08

*Major challenges

Source: Field survey, 2016

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CONSTRAINTS TO ACTIVITIES OF WOMEN AGRICULTURAL COOPERATIVE SOCIETIES IN EMURE LOCAL GOVERNMENT AREA OF EKITI STATE

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ABSTRACT
This study examined the constraints hindering activities of women agricultural cooperative societies in Emure Local Government Area of Ekiti state. A total of 110 Women in agricultural cooperative societies were randomly selected from six women cooperative societies. Data were collected using interview schedule and analysed using frequency distribution, percentages, and means. The results indicated that the mean age of women farmers is 45 years and most of the respondents were educated. Majority (78.2%) of the respondents indicated that the major source of information on improved inputs, marketing of produce and other Agricultural services were from members of cooperative societies as well as 74.5%have inadequate extension contact. Constraints faced by the cooperative group include inadequate access to credit facilities ($\bar{x}$=3.64), high interest ($\bar{x}$=3.61), mismanagement of fund ($\bar{x}$=3.55), leadership problem ($\bar{x}$=3.47) and gender discrimination ($\bar{x}$=3.28). Access to credit facilities is the major constraint facing the respondent, therefore, there is need for government to extend credit facilities to the women agricultural cooperative societies and the extension agent should be involved in training of farmers in women agricultural cooperative societies.
Keywords: Women Farmers, Agricultural Cooperative Societies, Credit facilities

INTRODUCTION

Women grow 70.0% of Africa's food on smallholder farms, a task anchored by physical labour (Africa Renewal, 2019). Women are the backbone of the rural economy and are actively employed in agriculture (Assefa and Tadesse, 2012). They are involved in agricultural production, processing and utilisation (Sahel, 2014). Rural women play critical roles in bringing about food and economic security for their households (Food and Agriculture Organisation. FAO, 2011).A woman's role in the agricultural sector is significantly affected by socioeconomic factors such as income, education and access to infrastructure (Sahel, 2014).

Cooperatives are defined asan autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise (Arayese and Mammi, 2010; Maleko and Msuya 2015). On the other hand, it could be defined as a voluntary association of people with common economic and social needs who operate democratically using some underlying principles.

Women's participation in agricultural cooperatives is important for sustainable cooperative development and their involvement is an effective means to empower women in rural areas to overcome constraints they face in accessing knowledge, information and productive assets (Alkali, *et al.,* 2018). Regardless of the sector they belong to whether marketing, financial, workers or housing for instance, cooperatives are powerful vehicles of social inclusion as well as the political and economic empowerment of their members. Women agricultural cooperatives have played an important role in rural development by mobilizing limited resources for women farmers and producers. Therefore, cooperatives play an important role in bringing in more agricultural inputs, produce marketing services, savings, credit services, ways to meet some service needs of members, provide an avenue to articulate members needs and views to political decisions and self-sufficiency in basic food commodities.

Agriculture can be an important engine of growth and poverty reduction. However, the sector is underperforming in many countries because women, who are often a crucial resource in agriculture and the rural economy, face constraints that reduce their productivity (Sofa and Cheryl, 2011). Across the globe, women make up a large part of agricultural labour, but women own fewer assets (land, livestock, human capital), and have less access to inputs (seeds, fertiliser, labour, finance) and services (training, insurance) than men (World Bank, 2017)

Women play significant roles in production and are often key determinants of the size and quality of the final commodities produced. However, they have proportionately less access to quality farm input, lack collateral security for bank loans, less access to agricultural information, training and extension services. Hence, women depend heavily on their own income sources from farming activities to meet their responsibilities and sustain their farm (International Finance Corporation, IFC, 2016).

Women experience a lack of funding (financing and capital) throughout all stages in the life cycle of cooperatives - start up, operational and expansion (International Co-operative Alliance, 2016). The rules on membership and opportunities for women to benefit from and contribute to co-operatives are slowly improving, but meanwhile women and girls who work in agriculture largely remain powerless and uneducated labourers, with

the dual task of working the land and running the household (FAO, 2011; Rawlings and Shaw, 2016). Women's lack of business acumen such as technical knowledge and skills in marketing, management and operations result in low productivity and an inability to compete. Women have often not had access to training and have little knowledge of how to run a business or a cooperative and therefore do not necessarily know about and understand cooperative structures and the cooperative principles (ICA, 2016).

The study therefore aimed at the major social, economic and institutional constraints that hinder women agricultural cooperative societies in Emure Local Government Area in Ekiti State.

The general objective of the study is to examine the constraints hindering activities of women agricultural cooperative societies in Emure Local Government Area in Ekiti State. The specific objectives are to:

1. Describe the socioeconomic characteristics of women farmers in the study area
2. Identify the sources of information of women farmers in the study area
3. Identify the constraints hindering the activities of women agricultural cooperative societies

METHODOLOGY

The study was carried out in Emure Local Government Area of Ekiti State which was part of Emure Ise Orun Local Government before 1st of October 1996, it is bounded to the north by Agbado Ekiti and Imesi Lasigidi, south by Owo, East by river Oyinmon and west by Orun and IseEkiti. The study area includes settlements such as Eporo, Oge, Owode, Ibeji, IdoOpe, Igbo Eku, Akeye, Kajola, Owosi Elemure, Odose camp, Edu camp, Ose, Oyimo. Igbo Aye, Alapoto, Ajebamidele, Okeseri, Adebayo, with Emure as the main town. In terms of tribal composition, majority of the people living in the study area are Yorubas, followed by a considerable number of Ibo and Idonma people, who can be purposely used for employment in agricultural activities. The major economic activity of the study area is predominantly farming-growing food (yam, rice, cassava, plantain, and cocoyam) and cash crops (cocoa, kolanut, palm oil, coffee). Some also engage in garri processing, cassava flour processing, etc.

Study population was all the women farmers in agricultural cooperative societies in Emure Local Government Area. The sample frame was collected from the Local Government Area. Random selection method was used to select 110 women from six Agricultural Cooperative Societies which served as the sample size. Primary data were used in the study. Interview schedule was used to elicit information from the respondents.

Respondents identified constraints from a set of eleven constraint items with the response options of strongly agree, agree, undecided, disagree and strongly disagree with scores of 5,4,3,2 and 1 assigned. The mean of the scale was determined by summing the values attached to the scale and dividing by the number of scale to obtain a value of 3.0. Any item with a mean greater than 3.0 was regarded as constraint. Data were analysed using frequency counts, percentages and mean.

RESULTS AND DISCUSSION

Socioeconomic characteristics

The mean age of the women who are in agricultural cooperative societies was 45years, this showed that they are matured women and mostly within the same age group. Most of the respondents were educated to an extent. Olabisi, *et al,* (2015) revealed that most women posed the basic educational qualification. Most of the respondents were married in their selected villages. This is as a result of early marriage or to increase labour in agricultural production which will considerably reduce the cost of production. It is also revealed in Table 1 that half of the respondents have above 9 years of farming experience. Likewise, a study by Enete and Amusa, (2010) indicated 78% of women farmers had above 21 years of farming experience. This is because of their level of exposure to agriculture at early stage or interest in practicing farming activities. Also, majority of the women farmers have low income from their farming activities and it affects their standard of living.

Different sources of information

Table 2 shows that majority (78.2%) of the respondents have easy access to information from members of their cooperative societies while (74.5%)rarely got information from extension agents. Through in-depth interview, the women also got information from friends, radio and television; as a result of being a group, there is fast flow of information and the rate of adoption of information disseminated is high. There is a competitive response about NGOs dissemination of information. The women revealed that some of their cooperative societies are visited while others were not.

Table 1: Socioeconomic Characteristics of the Women Agricultural Cooperative Societies

Variable	Frequency	Percentage	Mean
Age in years			
30-50	64	58.2	45
Above 50	46	41.8	
Educational Level			
No formal Education	18	16.4	
primary	47	42.7	
secondary	33	30.0	
tertiary	12	10.9	
Marital Status			
Single	17	15.5	
Married	66	60.0	
Divorced	4	3.6	
Widow	23	20.9	
Farming experience			
Below 2yrs	6	5.5	
2-5yrs	18	16.4	
6-9yrs	31	28.1	
Above 9yrs	55	50	
Weekly Income			
Below ₦1000	18	16.4	
₦1,000-₦2,000	30	27.3	
₦2000-₦3,000	29	26.4	
₦3,000-₦5,000	27	24.4	
Above ₦5,000	6	5.5	
Extension contact			
Frequently	28	25.5	
Not frequently	82	74.5	
Total	110	100	

Source; Field data, 2011

Table 2: Distribution of Respondents by the sources of Information

Variables	Percentage (%)
Easy access to information from member	78.2
Information from other farmers	74.5
Information by extension agents	38.2
NGOs usually disseminate information	29.5

Source; Field data, 2011

Constraints hindering activities of women agricultural cooperative societies

The constraints influencing activities of women cooperative societies that were identified by the respondents include inadequate access to credit facilities ($\bar{x}$=3.64), high interest rate on loans ($\bar{x}$=3.61), mismanagement of fund ($\bar{x}$=3.55), leadership problem ($\bar{x}$=3.47), combining farm activities with household work ($\bar{x}$=3.28) and gender discrimination ($\bar{x}$=3.28). Credit facilities are not readily accessible to the women agricultural cooperative societies in the study area. Labintan (2010) analysed that women's lack of access to finance is due to lack of collateral, complicated administrative procedures and unsuitable loan sizes or interest rates. Mismanagement of fund and dishonesty practices will hinder the growth of cooperative endeavours which will discourage farmers from participating fully in the cooperative activities. Sofa and Cheryl (2011) indicated that rural women often manage complex households and pursue multiple livelihood strategies. Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages, engaging in trade and marketing, caring for family members and maintaining homes.

Table 3: Distribution of Respondents by Constraints hindering the Activities of Women Agricultural Cooperative Societies

Variables	Percentage (%)	Mean score
inadequate access to credit facilities	73.6	3.64
high interest rate on loans	72.7	3.61
mismanagement of fund	67.3	3.55
leadership problem	64.6	3.47
gender discrimination	60.0	3.28
combining farm activities with household work	60.0	3.28
inability to read and write	57.3	2.92
refusal to educate female children	54.5	2.87
laziness on members part	53.7	1.89
marketing of agricultural produce	48.2	1.66
lack of interest among members	38.3	1.60
lack of technology improvement	37.3	1.59

Source; Field data, 2011

CONCLUSION AND RECOMMENDATIONS

In a region where there is a heavy dependent on women farmers for food production, Women agricultural cooperative societies have constraints that affect their activities have been indicated, mostly access to credit facilities.

To minimise these, the following recommendations were suggested:

1. Efforts should be made by government to provide adequate credit facilities through agricultural banks to women agricultural cooperative societies.
2. Education plays a major role in improving the status of women, nutrition of their families and national food production. The government should improve women farmer's literacy and knowledge on handling the latest technology that will make them find it easier to adopt innovation which will emphasize the easiest ways to handle their major tedious and laborious activities.
3. Extension agents should render services to address specific needs of women; relevant programmes scheduled for them that will improve and better the life of the women. They should be involved in training of farmers in organisation/ societies

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APPRAISAL OF WOMEN FARMERS' PARTICIPATION IN CASSAVA PRODUCTION ACTIVITIES IN IWO AGRICULTURAL DEVELOPMENT PROGRAMME ZONE OF OSUN, STATE, NIGERIA

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ABSTRACT
The study was carried out to appraise women farmers' participation in cassava production activities in Iwo Agricultural Development Programme Zone of Osun State. The study described women farmer's socioeconomic characteristics, ascertained participation in cassava production activities and also constraints faced in participating in such activities. A total of one hundred and twenty (120) cassava women farmers randomly selected constituted the sample size while structured interviewed scheduled was used for data collection and analysis done using descriptive and inferential statistics. Index of 3.40 obtained is an indication that the women always participated in cassava production in the area. The dominant activities of the women were packing ($\bar{x}$ =4.15), harvesting ($\bar{x}$ =3.92), loading in vehicle ($\bar{x}$ =3.77), stem purchase ($\bar{x}$ =3.76) and stem cutting ($\bar{x}$ =3.64). The major constraints to participation in cassava production activities are access to land ($\bar{x}$ =3.80), access to agrochemicals ($\bar{x}$ =3.60), labour ($\bar{x}$=3.40) inadequate storage facilities ($\bar{x}$=3.34), inadequate capital ($\bar{x}$ =3.33) among others. The findings also revealed that the major constraints to participation in cassava production activities are access to land, access to agrochemicals, inadequate infrastructural facilities, inadequate storage facilities, inadequate capital among others. It was recommended that women farmers should join or form cooperatives societies in order to get support from the government to boost cassava production in the area. Also, governments should subsidize the price of farm inputs in order to make them accessible and affordable to women farmers. In the same vein, better access to farmlands should also be emphasized.
Keywords: Appraisal, women, farmers, participation, cassava

INTRODUCTION

Women's fundamental activities in agriculture cannot be underestimated. Among the 70% of the total agricultural work force in the world, 80% of food producers, and 10% of those who process basic foodstuffs are women and they also undertake 60 to 90% of the rural marketing. Thus making up more than two-third of the workforce in agricultural production (Onwudiwe, Onwudiwe, Olajide, Eze, and Iyiegbuniwe 2014). In Nigeria, as noted by Stella (2017), women play a particular important role in crop production, including land preparation, planting of crops, maintaining of crops, harvesting, transporting, processing, storing and marketing of produce. Rural women in Nigeria provide sixty 60 - 80 percent of agricultural labour and they participate in all aspects of production (Ukonze, 2004). Ruth (2015) agreed that Women specialize in weeding, transplanting, post-harvest work and in some areas land preparation.

In order to encourage women in agricultural production, Women In Agriculture (WIA) was created as component of Agricultural Development Projects (ADPs). Agricultural Development projects are projects jointly sponsored by the Federal and State Governments, which provides both technical and financial support to the farmers, these farmers are referred to as contact farmers. Extension workers receive training on the specific innovations to be introduced to the farmers and after wards are sent to the contact farmers to educate them on the new agricultural practices. It is expected that the new practices will eventually spread among other farmers in the community.

The Women in Agriculture (WIA) is a branch of Agricultural Development project (ADP). WIA was established in 1989 in order to put into efficient use, the full potentials of the land worked by women, their capital investment, labour expenditure and other vital agricultural activities (Food and Agriculture Organisation of the United Nations (2011). WIA programme was established in ADPs by the Federal Ministry of Agriculture, Home Economic Division in collaboration with the World Bank. This is to ensure that more female extension workers are employed to work with the women farmers who hitherto were not sufficiently being attended to by the male extension agents. The emphasis is on the need to ensure that women farmers are adequately reached with extension services (improved technologies, labour saving equipment, inputs and credits) as regards crop production, storage, processing and marketing of agricultural produce. WIA provides vital

information to women farmers in relations to crop and livestock production. The information includes better varieties of crops, good management operations; inputs like improved planting materials, fertilisers, chemicals and loan procurement. They provide improved planting materials which they sell to the women farmers to multiply in their different farms. Stella (2017) opined that the importance of the role played by women in agricultural production is such that the widespread failure so far to reach women farmers through formal extension services has major repercussions for national output and food security as well as social justice.

Cassava production has been identified as a crop that is economically proficient to farmers and known to be a poverty fighter (Onwudiwe *et. al* 2014). Cassava is grown on a wide scale and can yield satisfactorily even in acidic soils where most other crops fail (Onwudiwe *et al,* 2014). The crop has continually played very vital roles, which include income for farmers, low cost food source for both the rural and urban dwellers as well as household food security. It also plays a major role in the effort to alleviate the food crisis in Africa.

Although Nigeria is a world leader in cassava production, but not an active participant in cassava trade in the international markets because most of her cassava is targeted at the domestic food market (Foundation for Partnership Initiatives in the Niger Delta, 2011; AdulAzeez, 2013). Her production methods are primarily subsistence in nature and therefore unable to support industrial level demands. Value addition takes place as soon as cassava is processed, the products from value addition utilised are garri, fufu, tapioca, ethanol, starch, cassava flour, cassava chips, glucose syrup, *lafun*, livestock feed, cassava-based adhesive, among others. This has assisted in stemming the spate of poverty. Nnadi and Akwiwu, 2005 are of the view that cassava processing and the value added products have tremendously led to sustainable poverty alleviation. This result corroborates Okeowo 2015 reports that in Nigeria and other African countries processing of cassava into garri (Amao *et al*., 2007; Oluwasola, 2010; Lawal *et al*., 2013; Effiong *et al*., 2014), fufu (Lawal *et al*., 2013), dried fufu (Ayinde *et al*, 2004) and lafun (Lawal *et al*, 2013), is profitable.

Osun state is not an exception, as most farmers in the area cultivate cassava to sustain livelihood. The majority of rural women have always participated in cassava production and processing and their involvement has been mainly for household consumption (Onyemauwa, 2012). This calls for the need to investigate the women farmers' participation in cassava production activities. This would help agricultural policies, programmes and projects achieve greater agricultural productivity and national food self-reliance.

The general objective of the study is to appraise the women farmers' participation in cassava production activities in Iwo Agricultural Development Programme Zone of Osun State, Nigeria. The specific objectives were to:

1. describe the socioeconomic characteristics of women farmers in the study area
2. Analyse the extent of women farmers' participation in cassava production activities in the zone.
3. identify the constraints to participation of women farmers in cassava production activities.

METHODOLOGY

This study was carried out in Iwo Zone Agricultural Development Programme of Osun State with seven Local Government Areas in the zone namely; Iwo, Irewole, Ejigbo, Ayedire, Ayedaade, Isokan, Ola-Oluwa. Iwo zone has an area of 245km^2 and a population of 120,919 people (National Population Commission, 2006). People of Iwo zone are primarily Yoruba descent and the zone's primary economic activity is agriculture with the primary crops being cocoa, yam, corn, cassava and vegetable. The geographical and topographical characteristics of the zone favor cassava production. It is bounded in the north by Olaoluwa Local Government Area and to the South and West by Oyo State

A multistage random sampling technique was adopted to select the respondents from the list of registered women cassava farmers gotten from the Iwo zone ADP for the study. The first stage involves the random selection of Iwo zone from the three (3) Agricultural zones in Osun State. The second stage involves the simple random selection of four (4) Local Governments namely: Ejigbo, Iwo, Ayedaade and Ayediire Local Government Areas. At the third stage, two farming communities were randomly selected from each of the selected Local Government Area. Lastly, fifteen (15) women cassava farmers were randomly selected from each of the community selected from the Iwo Zone Agricultural development Programme to make up one hundred and twenty (120) sampled women cassava farmers. A structured interview schedule was used as instrument for data collection. The data collected were analysed using descriptive statistics of frequency distribution and percentages for the study.

RESULTS AND DISCUSSION

Data collected for the study were analysed based on the objectives and hypothesis formulated for the study

Socioeconomic characteristics

The result in Table 1 indicates that more than half (56.6%) of the respondents were within the age range of 40-59years with the mean age of 47.37±11.823 years, this is consistent with the findings of Adekunle, Adeoye, and Oyeleye (2018) and Girei, Dire, Yuguda, and Salihu (2014) cited Onyemauwa (2012) that women in their early 30s and early 50s take active part in food crop production. The age is also an incentive for lasting development of sustainable cultural practice that can enhance production (Fakoya, Banmeke, Ashimolowo and Fapojuwo, 2010). It is evident from the results that most of the respondents were married (66.7%). This means that most of the farmers may have dependents, hence they may likely be engaged in the cultivation of cassava as a means of supplementing their income. Marital status was significantly associated with farmers production behaviour in Nigeria (Udensi, Daasi, and Emah, 2013). It also was found that most of the respondents were Christians (47.5%). The data also shows that a high proportion of women farmers (89.2%) had completed one form of formal education. Adequate education enhances farmers' level of production, it is therefore expected that the high literacy level of these cassava farmers would positively influence their production behaviour. Majority (90%) of the women farmers had household size of less than 10. This result of this study is in line with Owolabi, Ajayi and Oyeyemi (2018) who reported that 78.8% of his respondents belong to a family of between 1-9. Majority (65%) owned/inherited the land used for their cultivation, 30.8% had it through gifts, while 57.7% had it by purchasing it. Majority (92.9%) acquired the land by lease out of the 35% that are cultivating cassava on tenant land. As observed by Ofuoku (2017), there is significant difference between owned/inherited land and rented/lease land particularly for women. This will enhance cassava production as most of the respondents need not pay for land to cultivate. However, final decision on land investment is determined by the male household head. Response on farming experience shows that 65% of women farmers had 8.39±6.893 years of experience on cassava production. The result shows that most of the women farmers have been in farming profession for quite some period of time and are not beginner in farming activities especially in cassava production. Experience as a risk management factor, Yunus, Mgaya, Shigalla. and Mahongo (2017) agreed that new farmers are at a higher risk compared to experienced farmers. The results further reveal that most of the respondents are small scale cassava farmers as most of them (75.8%) had farm size of an average of 3.47±1.931ha. Majority (61.7%) engaged in cassava production activities for profit making while 14.2% were there because of their interest in farming.

Level of women's participation in cassava production activities

Table 2 shows that the level of participation of women farmers in cassava production activities is moderately high. The result reveals the highest participation is parking (4.15±0.932) and the least participation in bush burning (2.64±1.377). The findings reveals that the cassava production activities in which the women farmers highly participated included; harvesting (3.92±1.009) loading in vehicle (3.77±1.083), stem purchase (3.76±1.085), stem cutting (3.64±1.060), stem planting (3.49±1.077). This is in line with Owolabi *et.al.* (2018) that women and children play the central role of harvesting, processing and marketing activities in cassava production in many parts of Africa. It also shows that the women farmers participated less in cassava production activities such as; bush burning (2.64±1.377) land clearing (2.73±1.493), ridging (2.75±1.336), application of herbicides/pesticides (2.85±1.288) and manual weeding (2.96±1.191).

Constraints to participation of women farmers in cassava production activities

The results in Table 3 below shows the major factors constraining the involvement of women in cassava production in the study area and are ranked in order of their importance; access to land (3.80±3.47), access to agrochemicals (3.60±3.32), access to labour (3.40±2.83) among others. This is in line with Oladejo, Olawuyi and Anjorin(2011) that lack of capital, lack of government support, poor weather condition and diseases are major agricultural production constraints faced by women in Egbedore Local Government Area of Osun State in Nigeria.

Table 1: Distribution of respondents by socioeconomic characteristics (N=120)

Variable	Frequency	Percentage	Mean±SD
Age (years)			
<30	6	5.0	
30-39	23	19.1	
40-49	42	35.0	47.37±11.823
50-59	26	21.6	
60+	23	19.1	
Marital status			
Single	13	10.8	
Married	80	66.7	
Widowed	17	14.2	
Divorced	6	5.0	
Separated	4	3.3	
Religion			
Christian	57	47.5	
Islam	39	32.5	
Traditional	21	17.5	
Others	3	2.5	
Level of education			
No formal education	13	10.8	
Primary school attempted	5	4.2	
Primary school completed	11	9.2	
Junior secondary attempted	27	22.5	
Junior secondary completed	25	20.8	
Senior secondary attempted	14	11.7	
Senior secondary completed	7	5.8	
Tertiatiary education	18	15.0	
Household size			
<5	48	40	
5-9	60	50	5.48±2.53
>10	12	10	
Sources of land			
Owned/Inherited	78	65	
Tenant	42	35	
Owned/Inherited			
Gift	24	30.77	
Outright purchase	45	57.69	
Inheritance	9	11.54	
Tenant category			
Pledge	3	7.14	
Lease	39	92.86	
Years of farming experience			
<10	78	65.0	
10-19	32	26.6	8.39±6.893
20-29	5	4.16	
30+	5	4.16	
Farm size (ha)			
<5	91	75.83	
5-9	26	21.67	3.47±1.931
10+	3	2.50	
Reasons for farming cassava			
Profit	74	61.67	
Interest in farming	17	14.17	18.73±13.55
Leisure	8	6.67	
Have no choice	14	11.67	
No reason	7	5.83	

Table 2: Participation index result of women in cassava production

Cassava production activities	VHE %	HE %	U %	LE %	VLE %	Mean ($\bar{x}$)	S.D
Land clearing	20.83	11.67	14.17	26.67	26.67	2.73	1.493
Bush burning	15.83	11.67	16.67	23.33	23.33	2.64	1.377
Ridging	15.83	12.50	21.67	19.17	19.17	2.75	1.336
Stem purchase	24.17	39.17	21.67	4.17	4.17	3.76	1.085
Stem cutting	21.67	38.33	27.50	5.00	5.00	3.64	1.060
Stem planting	17.50	38.33	23.33	3.33	3.33	3.49	1.077
Manual weeding	10.83	26.67	19.17	9.17	9.17	2.96	1.191
Application of herbicides/ Pesticides	10.00	29.17	13.33	16.67	16.67	2.85	1.288
Harvesting	28.33	49.17	12.50	4.17	4.17	3.92	1.009
Packing	28.33	50.83	4.17	3.33	3.33	4.15	0.932
Loading in vehicle	25.00	48.33	7.50	2.50	2.50	3.77	1.083

Code: VHE = Very high extent, HE = High extent (HE), U = Undecided, LE = Low extent, VLE = Very low extent

Table 3: Constraints to women farmers' participation in cassava production

Constraints	Mean	S.D	Rank
Illiteracy	2.76	2.75	14th
Family issues	2.18	2.18	19th
Cultural and religious barriers	2.47	2.46	18th
Unfavorable land tenure system	3.00	3.0	10th
Inadequate storage facilities	3.34	3.34	4th
Inadequate infrastructural facilities	2.87	3.40	13th
Inadequate capital	3.33	3.33	5th
Under-representation of women in agricultural extension training	2.89	2.89	12th
Use of un-improved working implements	3.07	3.07	9th
Inadequate knowledge of improved technology	3.14	3.14	8th
Poor provisions of improved varieties	3.27	3.27	6th
Good price	3.24	3.23	7th
Marketing	2.95	2.95	11th
Community issues	2.67	2.67	16th
Government policies	2.67	2.66	16th
Transfer of farm/ Inheritance	2.74	2.73	15th
Labour	3.40	2.83	3rd
Access to agrochemicals	3.60	3.32	2nd
Access to land	3.80	3.47	1st

CONCLUSION AND RECOMMENDATION

The study had found out that the women farmers in Iwo ADP zone participated highly in cassava production activities which includes loading in vehicle, marketing, harvesting, packing, stem purchase, stem cutting, stem planting and were also faced with the following major constraints which includes capital, access to land, access to labour, access to agrochemicals, inadequate infrastructural facilities, inadequate storage facilities among other. Based on these findings, the study therefore recommends the Women farmers to join or form cooperative society for easy access to financial support while the Government should subsidize the price of farm inputs in order to make them accessible and affordable and also make policies that will provide land for the rural women farmers.

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INVOLVEMENT OF RURAL WOMEN IN ENTREPRENEURIAL ACTIVITIES IN ASA LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA

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ABSTRACT
This study assessed the level of involvement of rural women in the various entrepreneurial activities in Asa Local Government Area of Kwara state, Nigeria. Data were collected from 126 respondents and analysed with descriptive statistics and correlation. Data analyses revealed that the mean age of the rural women is 39.4 years with a mean years of entrepreneurial experience to be 10.7 years. Categorization of farmers' level of involvement showed that rural women had low level of involvement in entrepreneurial activities with a mean of 1.59. Lack of capital (2.57) was identified as a major constraints in entrepreneurial activities Correlation analysis indicated that age (r = 0.246:p=0.06), Marital status(r = 0.176:p=0.002), Household size (r = 0.202:p=0.023), had a positive and significant effect on the level of involvement in entrepreneurial activities among the women , The study concluded that the level of involvement of entrepreneurial activities among women in the study area was low and therefore recommended that rural women should have access to financial support such as loans from banks and other stakeholders and also government intervention programmes such as N-power and Trader-moni in other to increase their level of involvement in entrepreneurship activities.
Keywords: Rural Women, Entrepreneurial, Levels, Activities, Involvement

INTRODUCTION

It is a common say that entrepreneurial people owns the world. Hence entrepreneurship is the dynamic process of creating incremental wealth. This wealth is created by individuals who take the major risks in terms of equity, time, and career commitment of providing value to some products or services, which itself may or may not be new or unique but value must somehow be infused by the entrepreneur by securing and allocating the necessary skill and resources. (Kuratko and Richard, 2001). Shane and Venkataraman (2000) defined entrepreneurship as the discovery, creation and exploitation (including by whom and with what consequences) of opportunities to bring into existence future goods and services. Onubuogo and Esiobu (2014) also confirmed that sustainable development of agribusiness requires the development of entrepreneurial and organisational competency in farmers. Entrepreneurship has become one of the most dynamic forces in the economy which drives the technological boom, which in turns is driving much of the world's economic growth.

However, women around the world are involved in numerous tasks and responsibilities at contemporary families, societies and national affairs. Women around the world are major contributors to the economy, as they are making a difference in the socioeconomic arena. Iyiola and Azhu, (2014) confirmed that women contributes numerous ideas and a great deal of energy and capital resources to their communities, and generate jobs as well as create additional work for suppliers and other spin-off linkages. Entrepreneurial activities in rural areas loom large to solve the problem of poverty, unemployment and rural transformation in developing countries. In many developing countries, including Nigeria due to the increasing economic downturn, resulting in loss of jobs for the men in folks, women as a mother and custodians of family stability, assume the responsibility of keeping the family on course through the running of microenterprises. As a result, women have known to sacrifice their lives for the survival of their families, amidst their reproductive function (Garba, 2011).

Rural women are key agents for development; they play a catalytic role towards achievement of transformational economic, environmental and social changes required for sustainable development. Entrepreneurship is the only solution to the growing employment among rural youth. It helps to generate employment for a number of people within their own social system. This is more beneficial for women in rural areas as it enables them to add to the family income while taking care of their home and livestock centreed task. There are various entrepreneurial activities performed by rural women especially in the study area such as farming, trading, hairdressing, fashion designer, shea-butter processing, locust bean processing, bead making, and cassava processing.

Women play an essential role in poverty reduction of their family especially where the income of the husband or parents is very meager to cater for the family basic needs. They actually play a complementary responsibility in the fight against poverty through their entrepreneurial activities. There is therefore need to determine their level of entrepreneurial activities so as to empower them which is essential, not only for the well-being of individuals, families, and rural communities but also for overall economic productivity.

Objectives of the study were to:

i. describe the socioeconomic characteristics of rural women in the study area
ii. identify the entrepreneurial activities engaged in by the rural women.
iii. ascertain the level of involvement of rural women in their various entrepreneurial activities.
iv. examine the perceived benefits derived from entrepreneurial activities on the rural women livelihood.
v. identify the constraints of rural women involvement in entrepreneurial activities.

The hypothesis of the study is as follows: There is no significant relationship between the socioeconomic characteristics and the women's level of involvement in entrepreneurial activities.

METHODOLOGY

This study was carried out in Asa Local Government Area of Kwara State, Nigeria. Kwara state was one of the seven states created on 27th of May, 1967. The state has 16 Local Government Areas. Asa Local Government was created in 1976, it is one of the 16 Local Governments in the State and located on the latitude $8^0$00 and $9^0$10' North of the equator and longitude $2^0$45' and $4^0$15' East of the Greenwich Meridian. It has a landmass of 1,525km^2. It is bounded by Moro LGA to the North, Oyo state to the South, Ilorin West LGA to the East and Oyun LGA to the West. It has a rainfall of 1000-1500mm. The vegetation of the area comprises of guinea savanna, derived savanna and forest. The mean monthly rainfall ranges between 50 mm during the wettest months and 24 mm during a driest period. The population is 126,668 (NBS,2006) and their major language is Yoruba, the major occupation of the people is agriculture, planting of various crops such as maize, sorghum, cashew, cassava, sweet potato, yam, cowpea, tomato and also rearing of livestock such as poultry birds and are also into entrepreneurial activities such as farming, trading, hairdressing, fashion designer, Shea-butter processing, locust bean processing, bead making, and cassava processing

The population for the study comprised all the rural women who are involved in entrepreneurial activities in Asa Local Government Area of Kwara State, Nigeria

Three stage sampling procedure was employed for the study. Stage one involved the random selection of 50% out of the 17 wards in Asa L.G.A, giving a total number of 8.5, approximately 9 wards. The selected wards are Afon, Yowere, Owode, Onire, Odo-Ode, Aboto, Ogbondoroko, Reke and Ila-Oja. Stage two involved random selection of two Communities each out of the 9 wards were randomly selected making a total of 18 communities from the study area which are Laduba, Budo-Aagun, Aboto-Oja, Budo Alake, Alapata, Aiyekale, Aboto-Alfa, SapatiOko, Ago- Oja, Temidire, Gbadu, Adafila, Aiyede, Sapati Ile, Ajagun, Ajelanwa, Onyangi, Oko-Erin.Stage three involved random selection of 7 respondents from each community making a total sample size of 126 respondents for the study.

The instrument was analysed using descriptive statistical tools such as frequency, percentages, mean and standard deviation while correlation was used for inferential statistics. The instrument was divided into five sections. The first section dealt with the socioeconomic characteristic of the respondents. The second section examined the types of entrepreneurial activities engaged in by the respondents. The third section sought to determine the level of involvement in entrepreneurial activities. The fourth section identified the perceived benefits derived from entrepreneurial activities on the livelihood of respondents.

To identify the respondents' entrepreneurial activities, a list of entrepreneurial activities was provided for the respondents to indicate 'Yes or No'. Also obtain information on the perceived benefits on entrepreneurial activities by the respondents, a list of possible benefits of entrepreneurial activities was provided for the respondents to identify. Respondents were also asked to indicate the level of seriousness of constraint in involving in entrepreneurial activities on a 3 point Likert type scale of Very serious(3) , Serious(2) and Not serious(1). These values were summed up to obtain 6 and divided by 3 to get 2. Variables greater or equal to 2 would be considered as more serious constraints to involvement of entrepreneurial activities among respondents.

The dependent variable of the study was the level of involvement of rural women in entrepreneurial activities. The levels were measured using a 4-point Likert type scale. Fully Involved =3 moderately Involved=2, ess involved =1and Not Involved=0. A decision mean of 2.00 was derived. Any category with a mean value less than 2.00 wasregarded as low, any category with a mean value between 2.00-2.99 was regarded as medium while any value higher than 2.99 was regarded as high category: Low = 0 - 1.99(<2.00) Medium = 2.00 -2.99, High = >2.99. Data obtained from the field survey was subjected to both descriptive (frequency distribution, percentage, mean score and ranking order) and inferential (Pearson product moment correlation) statistics.

RESULTS AND DISCUSSION

Table 1 shows that women in the study area had a mean age of 39.38 with many of the respondents in the category age of 36 -50 years. This implies that the respondents were in their economic age and are matured enough to make use of every available opportunity and technology

provided by the environment. This is line with the findings of Ayogu and Agu (2015) which states that entrepreneur is a midlife choice for women and majority of them starts entrepreneurial activities at the age of 35. About 60.3% of the respondents were married which indicates that most of the women have family to cater for which make them to opt for more money by involving in various business activities in order to improve their standard of living in the society. This agrees with the findings of Akerele and Aihonsu (2011) that 59 percent of the rural women in Ogun state, Nigeria are married, and have family responsibilities which make them to opt for more money by involving in various business activities in order to improve their standard of livings in the society. Also, the mean of the household size was 6 persons with about 35.7% of the respondents having secondary education. The mean entrepreneurial experience is 11.27 years with about 46.7% of them having about 6-15 years of entrepreneurial activities which imply that the respondents have vast knowledge in entrepreneurial activities.

Table 1: Distribution of rural women in Asa local government area according to their socioeconomic characteristics

Variables	Frequency	Percentages	Mean	SD
Age (years)				
≤ 20	20	15.9	**39.38**	**14.03**
21-35	40	31.7		
36-50	43	34.1		
> 50	23	18.3		
Marital status				
Single	22	17.5		
Married	76	60.3		
Divorced	10	7.9		
Widowed	18	14.3		
Household size				
1-4	16	12.7		
5-8	108	85.7	**6.13**	**1.34**
>8	2	1.6		
Years of schooling				
0	29	23.0		
1-6	24	19.0		
7-12	45	35.7		
>12	28	22.2		
Entrepreneurial Experience (Years)				
≤ 5	34	27.0		
6-15	60	47.6	**11.27**	**10.74**
16-25	18	14.3		
26-35	10	7.9		
> 35	4	3.2		

Source: Field Survey, 2019

Entries in table 2 shows that 60.3% of the respondents were engaged in farming, about 42.1% were into trading, 21.4% were into cassava processing, 15.9% were into fashion designer and shea-butter processing, 15.1% were into sales of recharge cards, 14.3% were into bead making, 12.7% were into hairdressing, 11.1% were into locust bean making, 10.3% were into catering, and 5.6% were into local soap making. This result indicates that women in the study area were involve in various entrepreneurial activities and this implies that these activities may likely generate more income for the upkeep of the respondents' household.

Table 2: Distribution of entrepreneurial activities engaged in by rural women in Asa LGA

Entrepreneurial activities	Frequency	Percentage
Farming	76	60.3
Trading	53	42.1
Cassava processing	27	21.4
Fashion designer	20	15.9
Shea-butter processing	20	15.9
Sales of recharge cards	19	15.1
Bead making	18	14.3
Hairdressing	16	12.7
Locust bean making	14	11.1
Catering	13	10.3
Local soap making	7	5.6

Source: Field Survey, 2019
***Multiple responses**

The result in Table 3 shows the rank order of level of involvement of the rural women in various entrepreneurial activities. Trading activities have a mean score of 2.47, farming activities have a mean score of 2.42, cassava processing with a mean score of 1.68, sales of recharge cards 1.55, fashion designing, 1.43, shea-butter processing 1.41, hair dressing 1.39, catering 1.30, locust bean making 1.28, while local soap making 1.09 respectively. This implies that various entrepreneurial activities are practiced among the rural women.

Table 3: Distribution of respondents based on their level of involvement in entrepreneurial activities

Entrepreneurial activities	Fully involved F(%)	Moderately involved F(%)	Less involved F(%)	Not involved F(%)	M.S	Rank
Trading/hawking	39 (31.0)	29 (23.0)	10 (7.9)	48 (38.1)	2.47	1st
Farming	38 (30.2)	24 (19)	17 (13.5)	47 (37.3)	2.42	2nd
Cassava processing	26 (20.6)	3 (2.4)	1 (0.8)	96 (76.2)	1.68	3rd
Sales of recharge cards	17 (13.5)	7 (5.6)	4 (3.2)	98 (77.8)	1.55	4th
Fashion designing	17 (13.5)	1 (0.8)	1 (0.8)	107 (84.9)	1.43	5th
Shea-butter processing	13 (10.3)	6 (4.8)	1 (0.8)	106 (84.1)	1.41	6th
Hair dressing	14 (11.1)	2 (1.6)	3 (2.4)	107 (84.9)	1.39	7th
Catering	12 (9.5)	0 (0)	2 (1.6)	112 (88.9)	1.30	8th
Locust bean making	9 (7.1)	4 (3.2)	0 (0)	113 (89.7)	1.28	9th
Local soap making	2 (1.6)	2 (1.6)	1 (0.8)	121 (96)	1.09	10th

Source: Field survey, 2019
(F= Frequency, M.S=Mean score)

This result in Table 4 shows about 92.1 percent had low level of involvement, 7.9 percent had moderate level of involvement. This indicates that the level of involvement of the respondents in entrepreneurial activities is generally low. This implies that most of the respondents may likely be engaged in other occupation which does not create much time for them to involve in entrepreneurial activities or lack of capital as stated in table 6 that lack of capital is a major constraint to the rural women involvement in entrepreneurial activities

Table 4: Categorisation of respondents based on their level of involvement in entrepreneurial activities

Categorisation of Respondents	Frequency	Percentage	Mean
Low (<2.00)	116	92.1	
Medium (2.00-2.99)	10	7.9	**1.59**
High (>2.99)	0	0	

Source: Field Survey, 2019

The result in Table 5 shows that All (100%) of the respondents claimed that entrepreneurial activities improve their savings habit and self- esteem, 98.4% claimed that it reduce crisis at home, 97.6% claimed decision making power, 96.8% claimed that it serves as source of employment, 83.3% claimed that it enhances group society, 79.4% claimed that it serves as additional

source of income, 78.6% claimed that it serves as major source of income. This implies that entrepreneurial activities have a positive impact in the life of the respondents. The level and extent of women entrepreneurship empowerment varies from society to another. In some society, women do assume complementary role in managing and providing basic needs of their family, while in some instances their role is only supplementary where they are historically restricted to home chores or family up keep (Brush *et al*, 2009;Mordi, Simpson, Singh and Okafor, 2010; Garba, 2011). The success of women entrepreneurial activity is determined by the type and nature of business environment they found themselves which is subject to a number of factors such as national policies, culture and socioeconomic factors (Garba, 2011; Emmanuel, 2013).

Table 5: Distribution of respondents according to perceived benefits of entrepreneurial activities on their livelihood

Perceived benefits of entrepreneurial activities to the livelihood	Frequency	Percentage
Improve their savings habit	126	100
Improve Self-esteem	126	100
Reduce crisis at home	124	98.4
Boost decision making power	123	97.6
Serve as source of employment	122	96.8
Enhances group society	105	83.3
Serve as additional source of income	100	79.4
Serve as major source of income	99	78.6

Source: Field Survey, 2019

Table 6 shows that lack of capital ranked first with mean score of 2.57, unconducive business environment second, lack of family support ranked third, lack of resources fourth, lack of training and development ranked fifth, inadequate of labour sixth, poor planning ranked seventh, and eighth is the conflicting at home with mean score of 1.13.The aforementioned factors contributes to the decline in level of involvement of the respondents in entrepreneurial activities in the study area.

Table 5: Distribution of Respondents According to Constraints in Entrepreneurial Activities

Constraints	V.S F (%)	S F (%)	NS F (%)	MS	Rank
Lack of capital	80 (63.5)	38 (30.2)	8 (6.3)	2.57	1st
Unconducive business environment	40 (31.7)	41 (32.5)	45 (35.7)	1.96	2nd
Lack of family support	24 (19)	41 (32.5)	61 (48.4)	1.71	3rd
Lack of resources	15 (11.9)	38 (30.2)	73 (57.9)	1.54	4th
Lack of adequate training	8 (6.3)	48 (38.1)	70 (55.6)	1.51	5th
Inadequate labour	7 (5.6)	40 (31.7)	79 (62.7)	1.43	6th
Poor planning	1 (0.8)	46 (36.5)	79 (62.7)	1.38	7th
Conflicting at home	0 (0)	16 (12.7)	110 (87.3)	1.13	8th

(VS=Very severe, S=Severe, NS=Not severe)
Source: Field Survey, 2019

The result in Table 7 shows that a significant relationship exists between the socioeconomic characteristics of the respondents and their level of involvement in entrepreneurial activities. The significant variables were; age (r^2=0.246), household size (r^2=0.202), years of schooling (r^2=-0.417), years of entrepreneurial activities (r^2=0.190). The implication of the result is that respondents' involvement in entrepreneurial activities was influenced by their age, household size, years of schooling and years of entrepreneurial activities. That is the higher their age, household size, years of entrepreneurial activities increases the higher their level of involvement in entrepreneurial activities. however, a negative significant relationship between the years of schooling and their level of involvement in entrepreneurial activities i.e. the higher their literacy level the lower their involvement in entrepreneurial activities, which may likely be, due to the fact that most of the educated women are engaged in white collar jobs which may not give them the opportunity to invest in entrepreneurial activities

Table 6: Result of the Pearson's Product Moment Correlation analysis showing the relationship between socioeconomic characteristics and level of involvement in entrepreneurial activities

Socioeconomic characteristics	r – value	p – value	Decision
Age	0.246***	0.06	Significant
Household size	0.202**	0.023	Significant
Years of schooling	-0.417***	0.001	Significant
Years of entrepreneurial activities	0.190**	0.033	Significant

** Correlation is significant at the 0.05 level (2-tailed); *** Correlation is significant at the 0.01 level (2-tailed)
Source: Field Survey, 2019

CONCLUSION AND RECOMMENDATIONS

Level of involvement in entrepreneurial activities among respondents was low. Rural women in the study area involved to improve their saving habit and self-esteem. Major constraints were lack of Capital and Unconducive business environment such as lack of social amenities. The study therefore recommends that rural women should also have access to loans and more awareness on government intervention programmes such as N-power and Trader-moni in other to increase their entrepreneurship development and also adequate social amenities should be made available to the rural communities.

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CASHEW FARMERS' PREFERRED SOURCES OF INFORMATION IN IBARAPA CENTRAL LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA

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ABSTRACT
Farmers tend to be selective in their choice of communicated messages based on their compatibility with their existing practices, societal norms, values or beliefs. This study examined cashew farmers' preferred sources of information in Ibarapa central local government area of Oyo State. A multi-stage sampling procedure was adopted to sample 70 respondents in the local government area. Structured questionnaire and interview schedule was used to elicit responses on respondents' personal characteristics, available source of information, adequacy of information sourced, preferred source of information and constraints faced by farmers with regards to information sources. Data were analysed using descriptive and inferential statistics (Chi square and PPMC) at p = 0.05. Mean age of the respondents was 32 years, most of the respondents (82.9%) were male, married (80.0%) and 34.3% had secondary education. Mean farming experience and household sizes were 14.4 and 6.5 respectively. Respondents' sources of information ranged from co-operative group (91.4%), cashew farmers association (75.7%), fellow farmers (55.7%) radio (50.0%) and mobile phone (40.0%). Respondents' most preferred source of information were extension agents (2.0), cashew farmers association (1.8), radio (1.0), and fellow farmers (0.9). The constraints encountered were unavailability of information source (2.0), inadequate extension agents (1.9) and inadequate capital (1.8) among others. Significant relationship existed between respondents' age (r= -0.228), constraints encountered (r= -0.164) and their preferred source of information.It is concluded that the government should provide adequate extension agents for enhanced cashew production and consequently higher income for improved standard of living for the rural farmers.
Keywords: Cashew, Information sources, Radio, Cashew farmers association and Extension agents

INTRODUCTION

Agriculture has been an important sector in the economy of Nigeria due to its major contribution to national income over the years. Studies haves shown that the growth of cash crops such as cocoa, cashew, coffee, cotton, groundnut, palm kernel, and rubber has contributed a lot to national development. Cashew (*Anacardium occidentale)* is an important industrial and export crop whose potential is yet to be fully exploited in Nigeria. Nigeria is rated as the fourth largest producer of cashew nuts in Africa and seventh in the world, with the bulk of its raw cashew nuts and cashew kernels exported to Vietnam and India, respectively (Okon, 2016). Cashew has for many years been used for food and income generation. Cashew is one of the crops that should be given priority attention in terms of its marketing locally and as an export commodity.

Information is vital in daily life. Modern societies as well as individuals depend a great deal upon the provision of the right kind of information, in the right form and at the right time. The major function of information is to increase the knowledge of the user, help him take a right decision and to reduce his level of uncertainty. Anything human beings interact with or observe can be a source of information (Bates 2012). The information source is a medium in which knowledge and/or information is stored. In other words, it is understood as something that contains and/or stores information (Bitso, 2012). Sources of information are tools that can possibly meet the information needs of different categories of users. They are the information carriers. Sources of information for cashew farmers are: radio, television, extension workers, cooperative societies, friends and colleagues, newspapers and magazines, books/leaflets, phones, libraries and institutes. Also, observation of people, organisations, speeches, documents, picture and art work can also be described as information sources (Adio, Abu, Yusuf and Nansoh, 2016).

There are various sources of information but evaluating information source is an important process in development. Not all information is reliable or true nor will all information be suitable for one's need. Users must be able to critically evaluate the appropriateness of all types of information source prior to relying on the information. For better farming system and improved yield for cashew farmers, their knowledge, skills and attitudes must keep increasing and changing and this is where the role of the right and credible information must be recognized in the overall planning and execution of cashew farming activities. Studies reveal inadequate exposure of farmers to appropriate agricultural information as one of the major reasons for low yield recorded by many Nigerian farmers but the problem could be because the information sources available to them may not affect their felt

needs, contradict their existing practice, societal norms, values or belief or they may believe the source is not credible. To this end, this study investigated cashew farmers' preferred sources of information in Ibarapa central local government area of Oyo State

The broad objective of this study was to investigate cashew farmers' preferred sources of information in Ibarapa central local government area of Oyo State. The specific objectives were to:

i. determine the socioeconomic characteristics of cashew farmers in the study area.
ii. identify the agricultural information sources available to cashew farmers
iii. ascertain information sources preferred by the respondents
iv. determine whether the farmers are getting adequate information from these sources
v. identify the constraints faced with regards to information sources

METHODOLOGY

This study was carried out in Ibarapa Central Local Government area of Oyo State, Nigeria. It consists of two towns: Igbo-Ora and Idere. It is located in the Southwest geographical zone of Nigeria with its headquarter in Igbo-Ora. The population of the study was registered cashew farmers with cashew farmers association in Ibarapa central local government area of Oyo state. A multi-stage sampling procedure was adopted to sample respondents for this study. The local government area has 10 wards. The first stage involved a random selection of fifty percent of the wards to give five wards. The second stage involved a systematic selection of 50% of members from cashew farmers' association membership list in each ward. A sample size of 70 cashew farmers was used as respondents for this study.

Data was collected through the use of structured questionnaire and interview schedule. To obtain information on socioeconomic characteristics of the respondents, relevant questions were asked on the following areas: age, sex, marital status, years of formal education, household size and farming experience. To identify sources of information and adequacy of information available to respondents, a list of information sources were provided and a scale of yes = 1 or no = 0 was used to measure their responses. To ascertain preferred sources of information among respondents, a list of some sources were provided and a three point likert-type scale of 'not preferred =0', preferred=1' and 'mostly preferred = 2' was used to measure their responses. To identify the constraints faced with regards to information sources among respondents, a list of some items were provided and a three point Likert-type scale of 'not a constraint =0', mild constraint=1'and 'severe constraint = 2' was used to measure their responses. Data collected were analysed using descriptive statistics such as percentages, mean scores, frequency counts and inferential statistics such as Chi- Square and Pearson Product Moment Correlation (PPMC).

RESULTS AND DISCUSSION

Socioeconomic characteristics of respondents

Result in Table 1 shows that 34.3% of the respondents were between the ages of 41-50 with mean age of 32.4years and standard deviation of 16.9 years. This indicates that most of the respondents are adults in their active and reproductive years, which will enable them to carry out farm activities effortlessly.

Table 1 shows that most (82.9%) of the respondents were male in the study area. This implies males are more involved in cashew production than females in the study area. Abubakar (2003) reported that the male domination of cashew farming activities as observed in the study area could be attributed to the fact that women are given opportunity to cultivate arable crops on their husband's plots while access to permanent crop production is usually restricted to men.

Results reveal that most of the respondents (80.0%) were married, while 15.7%, 2.9% and 1.4% were single, divorced and widowed, respectively. This is an indication of the fact that marriage is held as a very important institution especially in rural areas; as no adult would be deemed responsible without it.(Yekinni and Ajayi, 2011).

Result in Table 1 shows that respondents had 6 years as the mean of years of formal education which implied that they were fairly educated in the study area. The educational status of the respondents in this study might also influence their preferred information source**.**

Result in table 1 shows that majority (60.0%) of the respondents had their household size ranging from 6-10 persons. This could be regarded as large family size. Household size has great implication on farming. Larger household implies that the respondents have access to family labour for increased production.

Result shows that the respondents had 14 years as their mean years of farming experience and this implied that respondents have had long farming experience in cashew production in the study area.

Table 1: Distribution of respondents by socioeconomic characteristics

Variables	Frequency	Percentage	Mean	S.D.
Age				
<29	9	12.9		
30 - 40	14	20.0	32.4	16.9
41 – 50	24	34.3		
>50	23	32.8		
Sex				
Male	58	82.9		
Female	12	17.1		
Marital status				
Single	11	15.7		
Married	56	80.0		
Divorced	2	2.9		
Widowed	1	1.4		
Years of formal education				
No formal education	19	27.1		
1 to 6 years	22	31.4	6.0	4.6
7 to 12 years	24	34.3		
>12 years	5	7.1		
Household size				
1-5	13	18.6	6.5	3.2
6-10	42	60.0		
Above 10	15	21.4		
Farming experience				
1 -5	5	7.1	14.4	10.5
6 – 10	30	42.9		
11 – 15	15	21.4		
Above 15	20	28.6		

Source: Field survey; 2018

Sources of information on cashew production

Result in Table 2 reveals source of information on cashew production. Co-operative group and cashew farmers association were the most common sources of information as 91.4% and 75.7% of the respondents indicated that they obtained information from those sources. Slightly above average of the respondents (55.7%) got their information from fellow farmers and a half of the respondents received their information from radio (50.0%).

Table 2: Distribution of respondents based on sources of information on cashew production

Variables	Frequency	Percentage
Radio	35	50.0
Television	25	35.7
Cooperative group	64	91.4
Cashew Farmers Association	53	75.7
Extension agents	22	31.4
Internet	18	25.7
Fellow farmers	39	55.7
Religious association	21	30.0
Mobile phone	28	40.0
Friends/Relatives	12	17.1
Film shows	02	2.9
Town criers	27	38.6
Library	05	7.1
NGOs	04	5.7
Educational forums: (Workshops, Seminars)	09	12.8

Multiple responses
Source: Field survey, 2018

The reason for radio's acceptability cannot be separated from the fact that it is cheap to acquire and can be operated with or without electricity as dry cells battery provide alternative power source for radio. One-third got information from mobile phone (40.0%) while the least patronized source was from film show (2.9%). This could simply be adduced to the challenge of power failure in the study area. This result is partly in line with the report of Adio, Abu, Yusuf and Nansoh (2016) who reported that the available information sources and services that are utilised by farmers were mostly colleagues, town criers, television, mobile phones, film shows in media, radio and relations of farmers.

Adequacy of information on cashew production

Table 3 presents findings on adequacy of information among respondents. Majority of the respondents had adequate information through cooperative groups (94.3%), cashew farmers association (85.7%), and fellow farmers (51.4%). Below average got adequate information through radio (45.7%) and mobile phones (44.4%).This is contrary to the findings of Adio, Abu, Yusuf and Nansoh (2016) who submitted that respondents got adequate information from town criers, relations and film show though it is line with their submission on inadequate information from conferences and workshops and Non – Governmental Organisation(NGOs).

Table 3: Distribution of respondents based on adequacy of information on cashew production from the sources

Variables	Frequency	Percentage
Radio	32	45.0
Television	22	31.4
Co –operative group	66	94.3
Cashew Farmers Association	60	85.7
Extension agents	22	31.4
Internet	19	27.1
Fellow farmers	36	51.4
Religious association	21	30.0
Mobile phone	31	44.3
Friends/Relatives	09	12.9
Film shows	02	2.9
Town criers	06	8.7
Library	04	5.7
NGOs	02	2.9
Educational forums: (Workshops, Seminars)	05	7.1

Source: Field survey, 2018

Preferred source of information on cashew production

Table 4 shows the respondents' preferred source of information on cashew production in the study area. The weighted mean score reveals that preferred source of information was more on extension agents (2.0), cashew farmers association (1.8), co-operative group (1.7), radio (1.0), fellow farmers (0.9), mobile phone (0.8). This implies that the most preferred source of information were extension agents, cashew farmers association, co-operative group, radio, fellow farmers and mobile phone respectively. This could be as a result of the ability of these farmers to have face-to-face contact with these sources except radio. It is also probable that they participate and observe the Small Plot Adoption Technologies (SPAT) demonstrations conducted by the extension agents. Moreover, these sources allow a two-way process of communication. This result corroborated the findings of Daud, Chado and Igbashal (2009) who submitted that most of the farmers preferred extension agents as source of information. In contrast, Agbamu (2014) submitted neighbour /fellow farmers as the most preferred source of information by cassava farmers in Delta State which could be attributed to the interpersonal communication and immediate feedback cassava farmers enjoy.

Table 4: Distribution of respondents based on preferred source of information on cashew production

Source	Not Preferred %	Preferred %	Mostly Preferred %	Weighted mean score	Rank
Extension agent	10.0	40.0	50.0	2.0	1st
Cashew farmers Association	8.6	54.3	37.1	1.8	2nd
Co-operation group	8.6	64.3	27.4	1.7	3rd
Radio	47.1	35.7	17.1	1.0	4th
Fellow farmers	55.7	25.7	18.6	0.9	5th
Mobile phone	61.4	21.4	17.1	0.8	6th
Friends / Relatives	58.6	27.1	14.3	0.8	6th
Town criers	61.5	21.4	17.1	0.8	6th
Film shows	67.2	20.0	12.8	0.7	9th
Religious Association	67.1	21.4	11.4	0.6	10th
Television	68.6	22.9	8.6	0.6	10th
Internet	71.4	12.8	15.7	0.6	10th
Library	82.8	14.3	2.9	0.3	13th
Education forum	84.3	10.0	5.7	0.3	13th
NGOs	91.6	4.2	4.2	0.2	15th

Source: Field survey, 2018

Constraints faced by respondents with regards to information sources

Table 5 shows respondents' constraints with regards to information sources. Weighted mean score shows constraints items according to their severity as rated by the respondents. The constraints that were mostly encountered by the respondents were those on unavailability of information source (2.0), inadequate extension agents (1.9) and inadequate capital (1.8). This implies that unavailability of information source, inadequate extension agents and inadequate capital constitute the major constraints faced by respondents as regards information source. All the constraints expressed by cashew farmers were interrelated and they could be solved by addressing the inadequate extension agents as expressed by them. The result of inadequate extension agents explains why respondents indicated that they prefer extension agent who they regard as credible source and who could visit them to offer free services.

Table 5: Distribution of respondents based on constraints faced by respondents

Constraints	Not a Constraint	Mild Constraint	Severe Constraint	Weighted Mean score	Rank
Unavailability of source type	15.7	27.1	57.1	2.0	1st
Inadequate Extension Agents	17.1	30.0	52.9	1.9	2nd
Inadequate capital	32.9	8.6	58.6	1.8	3rd
Illiteracy	27.1	30.0	42.9	1.7	4th
Poor power supply	35.7	15.7	48.6	1.6	5th
Local leaders holding relevant information	24.3	45.7	30.0	1.5	6th

Source: Field survey, 2018

Respondents' socioeconomic characteristics and their preferred source of information

Result in Table 6 shows the relationship between age, years of formal education, household size, farming experience and respondents' preferred source of information. The result shows that of all the socioeconomic characteristics examined, source preference is significantly related to age ($r = -0.228$, $p < 0.05$), sex ($\chi^2=79.400$, $p<0.05$) and marital status ($\chi^2 = 162.857$, $p < 0.05$) but not significantly related to educational level ($r= 0.008$, $p<0.05$), household size ($\chi^2= -0.120$, $p<0.05$), and farming experience ($\chi^2 =0.130$, $p<0.05$). The implication of this finding is that in considering source preference of farmers, age, sex and marital status of farmers must be given special consideration.

Table 6: Relationship and correlation analysis of respondents' socioeconomic characteristics and their preferred information source

Variables	PPMC (r)	χ^2	df	p-value
Age	-0.228	-	-	0.016
Educational level	0.008	-	-	0.944
Household size	-0.120	-	-	0.320
Farming experience	0.130	-	-	0.285
Sex	-	79.400	2	0.000
Marital status	-	162.857	4	0.000

df – degree of freedom, S- significant, NS – Not Significant, χ^{2-} Chi- square
Source: Data analysis, 2018

Correlation between respondents' constraints and preferred source of information

The PPMC result in Table 7 reveals that there was a significant correlation between respondents' constraints and their preferred source of information. This implies that constraints the respondents faced could determine their preferred source of information because inadequate capital could affect sourcing of information from credible sources and could probably prevent farmers from trying some innovations available. Likewise inadequate extension agents could affect the efficiency of information use.

Table 7: Correlation between respondents' constraints and their preferred source of information

Variable	r-value	p-value	Decision
Preferred source of information vs. Constraints	-0.164**	0.000	S

** Correlation is significant at the 0.01 level (2-tailed).
Source: Data analysis, 2018

CONCLUSION AND RECOMMENDATIONS

The study concluded that respondents got adequate information through cooperative groups, cashew farmers association, fellow farmers, radio and mobile phone. The preferred sources of information were extension agents, cashew farmers association, radio, fellow farmers, and mobile phone. The militating constraints to preferred information sources were unavailability of information source, inadequate extension agents, inadequate capital, illiteracy, poor power supply, and local leaders withholding relevant information. It is recommended that there should be:

- provision of adequate extension agents for enhanced cashew production, development workers promoting cashew–based technologies should largely depend on extension agents and (other credible and available information source). This will ensure fewer problems in driving agro-information flow, reduced cost of information delivery, ready acceptance and adoption of cashew-based innovations.
- explicit, current information should always be available for farmers through various information sources such as cashew farmers association, radio, fellow farmers and mobile phone.

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EFFECTS OF INVOLVEMENT IN SUSTAINABLE AGRONOMIC PRACTICES ON FOOD SECURITY OF RURAL HOUSEHOLDS IN OBAFEMI-OWODE LOCAL GOVERNMENT AREA, OGUN STATE, NIGERIA

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ABSTRACT
The subsistence nature of farming among rural households is likely to put them at risk of losing access to food during the lean season, however, sustainable agronomic practices (SAPs) is expected to guarantee adequate supply of food all year round. This study assessed the effect of involvement in SAPs on food security of rural households in Obafemi Owode Local Government Area, Ogun State, Nigeria. The study used multistage sampling procedure to collect data on socioeconomic characteristics, awareness on SAPs, involvement in SAPs, and food security status from 117 household heads. Data were analysed using frequency, percentage, mean, multiple regression, Chi-square, and PPMC. Results revealed mean age of 46±7.5 years, majority (76.1%) of the households were male headed; majority (92.3%) had formal education and the average household size was 5.0 persons. Overall awareness level on SAPs was low (56.4%), crop rotation with mean value of 0.62 was the most practiced SAPs, however, the overall involvement of respondents in SAPs was low (57.3%), and about half (50.4%) of the respondents were food insecure in the study area. Practice of mulching and composting (β = -0.22), and erosion control by terrace (β = -0.18) could have effects on household food insecurity. There was significant relationship between level of education and occurrence of household food insecurity (x^2 = 9.487). Therefore, level of education, improved practice of mulching, composting, and erosion control by terrace would enhance household food security. Hence, it is recommended that more awareness and training be facilitated on mulching, composting and erosion control by terrace to increase farmers' involvement and guarantee food security.

Keywords: Food insecurity, Involvement in sustainable agronomic practices, effects, rural household**.**

INTRODUCTION

Food security is a situation that exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life (Food and Agriculture Organisation (FAO), 2001). Danladi and Ojo (2018) reported that the concept of household food security is multidimensional. It integrates food stability, access, and availability of nutritionally adequate food for utilisation.

Most of the world food insecure countries are in Africa and many of these countries face severe poverty and hunger. Even in the continent, sub-Saharan African countries had highest prevalence in hunger, malnutrition and famine due to subsistence nature of agriculture, economic and political instability, and high population growth rate among others (Babatunde *et al*., 2007).

Much of the food in Asia and Africa is produced by smallholder farmers (FAO, 2014). However, smallholder farmers are the most affected by food insecurity (Barrett, 2010; World Bank, 2007). As reported by Amaza (2018), the most vulnerable group in Nigeria are the rural smallholder farmers, especially women and children in the marginal areas who do not have access to adequate quality of food they want.

In Nigeria, more than 65 per cent of the Nigerian population is said to be food insecure (Osagie, 2013). This assertion is in line with the report of FAO (2016), which posited that approximately 70% of the Nigerian population lives below poverty line, with resultant effect on food access.

Rural farmers' involvement in sustainable agronomic practices (SAPs) and diversifying agricultural production should expectedly guarantee adequate supply of nutritious food for a year round. Sibhatu and Qaim (2017) posited that it is well known that smallholder households typically consume a sizeable part of what they produce at home. However, increasing production diversity on smallholder farms through introduction of additional crop and livestock species can improve smallholder diets and nutrition through the subsistence pathway. The promotion and adoption of sustainable farm practices and improved agricultural technologies therefore offers an opportunity to increase production and income substantially, thereby reduce food insecurity (Nata *et al.,* 2014).

The subsistence nature of farming among rural households tend to make them unable to generate sufficient income and also put them at risk of losing access to food during the lean or off season. There exists a generally held notion that rural households have both physical and economic access to adequate food during the farming season. However, how much access they have to adequate food during lean or off season is not yet established.

Owing to depletion of household and market food stocks, increase in prices of staple

during lean or off season, the need to harp on potentials of SAPs in relation to rural household food access becomes imperative.

Specifically, the objectives are to:

1. determine rural households level of awareness about sustainable agronomic practices;
2. evaluate rural households level of involvement in sustainable agronomic practices;
3. assess the occurrence of household food insecurity; and
4. determine the effect of involvement in sustainable agronomic practices on food insecurity.

The hypothesis of the study is: There is no significant relationship between personal characteristics of respondents and food security status.

METHODOLOGY

This study was carried out in Obafemi Owode local government area, Ogun state with Owode town as its headquarters. The local government covers an area of 1,410 Km^2 with an estimated population of 228,851 people as at the 2006 census. The local government is administratively divided into twelve wards. The local government is located in Ogun Central Senatorial District, which borders Odeda local government and Oyo state to the North, Sagamu and Ikenne local government to the East, Ifo local government and Lagos state to the South (Thomas and Fadipe, 2018).

Multistage sampling procedure was used in selecting respondents. The first stage involved random selection of four wards from the twelve wards in the study area. Second stage involved the use of snowball sampling technique to identify two hundred and sixty household heads involved in farming. Finally, 45% of the identified household heads was randomly selected to give a sample size of 117 respondents. Questionnaire was used to elicit information from the farming households for the purpose of this study.

The degree of occurrence of household food insecurity was measured using Household Food Insecurity Access Scale (HFIAS) score. HFIAS score is a continuous measure of the degree of food insecurity in the household in the past four weeks (30 days). Nine frequency of occurrence questions were presented to the respondents. For these questions, no occurrence was assigned 0, rarely was assigned 1, sometimes was assigned 2, and often was assigned score of 3. The maximum score for a household was 27, while the minimum score was 0. Consequently, the average score (8.33) was used to categorize respondents into food secure and food insecure. Above the average score indicates food insecure household.

Descriptive statistics was used to analyse and present the variables in form of frequency, percentage, mean and standard deviation, while inferential statistics was used to test the hypotheses of this study. Multiple regression was used to analyse the effect of each of the sustainable agronomic practices on food security status. The regression model is stated below as:

$Y= a + b_1X_1 + b_2X_2 + ,\ldots,+ b_nX_n + e$

Where:

Y = the dependent variable (Household food security)

a = the coefficient of the constant term

B = (Beta coefficient) the coefficient of the independent variables

e = error term

X = the independent variables

X_1 = Crop rotation (Involved = 1, Not involved = 0)

X_2 = Mulching and composting (Involved = 1, Not involved = 0)

X_3 = Cover cropping (Involved = 1, Not involved = 0)

X_4 = Manure management (Involved = 1, Not involved = 0)

X_5 = Efficient use of fertiliser (Involved = 1, Not involved = 0)

X_6 = Agroforestry (Involved = 1, Not involved = 0)

X_7 = Integrated pest management (Involved = 1, Not involved = 0)

X_8 = Improved livestock management (Involved = 1, Not involved = 0)

X_9 = Diversion ditches and drainage channels (Involved = 1, Not involved = 0)

X_{10} = Irrigation (Involved = 1, Not involved = 0)

X_{11} = Water storage in the soil to increase soil moisture (Involved = 1, Not involved = 0)

X_{12} = Erosion control by terrace (Involved = 1, Not involved = 0)

RESULTS AND DISCUSSION

Personal characteristics of respondents

Result on Table 1 shows that, the mean age of respondents was 46.1 years, with more than half (53.0%) being between age 41-49 years. This suggests that household heads in the study area are adults in their active age, full of energy and with potentials that could be put to use in agriculture which is crucial in ensuring food security.

Similarly, Table 1 reveals that majority (76.1%) of the household heads in the study area were male. The result further shows that majority (86.3%) of the respondents were married. This suggests that household heads in the study area are likely to face expenditure burden on food items which may affect household food security as a

result of having additional member to feed and it further suggests marital equilibrium in the study area.

Result in Table 1 further shows that respondents' household size range between 2 to 9 household members, with average household size of 5 persons, while majority (75.2%) had 2-5 household members. This implies availability of farm labour and in contrast, large household size could lead to increase in household food consumption and consequently affect family expenditure. In a similar vein, the result shows that majority (92.3%) had formal education. This indicates a relatively high literacy level which could make the respondents receptive and comprehend improved agricultural practices and in turn translate to household food security.

Result on Table 1 reveals that most (76.9%) of the respondents engaged in agriculture as primary occupation. This implies that respondents rely on agriculture as an important economic activity in the study area. In addition, majority (76.1%) of the respondents belong to one or more agricultural associations. This suggests that information on improved agricultural practices to enhance food availability and access can be easily diffused in the study area.

The result on Table 1 further shows average farm size of 3.7acres, with majority (76.9%) cultivating between 1-4 acres, while others cultivated more than 4 acres of farm land. This suggests predominant practice of subsistence farming in the study area.

Table 1: Distribution of respondents by personal characteristics (N= 117)

Variables		Frequency	Percentage	Mean	SD
Age	≤40	26	22.2	46.1	7.5
	41-49	62	53.0		
	50-58	23	19.7		
	≥59	6	5.1		
Sex	Male	89	76.1		
	Female	28	23.9		
Marital status	Single	3	2.6		
	Married	101	86.3		
	Divorced	8	6.8		
	Widowed	5	4.3		
Household size	2-5	88	75.2	4.6	1.3
	6-9	29	24.8		
Level of education	No formal education	9	7.7		
	Primary education	35	29.9		
	Secondary education	57	48.7		
	Tertiary education	16	13.7		
Primary occupation	Farming	90	76.9		
	Trading	11	9.4		
	Civil servant	5	4.3		
	Artisan	11	9.4		
Secondary occupation	Not applicable	54	46.2		
	Farming	20	17.1		
	Trading	31	26.5		
	Artisan	12	10.3		
Years of farming experience	5-14	59	50.4	15	6.9
	15-24	57	4.2		
	≥25	11	9.4		
Estimated monthly income (₦)	< 50000	42	35.9	56965.8	19047.1
	50000 -100000	74	63.2		
	>100000	1	0.9		
Member of association	Yes	89	76.1		
	No	28	23.9		
Farm size (Acres)	1-4	90	76.9	3.7	1.2
	>4	27	23.1		

SD: Standard Deviation
Source, Field survey (2018)

Awareness of respondents on sustainable agronomic practices

From Table 2, the mean score shows that respondents were more aware of irrigation (0.98), followed by crop rotation (0.74); as well as diversion ditches and drainage channels (0.68). This shows that respondents have information that would enhance their skills in soil and water management and subsequently lower water demand. This agrees with Singh and Grover (2013), who posited that in sustaining agriculture to enhance provision of food, it is the responsibility of extension agents to disseminate best practices and innovation.

Table 2: Distribution of respondents based on awareness of sustainable agronomic practices (N= 117)

Sustainable agricultural practices	Mean	Rank
Crop rotation	0.74	2nd
Mulching and composting	0.41	7th
Cover cropping	0.39	8th
Manure management	0.48	5th
Efficient use of fertiliser	0.48	5th
Agroforestry	0.57	4th
Integrated pest management	0.35	11th
Improved livestock management	0.37	10th
Diversion ditches and drainage channels	0.68	3rd
Irrigation	0.98	1st
Storing water in reservoir to allow it sink into the soil and increase soil moisture	0.30	12th
Erosion control by terrace	0.38	9th

*Multiple responses
Source: Field survey, 2018

Respondents' involvement in sustainable agronomic practices

Using the mean score to rank the order which respondents were involved in SAPs, Table 3 shows that crop rotation was practiced more (0.62), followed by practice of diversion ditches and drainage channels (0.41) than other sustainable agronomic practices.

Overall, Table 4 reveals that more than half (57.3%) of the respondents reported low level of involvement in SAPs in the study area. This implies that the low level of involvement in SAPs was due to inadequate information and knowledge of sustainable agricultural initiatives. This is in agreement with Okoba and De Graff (2005) who posited that farmers' lack of knowledge of soil management is one of the reasons for the low practice of SAPs.

Table3: Distribution of respondents based on involvement in sustainable agronomic practices (N= 117)

Sustainable agricultural practices	Mean	Rank
Crop rotation	0.62	1st
Mulching and composting	0.39	3rd
Cover cropping	0.28	11th
Manure management	0.29	10th
Efficient use of fertiliser	0.39	3rd
Agroforestry	0.33	7th
Integrated pest management	0.37	6th
Improved livestock management	0.39	3rd
Diversion ditches and drainage channels	0.41	2nd
Irrigation	0.30	9th
Storing water in reservoir to allow it sink into the soil and increase soil moisture	0.34	8th
Erosion control by terrace	0.16	12th

Source: Field survey, 2018

Table 4: Categorization of respondents' level of involvement in sustainable agronomic practices (N= 117)

Level of involvement	Frequency	Percentage
Low level (below mean)	67	57.3
High level (mean and above)	50	42.7

Source: Field survey, 2018mean = 4.29

Occurrence of household food insecurity

Considering occurrence of food insecurity in the study area, the mean score was used to show the degree of occurrence. Table 5 reveals that respondents had worry that their household members would not have enough food to eat, and household member(s) had to eat smaller meal than they felt needed (1.39), followed by household members not able to eat the kind of food preferred due to lack of resources (1.06).

Consequently, Table 6 shows that slightly more than half (50.4%) of the households were food insecure. Thus, it can be inferred that although the gap between food secure and insecure households is close, there is occurrence of food insecurity in the study area. This suggests that if adequate information on sustainable agricultural practices is disseminated, and more farming households are involved in the practice of sustainable agriculture, occurrence of food insecurity may reduce. This corroborates Nata *et al.* (2014) who posited that promotion and adoption of sustainable farm practices offers an opportunity to improve productivity and income substantially, and reduce food insecurity.

Table 5: Distribution of respondents' degree of occurrence of household food insecurity access (N=117)

Food insecurity access statements	No occurrence	Rarely	Sometimes	Often	Mean	Rank
Anxiety and uncertainty about the household food supply						
In the past four weeks, did you worry that your household would not have enough food?	34.2	11.1	35.9	18.8	1.39	1st
Insufficient Quality (includes variety and preferences of the type of food)						
In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	41.0	14.5	41.9	2.6	1.06	3rd
In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	48.7	11.1	35.9	4.3	0.96	6th
In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	44.4	17.1	30.8	7.7	1.02	5th
Insufficient food intake and its physical consequence						
In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	39.3	10.3	23.1	27.4	1.39	1st
In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	47.	14.5	24.8	12.8	1.03	4th
In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	74.4	19.7	5.1	0.9	0.32	8th
In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	44.4	27.4	23.9	4.3	0.88	7th
In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	82.1	9.4	6.0	2.6	0.29	9th

Source: Field survey, 2018

Table 6: Categorization of respondents' household food security status (N= 117)

Food security status	Frequency	Percentage
Food secure(below mean)	58	49.6
Food insecure(above mean)	59	50.4

Mean = 8.33

Source: Field survey, 2018

Effects of sustainable agronomic practices on respondents' food security status

Table 7 shows that practice of mulching, and erosion control by terrace could enhance household food security at ($p \leq 0.05$ and $p < 0.10$) respectively. These accounted for 46% variation in food security in the study area. The negative value of mulching (β = -0.22), and erosion control by terrace (β = -0.18) respectively suggests that the less the practice of these sustainable agronomic practices, the more the household food insecurity. This is in agreement with Olarinre*et al.* (2019) who posited that the more farmers engaged in sustainable agricultural practices, the less food insecure they become.

Table 7: Regression analysis of effect of sustainable agronomic practices on household food insecurity

Variables	Beta	T	Sig (p)
Crop rotation	-0.106	-1.144	0.255
Mulching and composting	-0.223	-2.319	0.022**
Cover cropping	-0.077	-0.841	0.402
Manure management	-0.025	-0.251	0.802
Efficient use of fertiliser	-0.138	-1.442	0.152
Agroforestry	-0.057	-0.593	0.555
Integrated pest management	0.069	0.674	0.502
Improved livestock management	0.144	1.501	0.136
Diversion ditches and drainage channels	0.059	0.585	0.560
Irrigation	0.094	0.969	0.335
Storing water in reservoir to allow it sink into the soil and increase soil moisture	-0.153	-1.591	0.115
Erosion control by terrace	-0.181	-1.914	0.058*

**Significant at ≤ 0.05 level, *Significant at < 0.10 level. R^2 = 0.144Adjusted R = 0.046

Relationship between personal characteristics and household food security

The result on Table 8 shows significant relationship between respondents' level of education and household food security (x^2 = 9.487). This implies that education could make farmers receptive to agricultural initiatives which in turn improve productivity if practiced and enhance household food security.

Table 8: Chi-square analysis between selected personal characteristics and food security

Variable	N	χ^2-value	df	p-value
Sex	117	0.146	1	0.703
Marital status	117	2.214	3	0.503
Level of education	117	9.487	3	0.023**

**Significant at p<0.05

CONCLUSION AND RECOMMENDATIONS

The study concluded that the rural households had low awareness of sustainable agricultural practices. There was also low involvement in sustainable agricultural practices. However, the practices of mulching and erosion control could enhance household food security. The study thus, recommend that more awareness on sustainable agriculture should be created, this could increase the practice of sustainable farming in the rural areas and consequently improve household food availability, access and utilisation. In addition, awareness and training should be facilitated on mulching, composting and erosion control by terrace to enhance food security in the study area.

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ATTITUDE OF OPENFIELD TOMATO FARMERS TOWARDS POSTHARVEST HANDLING ACTIVITIES OF THE CROP IN KANO STATES, NIGERIA

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ABSTRACT
Postharvest losses of tomato in Nigeria are high due to poor postharvest handling activities. Attitude of openfield farmers towards postharvest handling activities of tomato in Kano state was examined. Multistage sampling procedure (purposive and random sampling) was used to select 213 tomato farmers. Interview schedule was used to obtain data on respondents' personal and enterprise characteristics as well as their attitudinal disposition towards postharvest handling activities of tomato. Age of open-field farmers was 47.7±7.6 years, majority (92.0%) of the open-field farmers were married with 16.8±6.9 years of farming experience. Larger percentage (66.2%) of openfield farmers inherited their farmland and majority (74.2%) of openfield farmers generated their working capital through personal savings. Majority (60.1%) of openfield farmers were not favourably disposed to postharvest handling activities of tomato. Majority (54.9%) of open-field farmers incurred high rate of tomato postharvest losses. There was significant relationship ($r = -0.152$, $p<0.05$) between openfield farmers' attitude towards postharvest handling activities of tomato and the rate of postharvest losses incurred. The study therefore recommends that, since attitude and rate of postharvest losses are correlated, government and other NGOs should organise seminars and training on postharvest handling activities for openfield farmers to influence their attitudinal disposition towards postharvest handling activities of tomato to ensure reduction in the rate of tomato losses for improved rural livelihood and adequate food security.

Keywords: Postharvest handling activities, Tomato postharvest losses, Open-field farmers

INTRODUCTION

Postharvest losses of fruits and vegetables are estimated at about five to twenty percent in technologically advanced countries and twenty to fifty percent in less developed and developing countries (Mashav, 2010). In Nigeria alone, postharvest losses of fruits and vegetables amounts to about thirty-five to forty-five percent of the total annual production because postharvest handling activities of fruits and vegetables are not practiced by stakeholders involved (farmers and marketers). It was recorded that about sixty percent of tomato in Nigeria is lost due to high occurrence of pests and diseases as well as inadequate postharvest handling activities (FAO, 2011).

Nigeria is one of the largest producers of tomato and other fruit vegetables grown in its several agricultural and ecological zones. This is because the country is blessed with fertile farmland that supports the growth of crops every year. These agricultural products are lost at rapid rate of thirty to fifty percent annually due to improper postharvest handling activities. In Africa, the losses are even higher between thirty and fifty percent and occur mainly along the supply chain, where fruits and vegetables losses are estimated to be fifty percent or more (FAO, 2011). Fruits and vegetables are major sources of vitamins and minerals essential in human diet. However, the dietary values of horticultural crops mostly fruits and vegetables are greatly affected by postharvest handling activities as they are usually harvested when fresh with high moisture content which makes their management difficult. It is especially so in the tropical regions where the temperature is very high when compared with the temperate regions (Sablani, Andrew, Davies, Walter and Mohekar, 2010).

The population of the world in general is increasing at an alarming rate, it is estimated to reach about 8.6 billion by the year 2030. This increase is likely to approach 9.8 billion by the year 2050 and 11.2 billion by the year 2100. This population explosion will further increase food security concerns specifically in the developing and under developed nations of the world (United Nations Department of Economic and Social Affairs, UNDESA, 2017). Most importantly, the predictable increase in the world's population could be credited to high fertility rate in most of the developing countries, or with countries with already large populations. This population growth translates into thirty-three percent more people to be fed with the greatest demand growth in the poor communities of the world. As a result of this, food supplies needed to be improved by sixty percent to meet the food demand by the year 2050. Availability and accessibility to food would increase by producing more food, improving food distribution, and reducing the rate of postharvest losses of food along the supply chain. Thus, reduction of food losses is a critical factor of ensuring future adequate food security. Universal efforts in combating hunger among the Nigerian populace, raising handlers' income and livelihood to improve food security especially in the world's

poorest countries should give priority to the concern of food postharvest losses (United Nations (UN), 2013; Alexandratos and Bruinsma, 2012; Food and Agricultural Organisation (FAO), 2010 and Department of Economic and Social Affairs (DESA), 2010).Globally, about one–third of food produced for human consumption is lost along the supply chain of food distribution which aggregates to almost 1.3 billion tonnes annually (Gustavsson, Sonneson and Meybeck, 2011). About thirty to forty percent of food produced in the world are never consumed as a result of spoilage and rottening caused by pests and diseases which affect food crops during and after harvest. Postharvest losses of food is therefore regarded as one of the major causes of food insecurity in developing countries. Nigeria, for instance, is losing about 2.4 billion tonnes of food annually as a result of inadequate postharvest handling activities. Thus, the losses connected with the inefficient postharvest handling activities limit the prospective earnings of farmers and marketers; lowers farmers' and marketers' standard of living; threatens all the components of food security and increase conditions of poverty among rural households whose revenue sources depend exclusively on capability to preserve extra farm produce for future use (Okoruwa, Ojo, Akintola, Ologhobo and Ewete, 2010).

However, production of bulk of fresh tomato fruits takes place in the Northern part of Nigeria where it is grown extensively under irrigation system, but it is quite unfortunate that tomato is not only a seasonal crop but highly perishable. It deteriorates few days after harvest thereby losing almost all the required qualities and could result to total waste. It is against this background that this study examined the following objectives:

The general objective of this study was to determine the openfield farmers' attitude towards postharvest handling activities of tomato in the study area, while the specific objectives were to;

1. ascertain the socioeconomic characteristics of the respondents in the study area;
2. determine respondents' attitude towards postharvest handling activities of tomato
3. discover the rate of postharvest losses of tomato incurred by the respondents in the study area

The hypotheses of the study are;

$H_0$1: There was no significant relationship between the respondents' socioeconomic characteristics and the rate of losses incurred.

$H_0$2: There was no significant relationship between respondents' attitude towards postharvest handling activities of tomato and the rate of losses incurred.

METHODOLOGY

The study was carried out in Kano State, Nigeria. Kano State is located between latitude $10^0$35' and $13^0$02' north and between longitude $7^0$30' and $10^0$35' east and as such it is part of Sudano - Sahelian zone of Nigeria. Mean annual rainfall in Kano State fluctuates from South to North, between 780mm and 1000mm. Temperature varies sharply depending on the season, reaching up to 38^{o}C and 40^{o}C when it is hot and as low as 25^{o}C in the wet season. The rainy season starts from June to September, while the dry season starts from October to May.

Multistage sampling procedure was used to select the respondents for the study. There was purposive selection of Kano state based on the comparative advantage in tomato production. Purposive sampling technique was also used to select 20% of LGAs prominent in tomato production from the state. Three LGAs in Kano state (Bukunre, Makoda and Garunmallam) were selected for the study. Thereafter, 10% of the wards in selected LGAs (Tsambaki, Satame Jigawa and Dakasoye wards from Kano State were randomly selected to give six wards. Lastly, 5% of the registered tomato farmers in each ward were randomly selected for the study to give a total of two hundred and thirteen (213) Openfield tomato farmers. Data was collected from the respondents using interview schedule. Data obtained were analysed using descriptive statistics (frequency and percentage) and hypotheses of the study were tested using Pearson Product Moment Correlation (PPMC).

The attitude of openfield farmers towards postharvest handling activities of tomato was measured using five point Likert-type scale of Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree. Scores of 5, 4, 3, 2, and 1 were assigned for positive worded statements and was reversed for the negative worded statements. Socioeconomic characteristics of the respondents were measured at ordinal, nominal and interval levels. Respondents' attitude was measured using scores generated and the mean obtained. The mean was then used to categorize the respondents. Therefore, scores within and above the mean were termed favourable while scores below the mean value were termed unfavourable.

RESULTS AND DISCUSSIONS

Socioeconomic characteristics

Result on Table 1 reveals that majority (54.9%) of the respondents were between the ages of 41and 50 years, with the mean age of 47.7 years. This suggests that the farming population is still active and the finding is in line with that of Tyabo, Ibrahim, Nadanista and Umar (2014) who reported the mean age of 48 years for farmers in related studies across the agricultural zones of Nigeria. It

was also found that majority (94.4%) of the respondents were male. This implies that more males were involved actively in tomato production in the area. This could be linked with the major roles men play in crop production most especially in production and marketing of fruits and vegetables, because of direct ownership of land required for farming in which men have higher advantage than women. The finding is in consonance with earlier study by Azarian, Hassan and Abu (2012) who reported that farming was dominated by men.

The study also found that most (92.0%) of the respondents were married. The findings agree with Suleiman and Jafar-Furo (2010) who recorded higher percentage of married men in vegetable farming and marketing in Niger State of Northern Nigeria. The result shows that 35.2% of openfield farmers had between 1 – 2 acres of tomato farmland. This suggests that tomato farmers in the study area were small holder farmers. This is consistent with the findings of Soneye (2014) in a related study where a large percentage of the farmers had small farm size of less than two acres for tomato farming.

Table 1: Distribution of selected respondents' enterprise characteristics (n = 231)

Variable description	Openfield Farmers (n=213)		
Age (Years)	**F**	**%**	**Mean**
31 – 40	55	25.8	
41 – 50	117	54.9	47.7± 7.6
51 – 60	30	14.1	
≥ 61	11	5.2	
Sex			
Male	201	94.4	
Female	12	5.6	
Marital status			
Single	4	1.9	
Married	196	92.0	
Divorced	13	6.1	
Size of tomato farm (acres)			
≤ 1	65	30.5	
1.0 – 2	75	35.2	4.1±27.3
2.0 – 3	53	24.9	
3.0 – 4	16	7.5	
> 4	4	1.9	
Qty produced (kg)			
≤ 5000	115	54.0	52.056±35.335
5001 – 10000	42	19.7	
10001 – 15000	30	14.1	
15001 -20000	25	11.7	
> 20000	1	0.5	
Years of formal Education			
Primary school	86	40.4	
Secondary school	78	36.8	
Tertiary education	6	2.8	
Non-formal	43	20.2	
Land acquisition			
Inherited	141	66.2	
Leased	75	35.2	
Purchased	128	60.1	
Years of experience			
≤ 10 years	43	20.2	
11-20	133	62.4	
21-30	32	1.5	
31-40	5	2.3	

The result from Table 1 also reveals that little above the average (54.0%) of the respondents produced tomato of less than 5000kg in the year 2016. The reason for low production was as a result of the outbreak of the disease, Leaf miners (*Tuta absoluta)* that surfaced at the peak of tomato

maturation and harvesting and other diseases that attack tomato on the field. The study further reveals that majority (66.2%) of openfield farmers acquired their farmland by inheritance. This implies that respondents have direct access to farmland without additional costs. The study also found that majority (62.4%) of the respondents had between 11 to 20 years of farming experience. This implies that openfield tomato farming and marketing is an age long profession of the respondents in the study area. This findings is also in line with that of Usman, Mani and Mohammed (2015) in a related study where it was reported that farmers had up to 11 – 20 years of farming experience in fruit farming. Larger proportion (40.4%) of the respondents had primary education.

Respondents' attitude towards postharvest handling activities of tomato

Attitude of openfield farmers has been assessed on postharvest handling activities (harvesting, precooling, sorting and grading, storage, packaging, processing and transportation). The result from Table 2a shows that 98.1% of farmers agreed that harvesting of tomato is best done at the cool period of the day. Majority (77.0%) of agreed that harvesting of overripe tomato will lead to postharvest losses. Few (30.0%) of the farmers consented that precooling is necessary to reducing losses, only 46.0% agreed that precooling reduces the activity of microbial organisms. This implies that majority of the farmers have no understanding of the effects excessive heat has on fresh tomato. More so, few (46.4%) of the farmers agreed that sorting and grading prevents rottening of fresh tomato. Majority (73.3%) of the farmers also agreed that packaging of fresh tomato should be done with the use of suitable materials. However, 24.9% agreed that chilling injury before storage should be reduced to minimize the rate of losses. larger percentage (55.4%) of the farmers were of opinion that bad road network causes postharvest losses of tomato and 67.7% agreed that they make use of dry season to dry their tomato to reduce losses.

Table 2b summarized the respondents' attitude towards postharvest handling activities of tomato where it shows that majority (60.1%) of openfield farmers had unfavourable attitude towards postharvest handling activities, while only few (39.9%) had favourable attitude to postharvest handling activities of tomato. The reason for openfield farmers' unfavourable disposition could be as a result of their low level of education which limits their accessibility to useful information on postharvest handling activities of tomato in the areas of processing and storage. This agrees with Ladapo, 2010, in a related study where majority of the plantain farmers in southwestern Nigeria had unfavourable attitude towards postharvest handling activities of plantain.

Table 2a: Attitude of openfield farmers towards postharvest handling activities of tomato

Attitudinal statements	SD	D	U	A	SA
Harvesting activities					
Harvesting of tomato is best done at the cool period of the day	0	0	1.9	36.2	62.0
Harvesting of overripe tomato will lead to postharvest losses	20.7	0.5	1.9	36.6	40.4
Precooling activities					
Precooling is not a necessary step in reducing losses	6.1	23.9	41.8	4.7	23.5
Precooling does not reduce the activity of microbial organisms	2.3	43.7	24.4	1.4	28.2
Sorting and grading					
Grading of tomato is not necessary, it is only waste of time	3.8	33.3	2.8	34.7	25.4
Sorting does not prevents rotten of fresh tomato	2.3	44.1	1.4	25.4	26.8
Packaging activities					
Packaging is not an important in reducing losses of tomato	25.4	45.5	14.6	6.6	8.0
Use of suitable packaging materials help to reduce losses	1.4	0.9	24.4	8.5	64.8
Storage activities					
I do not need to monitor environmental temp to reduce losses	12.2	6.1	50.7	24.9	6.1
Reducing chilling injury to tomato before storage is essential	14.1	15.0	46.0	16.0	8.9
Transportation activities					
I will rather sell my tomato than spend on a refrigerating van	25.8	38.5	2.8	0	32.9
Bad road network does not cause postharvest losses of tomato	3.3	52.1	4.2	13.1	27.2
Processing activities					
Sun drying of tomato does not reduce losses	13.6	11.7	23.0	17.4	34.3
I take advantage of the weather during the dry season to sundry tomato	4.7	12.2	16.0	38.0	29.1

Table 2b: Attitude scores of openfield farmers on various postharvest handling activities of tomato, n=213

Attitude to Postharvest Handling Activities	Open field farmers (n=213)	
	F	%
Unfavourable	128	60.1
Favourable	85	39.9
Mean ± SD:	137.76 ± 7.89	
Minimum:	118.00	
Maximum:	162.00	

The rate of postharvest losses incurred by openfield farmers

The distribution on the rate of postharvest losses incurred by the respondents from Table 3 shows that, majority (54.9%) of openfield farmers incurred high rate of postharvest losses while few (45.1%) incurred low rate of postharvest losses. This may be as a result of their low level of education leading to unfavourable disposition toward postharvest handling activities of tomato.

Table 3: Distribution of respondents by the rate of tomato postharvest losses incurred

Rate of postharvest losses incurred	Openfield Farmers (n=213)	
	F	%
Low level of postharvest losses	96	45.1
High level of postharvest losses	117	54.9
Mean	137.76	
SD	7.90	

Relationship between socioeconomic characteristics and rate of postharvest losses incurred

The result (Table 4) shows that there is significant relationship between respondents' level of education ($r= -0.173$, $p<0.05$), years of farming experience ($r = -0.163$, $p<0.05$), size of tomato farm ($r = -0.279$, $p<0.05$), quantity produced ($r = 0.272$, $p<0.05$) and the losses incurred. Openfield farmers' level of education influence their attitude negatively towards postharvest handling activities which results into high losses. More so, years of experience, size of tomato farm and quantity produced were significantly related to the rate of losses incurred by openfield farmers. This implies that the higher the level of education, the lower the rate of losses. However, the higher the quantity produced the more the rate of losses due to inadequate processing and storage facilities around the production centres where tomato could either be processed or stored for future use

Variables	Openfield farmers (n = 213)		
	r- value	p-value	Decision
Age	0.050	0.467	Not significant
Education	- 0.173	0.041	Significant
Years of experience	-0.163	0.032	Significant
Income from tomato	0.081	0.240	Not significant
Income from other sources	0.006	0.929	Not significant
Size of tomato farm(acres)	0.279	0.042	Significant
Quantity produced (kg)	0.272	0.045	Significant

Relationship between respondents' attitude toward postharvest handling activities of tomato and rate of postharvest losses incurred

The result from Table 4 shows that attitudinal disposition of openfield farmers towards postharvest handling activities of tomato was significantly related ($r = -0.152$, $p<0.05$) to the rate of postharvest losses they incurred in tomato production. This implies that attitude of the openfield farmers dictates the rate of postharvest losses they incurred. This suggests that positive attitude towards postharvest handling activities will bring about reduction in the rate of postharvest losses incurred. This findings corroborated with Ladapo, 2010 on related study.

Table 4 shows that attitudinal disposition of openfield farmers towards postharvest handling activities of tomato and postharvest losses

Variables	Openfield Farmers (n = 213)		
	r– value	p- value	Decision
Attitude to postharvest handling activities of tomato vs. postharvest losses	-0.152	0.027	Significant

CONCLUSION

The results showed that majority of the respondents were male, married, had low level of education and the farmland used for tomato was small and inherited. Attitudinal disposition of respondents towards various postharvest handling activities of tomato was not favourable and this led to high rate of losses they incurred in tomato. Also, openfield farmers' level of education influence their attitude towards postharvest handling activities negatively which resulted into high rate of postharvest losses. More so, years of experience, size of tomato farm and quantity produced were significantly related to the rate of losses incurred by openfield farmers.

The study therefore recommends that, farmers should be encouraged to enrol in adult education classes in order to acquire basic skills of education which could influence their attitude towards postharvest handling activities of tomato to reduce the rate of losses. From the study, it was found that respondents' attitude and the rate of postharvest losses were significantly related. Therefore, government and other NGOs should assist the farmers in the area of education (Adult literacy) to make them to read and write. This will affords them the opportunities to access useful information on postharvest handling activities to improve their rural livelihood and ensure adequate food security.

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INFLUENCE OF SCAVENGED FOOD ON HEALTH STATUS OF FOOD SCAVENGERS AMONG RURAL HOUSEHOLDS OF ARAMOKO EKITI, EKITI STATE, NIGERIA

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ABSTRACT
Food insecurity and poverty among households has led some households to food scavenging. This study assessed the factors associated with food scavenging amongst rural households in Aramoko Ekiti. The specific objectives were to describe the socio economic characteristics of the identified food scavengers, determine the influence of the scavenged food on their health status and describe the dietary Diversity of the identified food scavengers in Aramoko Ekiti.Purposive sampling technique was used to select 30 food scavengers who were consistently spotted at social gatherings; data was collected through the use of interview schedule. Focus group discussion was used to measure the quantitative data. Data was analysed using descriptive statistics. Results show that 56.7% of the food scavengers were female with the mean monthly income of N2,100.00. Body Mass Index shows that most (88.9%) of the food scavengers were within the normal range of 18.5 – 24.99. Majority (76.7%) of the food scavengers had low dietary diversity. Major determinants of food scavenging were insufficient family resources (73.3%), poverty (56.7%) and unstable home environment (53.3%). Majority (66.7%) of the respondents were identified to be consistent food scavengers. Respondents' household size (χ^2=6.00), education (χ^2=20.40), food expenditure (χ^2=5.17), unstable family background (χ^2=12.26,) were significantly related to food scavenging. The food scavengers' low dietary intake is due to small monthly income earned and insufficient family resources, this compelled them to compromise the standard and quality of food they consumed therefore the identified food scavengers should be supported through extension service education and other incentives that will assist them in farming in order to alleviate their poverty level.
Keywords: Food scavengers, Rural households, Body Mass Index (BMI) Poverty and Dietary diversity.

INTRODUCTION

In order to avert the inadequate supply of food to meet the requirement of family consumption, food scavenging has been used as an alternative to achieving food security by rural households. Food is the most basic needs for man which must be available both in quality and quantity at the needed time to sustain life and promote human growth (FAO, 2010). Hence it is very important for human existence. According to FAO (2012), food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Research findings reveal that most of the rural populace are food insecure and suffer from malnutrition and diseases. According to Gebre (2012) and Sasson (2012), food insecurity has attracted much attention from programme implementers and policy makers due to the high impact of hunger and malnutrition on people. Lomborg 2004 noted that eliminating hunger and malnutrition is one of the most fundamental challenges facing humanity. According to Okwoche and Asogwa (2012), rural farmers have the highest prevalence of under nutrition and estimated that about 66% of Nigeria's populations live below poverty line as portrayed by their level of food security. Going by this definition, it could be said that most rural Nigerian households are not food secure because they do not consume the right proportion of food at the needed time for a healthy and active life. Food Security Guide (2011) emphasizes that poverty is the driver of food insecurity and that lack of money precludes the purchase of food. Kpakol (2008), define poverty as the inability of a person to acquire the empowerment needed to substantively control the challenges of the environment. Therefore, people involved scavenged for food in order to ensure they meet their households consumption needs neglecting the fact that the calories consumed is not up to the recommended average calories of 2,550 kcal (World Bank, 2005). However, these have effect on their health status resulting to either underweight or overweight. Lokosang (2011), stated that the risk of inadequate access to food is determined by household's capacity to produce food, household purchasing power and several other socioeconomic factors that directly or indirectly affect these three major factors. Food scavenger refers to someone who collects food that have been discarded by others or excess food from parties (invited or non-invited), and/or searches through refuse bins for food and useful materials such as money and clothing. Although, they cannot be regarded to as the poorest among the people in their community, their occupation is generally ascribed to the lowest status where they are.

In Nigeria like other developing countries varying number of poor individuals survive by scavenging for food at ceremonies. These people recover materials such as plastic and bottles to sell

for reuse. They may build up their "stands" in hotels, restaurants, and food shops. Foods gathered are used to sustain their family. Many children and older individuals survive by food scavenging due to their low educational level and due to the difficulty of parent in performing a paid service while taking care of their children. According to Genemo (2010), some families cannot survive without the contribution of every member of the family. Muktar (2011) stated that in Nigeria, like other developing countries, scavenging among youths begins with the collection of plastic bottles and cans, and it mostly takes place in the informal sector. In rural areas of Nigeria due to their culture, food scavengers are not permanent beggars but on the contrary; they normally hold their jobs but intermittently practice begging at ceremonies.

Based on the foregoing, this study assessed the factors associated with food scavenging amongst rural households of Aramoko Ekiti. The specific objectives were to:

1. describe the socio economic characteristics of the identified food scavengers.
2. determine the influence of the scavenged food on their health status.
3. describe the dietary Diversity of the identified food scavengers in Aramoko Ekiti.

METHODOLOGY

The study area is Aramoko Ekiti, Ekiti State Nigeria. Purposive sampling techniques were used to collect responses from consistent 30 food scavengers at social gatherings, those identified were followed through their daily activities to collect the necessary information for the study. Data was collected through the use of structured interview schedule and focus group discussion was used to measure the quantitative data. Body mass index was used to determine the influence of scavenged food on health status of the respondents.

BMI= $\frac{weight_{Kg}}{height_{m}^{2}}$

A BMI of 18.5 is underweight, 18.5 to 25 is normal weight, 26 to 30 is overweight and over 30 is obese for adult and for children of age 2 to 20 a BMI that is less than the 5th percentile was considered underweight, between 5^{th} percentile and 84^{th} percentile is normal weight, 85^{th}- 95th percentile are considered to be overweight and above the 95th percentile was considered obese. World Health Organisation International Classification 2010 was used for comparative purposes.

Also, the 24-hour dietary recall was used as a reference period to measure household dietary diversity (a proxy for quality of diet) as used by Okwoche, and Asogwa 2012. Data for household dietary diversity was collected by asking the respondents yes and no questions on 12 food groups. Each item was scored 1 if the household had eaten the food group during the previous 24 hours and 0 otherwise. The sum of the value of a response qualified the indicator for each household. A household with dietary diversity of 8 points and above was regarded as having high dietary diversity while those below 8 Points was regarded as having low dietary diversity.

RESULTS AND DISCUSSIONS

Socioeconomic characteristics of respondents

The result in Table 1 reveals that that majority (60.0%) of the food scavengers in the study area were between the age of 25 and 50years, with a mean of 36years. Most of the identified food scavengers were female (56.7%) and married (66.7%) with a large households size of more than five persons. They have no formal education (40.0%), hence they do not have a stable occupations; they do mainly odd jobs with meager earning of less than N5, 000 per month.

Most of the respondents (56.7%) were female who are still in their active age between 25-50years. At this age bracket, they are expected to be willing to take risk and easily strive for a livelihood to have food so as to feed their families. People in this group bear the financial burden of providing food and non-food items for their households which lead them into food scavenging. Most of the identified food scavengers (40.0%) had no formal education. Education has an important role to play in an individual's life, it predisposes the individual to innovation on how to change life pattern and acquaint them with various knowledge for livelihood diversification. This is consistent with Falowo and Adebo (2014) that high educational status is expected to predispose the food scavengers to innovations and better ways to cope with food insecurity challenges.

Majority of the food scavengers (73.3%) had more than 3 persons per family but depended on a monthly income of less than N5,000 out of which they can afford to spend less than N1,500 ($5) per month on food items due to their meagre earning which resort them to food scavenging. The implication is that with the meagre earning and fairly large household size to buy good food in the right quality and taken in the right proportion (having the correct nutritional requirement) is low among the households of the identified food scavengers which indicate that calories and protein consumed by these household members fall short of the standard requirements. This analysis agrees with Idrisa, Gwary and Shehu (2008), that both family size and level of income could affect the food security status of the family. Ndhleve *et al.,* (2012) noted that income influences consumption

up to a certain level. According to the response of one of the respondents,

"Before my husband died we have already given birth to four children, since I have no job and do not know how to cope with my life, my late husband brother inherit me. I had two additional children for him before he left. I am married to another man with children and the man does not know and care about how I live. I have a large family size without an occupation except washing clothes".

Table 1: Socio economic characteristics of the food scavengers in Aramoko Ekiti (n =30)

Socio economic characteristics	Frequency	Percentages (%)	Mean
Age			
<25	7	23.3	
25-50	18	60	36 years
>50	5	16.6	
Sex			
Male	13	43.3	
Female	17	56.7	
Marital Status			
Single	6	20	
Married	20	66.7	
Divorced	2	6.6	
Widowed	2	6.6	
Educational Status			
No formal education	12	40	
Primary	10	33.3	
Secondary	6	20	
Tertiary	1	3.3	
Others	1	3.3	
Household Size			
<3	8	26.7	
3-5	11	36.7	
5-8	4	13.3	5 persons
>8	7	23.3	
Occupation			
Farming	0		
Civil servant	2	6.7	
Trading	5	16.6	
Odd jobs	23	76.7	
Income			
<N5000	14	46.7	
N5,000-N10,000	12	40	N2,100
N10,000-N15,0000	2	6.7	
N15,000-N20,000	2	6.7	

Influence of Scavenged Food on the Health Status of Scavengers

The Body Mass Index was carried out for the identified food scavenger's household's members and the World Health Organisation International Classification (2010) was used to assess the impact of scavenged food on their health status. The result in table 2 shows that majority (88.8%) of the identified food scavengers has normal body weight while few of them (11.2%) fell within underweight and mild thinness. This implies that the scavenged food does not have negative effect on most of the respondent's health status. It was also revealed that they rarely come across health problems like diarrhoea, stomach upset and typhoid as a result of their food intake which signifies that their body system has become adapted to any kind of food consumed. For the few ones that are negatively affected with the scavenged food, it is recommended that there should be addition of more proteinous food such as beans and fish in order to improve their health status. According to Gorselink (2012), protein plays an important role in body weight regulation and potential treatment of obesity.

Table 2: Body Mass Index of Adult and children Food scavengers in Aramoko Ekiti

	Frequency	Percentage
Adult		
Normal weight	36	26.6
Mild thinness	6	4.5
Children		
Underweight	6	4.5
Normal weight	84	62.2
overweight	3	2.2

Household dietary diversity of the identified food scavengers in Aramoko Ekiti

The distribution of the dietary diversity scores among the identified food scavengers is presented in figure 1. The result shows that majority (76.7%) of the food scavengers has low dietary diversity while few (23.3%) has medium and high dietary diversities respectively. The identified food scavenger that has low dietary diversity consumed less than eight foods out of the listed thirteen food items within 24 hours and the food consumed is of low quality.

They consumed more of carbohydrate food (such as *Garri, Fufu, Eba, Rice* etc.) with little protein. This implies that food security is not an issue to them but rather how to survive hunger. It is recommended that most of the identified households with low dietary diversity should maintain adequate balanced diet by adding little protein to their daily food.

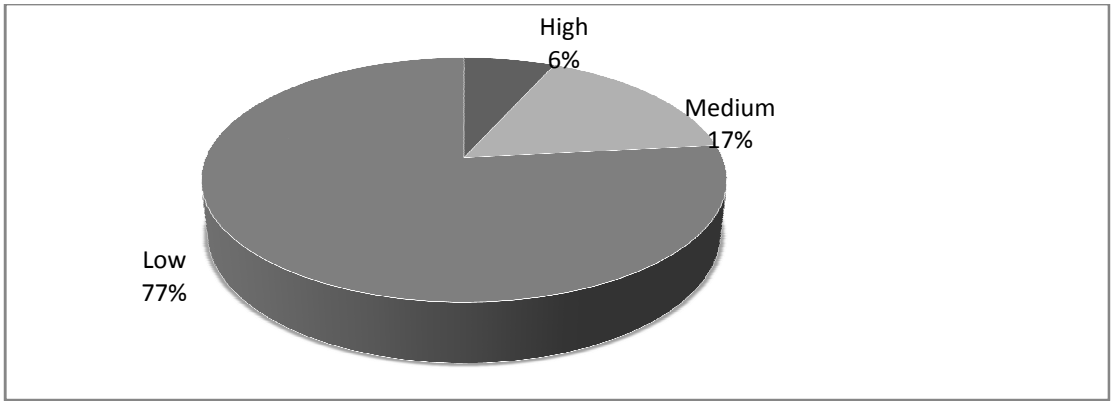

Figure 1: Households Food Dietary Diversity of the Identified Food scavengers in Aramoko Ekiti

CONCLUSION AND RECOMMENDATION

Most of the identified food scavengers in the study area were youth, with no formal education and no stable occupation. These bring about their low income per month and contribute highly to their involvement in food scavenging. Food security is not of utmost importance to the identified food scavengers but rather how to survive hunger. Therefore, the identified food scavengers were compelled to compromise the standard and quality of food they consumed.

Based on the findings and conclusions dra wn from this study, the following recommendations were made:

- Households in the study area should be educated by NGOs and medical practitioners on the use of family planning so as to check mate their family size. Having found that large-sized households were less food secure.
- In order to reach the first millennium goal by reducing the number of undernourished people to half by 2015, effort should be made by both governmental organisation and NGOs in providing empowerment programmes for scavengers' parents. This will increase their per capital income and reduce food scavenging. The identified food scavengers should be supported through extension service education and other incentives that will assist them in farming in order to alleviate their poverty level.

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EFFECTS OF CHANGES IN FOOD PRICES ON FOOD SECURITY AND NUTRITIONAL STATUS AMONG HOUSEHOLDS IN RURAL AND URBAN COMMUNITIES OF OGUN AND OYO STATES, NIGERIA

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ABSTRACT

The study assessed changes in food prices, food security and nutritional status of households in rural and urban communities in Southwest Nigeria. Data for this study were obtained through the aid of a structured questionnaire. A multistage sampling procedure was employed to select 320 households from Ogun and Oyo States of Southwest Nigeria. Data were analysed using descriptive and inferential statistics. Results revealed that Ogun State had a mean age of 45.6 while Oyo State had a mean age of 43.5. Cassava flour (60.9%) and yam tuber (59.9%) witnessed the highest price percentage increase in RA and UA of Ogun State. In Oyo State, yam tuber witnessed the highest price percentage increase in both RA (41.3%) and UA (66.4%) of Oyo State. Furthermore, results revealed that 22.5% were food secure in RA of Ogun State, while only 15% were food secure in RA of Oyo State. On the other hand, 76.3% were food secure in UA of Ogun State compared to 71.3% in UA of Oyo State. Anthropometric result revealed that 82.6% of the respondents in the RAs of Ogun State had normal weight compared to 79.3% in the RA of Oyo State; as well as 96.1% and 93.1% in UA of Ogun and Oyo States respectively. In conclusion, variation exists in the percentage of households affected by increase in the prices of food items between rural and urban communities and across Oyo and Ogun States. More households are food secure in the urban with higher normal weight compared to rural communities. In order to improve food security and nutritional status in UAs and RAs, food distribution channel should be well integrated to reduce food prices.

Keywords: Food prices, Food security, Nutritional status.

INTRODUCTION

Food prices are a primary determinant of consumption patterns, and high food prices may have important negative effects on nutritional status and health, especially among poor people (Rosemary *et al.,* 2013). Olanike *et al.* (2007) revealed that prices of food such as millet, maize, and sorghum have increased by about 100 to 200% since 2007, and, consequently, led to an increase in malnutrition, poverty, and threats to peace and stability in many countries. High food prices has made most households food insecure and vulnerable (Brinkman *et al*., 2009).

According to Brinkman (2009), the population groups most vulnerable to high food prices are those who spend a large share of their income on food, buy more food than they sell (net buyers), and have few coping strategies at their disposal. These groups include the urban poor, rural landless, pastoralists, and many small-scale farmers.

Rising food prices can have a major impact on food and nutrition security as these push the most vulnerable households further into poverty and weaken their ability to access adequate food (Gustafson, 2013). Food security is a situation in which all people, *at all times*, have physical, social, and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2002). This includes having foods available that are nutritionally adequate, safe, acceptable, and obtained without resorting to emergency food supplies, scavenging, stealing, or similar coping strategies (Fred *et al.,* 2012). Hyacinth and Kwabena (2015) noted that an individual or household is food secure if only such entity is able to acquire and consume in a sustainable manner nutritionally adequate, safe and preferred food through socially acceptable means to guarantee wellbeing.

While food prices have increased drastically, households' income has not increased proportionately, thereby depriving household of their savings, negatively affecting income, nutrition and health of poor households. Households therefore find it difficult to provide their basic household requirements in terms of food, nutrition and adequate health care. In view of the above, it was imperative to embark on a study that examines the changes in food prices, as well as its effects on households' food security and nutritional status. The study will reveal the dichotomy between rural and urban households with respect to food and nutritional security. The study therefore has the following specific objectives:

1. to examine the variation in prices of food across rural and urban areas from 2012-2017;
2. to determine households' access and source of information about food prices;
3. to determine the food security and nutritional status among rural and urban households:
4. to determine the effects of changes in food prices on household food security and nutritional status.

METHODOLOGY

The study was carried out in South-Western part of Nigeria. A multistage sampling procedure was employed to select the households in the study area. The first stage was the random selection of Ogun and Oyo states out of the six states in the southwest. The states were further classified based on their agricultural zones. The second stage was the random selection of one block from the agricultural zones in each of the states. Three cells (one rural and two urban) were purposively selected from each zone based on conditions such as population, proximity to major roads, level of infrastructural facilities classifying them as rural and urban areas. Equal proportion of ten rural households and twenty urban households were conveniently selected across board from each cells, a total of one hundred and sixty households were interviewed per state; this gives a total of three hundred and twenty households which was used for the study.

Data were obtained through the aid of a well-structured questionnaire. The independent variables were: households' socioeconomic characteristics, food prices, access to information about market food prices, and were measured using descriptive statistics (percentages, mean and standard deviation). The dependent variables were food security status and nutritional status. Food security status was measured using the United State Department of Agriculture's food security approach (USDA, 2016). Data were collected using the 18-item household food security questions. It was based on 30 days recall, asking the respondents whether the condition or behaviour occurred at any time during the previous 30 days. The categorization of households was on the basis of the score on the food security scale, while the household's scale score were determined by its overall pattern of response to the set of indicator questions.

Nutritional statuswas measured using anthropometric measures, because of its distinct classification of nutritional status as underweight, normal, overweight or obese.Body Mass Index, which is a measurement of person's weight-to-height ratio, was used for the purpose of this study because it accesses height and weight directly. The targets were the mother or anyone in charge of purchase, preparation of meals and in charge of dispensing the food budget for the household. Ordered logit regression model was used to analyse the effect of food prices on food security and nutritional status.The selection of the model was because the dependent variable (food security and nutritional status) are both categorical and ordinal. In line with Obayelu (2012), a significant positive coefficient indicates that a one unit increase in the independent variable increases the likelihood that household will be food or nutritional secure. On the other hand, a significant negative coefficient indicates that a one unit increase in the independent variable increases the likelihood that household will be food or nutritional insecure.

RESULTS AND DISCUSSION

Socioeconomic characteristics

The result in Table 1 shows that 51.3 percent were mothers in rural Ogun state and 56.3 percent in the urban area of Ogun state. Similarly, 65.0 percent were mothers in rural area of Oyo state compared to 72.5 percent in the urban area.This observation further indicates that the respondents covered were predominantly female in Ogun state(58.8 percent in rural and 72.8 percent in urban) and Oyo state (63.8 percent in rural and 78.8 percent in urban) and traditionally in charge of purchase and preparation of meals and involvement in domestic activities. This finding is in agreement with Abdullah *et al.* (2017) who opined that information on decision regarding household activities especially domestic activities are related to women.

Based on marital status, 81.3 percent were married in rural Ogun state but only 72.5 percent were married in the urban area of the state. Similarly, 66.3 percent were married in rural Oyo state, compared to 70.0 percent in the urban area.Marriage plays an important role in food and nutrition security. Thus, being married, enhances family income and wealth (Zagorsky, 2005), which will have a positive effect on food intake, thereby promoting food and nutrition security.

With regards to household size,rural areas had higher household sizes compared to urban areas, as shown in Table 1. Ogun State had a mean household size of 5.8 compared to 5.1 in Oyo State. Study of Webb *et al, 2006* showed that size of households has effects on food availability and food security and eventually the nutritional status of household members the higher the household size, the greater the dependence on the available food.

About 16.3 percent had formal education in rural areas of Ogun state, while 73.8 percent had formal education in the urban areas. On the other hand, only 11.3 percent had formal education in rural areas of Oyo state compared to 71.3 percent in

the urban areas of the state. The findings indicate that level of education attained is higher in urban than in rural area. This is expected based on educational differences between urban and rural areas in Nigeria. In addition, high level of education in urban areas may be explained by the high level of availability of educational institutions. Education may help the household to select their food items which may have significant effect on their health status and maintenance of proper eating habit.

Table 1: Distribution of Households Based on Socio/Demographic characteristics N=320

	Ogun					**Oyo**				
	Rural (%)	Urban (%)	Total (%)	$\bar{x}$	SD	Rural (%)	Urban (%)	Total (%)	$\bar{x}$	SD
Status in the household										
Father	38.8	25.0	31.9			23.8	17.5	20.6		
Mother	51.3	56.3	53.8			65.0	72.5	68.8		
Child	1.3	5.0	3.1			3.8	5.0	4.4		
Others	8.8	13.8	11.3			7.5	5.0	6.2		
Sex										
Male	41.3	27.5	34.4			36.1	21.2	28.7		
Female	58.8	72.5	65.6			63.8	78.8	71.3		
Age										
<=30	6.3	10.0	18.1			11.3	16.3	13.8		
31-40	27.5	25.0	26.3			30.0	31.2	30.6		
41-50	18.8	25.0	21.9			21.2	33.7	27.5		
51+	47.5	40.0	43.8	45.6	10.2	27.5	18.8	28.1	43.5	9.8
Marital status										
Single	3.8	8.8	6.3			10.0	11.2	10.6		
Married	81.3	72.5	76.9			66.3	70.0	68.1		
Divorced	1.3	0	0.6			5.0	6.3	5.6		
Widowed	13.8	18.8	16.3			18.7	12.5	15.7		
Household size										
<=3	7.5	16.3	11.9			6.3	20.0	13.1		
4-5	40.0	58.8	49.4			35.0	48.8	41.9		
6+	52.5	25.0	38.8	5.8	1.9	58.7	31.2	45.0	5.1	1.5
Level of education										
Tertiary education	16.3	73.8	45.0			11.3	71.3	41.3		
Secondary education	37.5	16.3	26.9			40.0	16.3	38.1		
Primary education	37.5	6.3	21.9			30.0	8.7	19.4		
No formal education	8.8	3.8	6.3			18.7	3.7	11.2		

Results on Table 1a indicate that 27.5 percent had access to credit facility in rural area of Ogun State compared to 67.5 percent in the urban areas. Similarly, only 27.5 percent in rural area of Oyo State had access to credit compared to 76.3 percent in the urban areas. The observation that high percentage of respondents living in urban area had access to credit facilities compared with respondents in rural area could indicate that various financial institutions such as banks and cooperative societies giving loans to business owners are more in urban areas than rural. These credits facilities could help both small scale and large scale business owners to boost their non-farm activities which indirectly influence the nutritional status of the business owners and reduce food scarcity as well in the communities. Table 1a further shows that only 31.3 percent in rural area of Ogun State belong to cooperative society and 50.0 percent in the urban area do belong. On the other hand, 41.3 percent in rural areas of Oyo State belong to cooperative societies and 61.3 in the urban areas do belong. Non-membership of cooperative can also limit their access to productive resources which can lead to poor agricultural practices or inadequate nutrition. Membership of cooperative societies or other associations on the other hand, may have influence on food information and other services that can improve their livelihoods.

Results of this study indicate that respondents in the rural area were involved more in agriculture as expected. This implies that a large percentage of farmers involved in food production and agriculture in general are in rural areas, although, rate of urban agriculture is fast increasing. Personal observation during the field work shows that those involved in agriculture in urban areas practiced subsistence agriculture through the home garden.

Table 1a: Distribution of Households Based on Socio/Demographic characteristics N=320

	Ogun			Oyo		
	Rural (%)	Urban (%)	Total (%)	Rural (%)	Urban (%)	Total (%)
Access to credit						
Yes	27.5	67.5	47.5	27.5	76.3	51.9
No	72.5	32.5	52.5	72.5	23.7	24.1
Member of cooperative						
Yes	31.3	50.0	40.6	41.3	61.3	51.3
No	68.8	50.0	59.4	58.7	38.7	48.7
Source of food						
Purchase	10.0	85.0	47.5	13.7	76.3	45.0
Own production	0	0	0	0	0	0
Both	90.0	15.0	52.5	86.3	23.7	23.7
Agricultural activities						
Home garden	6.3	11.3	8.8	7.5	15.0	11.3
Poultry	0	11.3	5.6	5.0	13.7	9.4
Livestock production	0	3.8	1.9	3.7	1.3	2.5
Crop production	58.8	2.5	30.6	51.3	5.0	28.1
Crop and animal	33.8	3.8	18.8	32.5	6.3	19.3
None	1.3	67.5	34.4	0	58.7	29.4

Table 2 reveals the mean change in food prices between 2014 and 2017. The study revealed that all the food items considered for this study experienced varying percentage increase over the years. In Ogun State, cassava flour and garri witnessed the largest percentage increase over the years in the rural areas with 60.9% and yam tuber with 59.9% in the urban areas. On the other hand, local rice witnessed a percentage decrease of 1.1% in rural area of Oyo, with yam tuber witnessing the highest percentage increase in both rural and urban areas (41.3% and 66.4% respectively). It was observed that urban areas witnessed the highest increase in food prices than rural areas, with Ogun State witnessing higher food prices than Oyo state. A higher price of food items in urban areas compared to rural areas could be due to series of interventions (handling, processing, packaging, transport, storing, marketing etc.) that takes place at the rural area before getting to the urban areas (Armar-Klesu, 2000) and also low percentage of households in urban areas wereinvolved in agricultural activities.

Table 2: Changes in prices (₦) agricultural food produce

	Ogun state					
	Rural			***Urban***		
Agricultural farm produce	Unit price in 2012	Present unit price	Percent change	Unit price in 2012	Present unit price	Percent change
Yam tuber	363.44	893.69	59.3	424.36	1058.34	59.9
Cassava flour	221	565.80	60.9	242.91	602.44	59.7
Garri	203.54	520.08	60.9	230.29	560.29	58.9
Yam flour	330.81	769.10	57.0	412.94	805.74	48.8
Local rice	953.34	1431.85	33.4	1018.7	1549.21	34.2
Cowpea (brown)	382.56	926.67	58.7	429.01	1018.11	57.9
Cowpea (white)	388.13	864.14	55.1	400.33	966.77	58.6
	Oyo state					
	Rural			***Urban***		
Agricultural farm produce	Unit price in 2012	Present unit price	Percent change	Unit price in 2012	Present unit price	Percent change
Yam tuber	62.31	106.17	41.3	68.37	113.80	66.4
Cassava flour	234.31	271.39	13.7	219.67	265.61	17.3
Garri	169.97	186.22	8.8	168.13	179.88	6.5
Yam flour	380.06	402.56	5.8	393.16	485.62	19.0
Local rice	255.30	252.44	-1.1	249.67	261.62	4.6
Cowpea (brown)	287.18	373.65	23.1	299.37	367.70	18.6
Cowpea (white)	223.41	280.00	20.2	227.59	271.60	16.2

Awareness and sources of information about food prices

The awareness and sources of information about food prices are shown in Table 3. All the respondents indicated that they obtain the prices of food items in the market. Local sources (that is, through friends and family) are the major source of information (100%). Respondents reported that they also get information about market days from radio programs such as Sajenwogba on Paramount FM, Oju-oja on Sweet FM in Ogun state and Ojo-oja on Fresh FM in Oyo State.Results of the study indicating high level of awareness of respondents about food most especially via local sources confirmed that information is mostly disseminated in the rural area mainly by friends and family members through local markets.

Table 3: Awareness and Sources of Information about Food Prices

	Ogun		Oyo	
	Rural (%)	Urban (%)	Rural (%)	Urban (%)
Awareness about food prices				
Yes	100.0	100.0	100.0	100.0
No	0	0	0	0
Sources of information				
Tv	0.5	13.5	0	4.7
Radio	6.9	12.4	8.3	20.9
Newspaper	0	9.6	0	0
Local sources	38.8	31.9	41.0	37.2
Conferences	15.0	1.6	9.7	0
Market	38.8	31.1	41.0	37.2
N	**206**	**251**	**195**	**215**

Food security status

The description of the food security status of the households is shown in Table 4. The food security status was classified into high food security, marginal food security, low food security and very low food security based on household responses to the 18-items of the USDA food security module. Results revealed that 22.5 percent of HH in rural area of OgunState were highly food secured compared to 15.0 percent in rural area of Oyo state; and 76.3 percent HH in urban areas of OgunState compared to 71.3 percent in Oyo state. This implies that urban areas were more food secured than rural areas and this is contrary to expectations that people in rural areas whose predominant occupation is farming, with lower food prices are always food secured.This might be as a result of high quantity of food consumed by the rural area households rather than the quality. Rural farmers take the best of their produce to urban centres in order to have more money since they attract higher financial value, thus neglecting the food quality.

Table 4: Households' Food Security Status

	Ogun			**Oyo**			**Pooled**		
	Rural (%)	Urban (%)	Total (%)	Rural (%)	Urban (%)	Total (%)	Rural (%)	Urban (%)	Total (%)
Food security status									
High food security	22.5	76.3	49.4	15	71.3	86.3	18.7	73.8	46.2
Marginal food security	26.3	18.8	22.5	22.5	16.3	38.8	24.4	17.5	20.9
Low food security	25.0	5.0	15.0	27.5	8.7	36.2	16.3	6.9	16.5
Very low food security	26.3	0.0	13.1	35	3.7	38.7	30.6	1.8	16.4

Nutritional status

The Body Mass Index of every member of the households that were 18 years and above were measured, as presented on Table 5. The Table shows that only 15.9 percent were underweight in rural areas of Ogun state compared to 17.9 percent in Oyo state; and 1.8 percent in urban area of Ogun state compared to 4.9 percent in Oyo state. This result supports the findings of Torlesse *et al.,* (2003) who opined that most undernourished children live in rural areas. It also supports finding of Khor*et al.* (2003) who reported that the prevalence of stunting was high among children in poor rural areas. This result implies that nutritional status of households is dependent on change in price of food items in the market; as household consume less as price of food increases. This invariably determines the nutritional status of the households.

Table 5: Nutritional status of households

	Ogun state		Oyo state	
	Rural (%)	Urban (%)	Rural (%)	Urban (%)
Nutritional status				
Underweight	15.9	1.8	17.9	4.9
Normal	82.6	96.1	79.3	93.1
Overweight	1.5	1.4	2.8	2.0
Obese	0	0.7	0	0

Effects of changes in food prices on household food security status

The result of the ordered logit regression model in Table 6 shows that increase in prices of some common foods had a significant influence on the household food security status. It shows that a unit increases in price of rice will decrease the probability of household food security by 0.002, a unit increase in price of beans will reduce the probability of household to be food secured. Also, a unit increase in price of yam tuber will reduce the probability of household to be food secured by 0.07. Also, a unit increase in price of yam flour will reduce the probability of household being food secured by 0.08. As prices of food increases, households tend to purchase and consume less of these food items, and this supports the law of demand that *the higher the price, the lower the quantity that will be demanded.*

Table 6: Results of marginal effects of food prices on household food security status

Variable	Marginal effect Y_0	S.E	Marginal effect Y_1	S.E	Marginal effect Y_2	S.E	Marginal effect Y_3	S.E
Geographical location	0.103	0.0390	0.268	0.0347	-0.323	0.0494	-0.0477	0.0103
Price of rice	-.002954	.00135	.00246	.00122	.000476	.00028	.0000227	.00002
Price of garri	.000999	.00244	-.000830	.00204	-.000161	.00039	-7.69e-06	.0000
Price of beans	-.0000921	.00008	.0000765	.00007	.0000149	.0000149	7.08e-07	.0000
Price of yam tuber	-.0154	.0842	.0466	.0711	.00905	.0135	.000431	.0007
Price cassava flour	-.0749	.0368	.0622	.0327	.0121	.0076	.000576	.00051
Price of yam flour	-.0705	.0452	.0670	.0399	.0130	.00866	.0006204	.00058

Effects of Changes in Food Prices on Household Nutritional Status

The result of the marginal effect in Table 7 shows that a unit increase in price of rice will decrease the probability of household nutritional status by 0.008. A unit increase in cassava flour will reduce the probability of household nutritional status by 0.002. Also, unit increase in yam tuber will reduce the probability of household nutritional status by 0.04. A unit change in the price of yam flour will decrease the probability of household nutritional status by 0.03. A unit increase in cowpea (brown) will reduce the probability of household nutritional status by 0.02.

Table 7: Results of Marginal Effects of Food Prices on Household Nutritional Status

Variable	Marginal effect Y_0	S.E	Marginal effect Y_1	S.E	Marginal effect Y_2	S.E	Marginal effect Y_3	S.E
Geographical location	-.0218	.00131	-.00379	.0078	.00423	.0185	.00318	.00154
Price of rice	.000361	.00580	.000542	.00870	-.0000406	-.000651	-.00502	-.00806
Price of garri	-.00113	.120	.666	.152	.129	.0592	.00616	.00452
Price of beans	3.68e-07	.00002	-2.24e-07	.00001	-4.91e-08	.00000	-9.49e-08	.00001
Price of yam tuber	-.0438	.0219	-.656	-.0328	.00491	.00245	.0607	.0304
Price of cassava flour	-.00267	.00147	.00922	.0243	.0803	.0262	-.00026	.00072
Price of yam flour	-.0261	.00752	-.233	.0504	.208	.0445	.0515	.0147
Price of cowpea (brown)	0.0169	.0159	-.00287	.00211	.00238	.00305	.00463	-0.00495
Price of cowpea (white)	.197	.0248	-.0119	.0169	-.00263	.00407	-.00508	.00697

CONCLUSION AND RECOMMENDATION

Results of this study revealed that prices of food stuffs across rural and urban areas showed significant variations over time, with a higher increase in urban areas. Urban food distribution systems (from harvesting until the moment the produce reaches the urban consumer's table) contribute to the higher prices of food items in the urban areas. Households' major source of information on food prices was local sources (that is, through friends and family). The urban areas were more food and nutritional secured than the urban areas.A change in food prices has a significant effect on food security and nutritional status, as households changes food consumption pattern. The study recommends that food distribution channel (farm site to selling point) be well integrated, to reduce food prices. Also, urban communities should be encouraged to be involved in agriculture, since it was observed that food production is dominant in the rural areas.

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AGRICULTURAL EXTENSION WORKERS' PERCEPTION OF THE IMPORTANCE OF TASKS PERFORMED IN ONDO STATE AGRICULTURAL DEVELOPMENT PROJECT (ODSADP)

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ABSTRACT
Agricultural extension is vital in ensuring the development of the agricultural sector. Hence, there is need to ensure the effective performance of the extension workers. The purpose of the study is to determine the perception of Agricultural Extension Workers about the importance of tasks performed in Ondo State Agricultural Development Project (ODSADP), Nigeria. Specifically, the study determined the perceived level of importance of the tasks performed by the agricultural extension workers and determined the working conditions influencing the performance of tasks by agricultural extension workers. Random sampling procedure was used in selecting eighty (80) extension workers in Ondo State Agricultural Development Project. Data were obtained through the use of structured questionnaire and were analysed using descriptive statistics and inferential statistics. Results showed that the extension workers perceived all the twenty job tasks listed in the study as important, all the tasks had mean values equal to or above the mean cut off of 2.5. Pearson correlation showed significant but moderate ($r= 0.506$, $p<0.05$)) relationship between task performed and the job conditions of the respondents. Based on the findings, efforts should be made by government to pay necessary allowances and provide sponsorship for the workers to obtain additional qualifications. If performance will be enhanced, awards should be given regularly to the extension staff.
Keywords: Agricultural Extension Workers, working conditions, job, Agricultural Development Project and task performance

INTRODUCTION

Agriculture in Nigeria occupies a central position amongst several sectors of the nation's economy, following its huge contribution to the Gross Domestic Product of the country. Hence, the exigent need to ensure the efficiency and effectiveness of this sector. The achievement of this is hinged on a number of factors with most important among these factors being the enhancement and strengthening of the extension sub-sector. Agricultural extension by its nature has an important role in promoting the adoption of new technologies and innovations (Jamilah *et al.*, 2010). The role of extension agents is to act as a bridge linking community/farmers and agencies in the process of knowledge and technology transfer to rural community/farmers. Agricultural extension brings about changes in farmers' attitude, knowledge and skills through education and communication (Ali *et al,* 2012).

Extension workers are professionals in the extension system responsible for developing individuals in the community and relating with the farmers. They are professional body of agricultural experts, teaching improved methods of farming, demonstrating innovations, and helping farmers to identify, organise and solve their problems. The quality of the performance of extension workers is as good as the purpose of their engagement and activities. The effectiveness of extension services is also highly dependent on the ability of extension workers who are competent as the whole extension process is dependent on them to transfer information from extension organisations to the clients (Sinkaiye, 2005).The Performance of extension agents is expected to increase if they have access to some factors and programme development competencies that will further improve their performance. These competencies must be considered and the necessary factors such as the job working condition must be continuously assessed (Tiraieyari *et al.*, 2010).

Working condition refers to working environment and all existing circumstances affecting labour in the workplace, including; job hours, physical aspects (i.e chairs to sit while in office, tools for mobility while on field like motorbikes, adequate power supply for preparation of teaching aids among others), legal rights and responsibilities (annual leave, maternity leave, sick leave, notification before disengagement by employer and notification to employee before withdrawal of service). Conducive work environments ensure the well-being of employees, which has been found to enable them exert themselves to their roles with all force that may translate to higher productivity (Akinyele, 2007). The workplace environment and job working condition of employees set in place impacts employee morale, productivity and engagement, both positively and negatively (Chandrasekar, 2011). According to Heath (2006), the quality of the employees' workplace and work condition influences the motivation level and thereafter the performance of the employees within the organisation. There are many factors that affect the performance of employees in organisations. Workplace environment and job condition plays an essential role towards workers' performance and productivity in any organisation (El-Zeiny, 2013).

Agricultural extension plays a crucial role in agricultural and rural development. It functions in the identification of research and policy modification that benefit rural communities (Spielman andBirner, 2008); provision of framework for farmers to be organised into functional groups (Christoplos 2008). In spite of these cardinal roles agricultural extension plays, its functionality has been greatly hampered by inadequate funding. AutaandDafwang (2010) investigated the status and policy of ADPs in Nigeria and found that over 63% of the ADPs had a weak or very weak funding status while over 22% had a good to excellent status. Furthermore, most of the ADPs had reduced their extension workers in recent times due to poor funding. Ammani*et al*. (2010) investigated the "challenges to the sustainability of the ADP system in Nigeria" and discovered inadequate funding was the focal problem.

If funding is dwindling definitely it will have direct or indirect impact on the ability of the extension workers to carry out their tasks;regardless of how crucial or otherwise these tasks may be. The perceptions of the workers about their tasks could also be affected.It is in view of the crucial roles of extension services to the development of agriculture and the challenges of funding facing it, that this study assessed the perception of Agricultural Extension workers on the level of importance of various tasks performed and also determined the influence of working conditions on tasks performed.

The general objective of the study was to determine the perception of the Agricultural Extension workers of ODSADP about the level of importance of various tasks they perform.

The specific objectives of the study were to:

1. determine the perceived level of importance of tasks performed by the agricultural extension workers; and
2. determine the job working conditions influencing the performance of agricultural extension workers.

The hypothesis of the study; There is no significant relationship between tasks performed and the working conditions influencing the tasks performed by the respondents.

METHODOLOGY

The study was carried out in Ondo state. Ondo State is located in the South Western part of Nigeria. Eighty respondents for this study were drawn randomly from the list of extension workers of Ondo State Agricultural Development Programme (ODSADEP). A well-structured questionnaire subjected to validation by expert's judgment was used to obtain data from the respondents.

The perception of the extension personnel about the importance of the job tasks they perform was measured in a 4-point rating scale of very important = 4, important =3, fairly important =2, not important =1. Cut off point of 2.5 was adopted. Any mean value below the mean cut off point of 2.5 wasregarded as not important while tasks with mean values equal to and above 2.5 was categorized as important tasks. Job working conditions influencing the performance of agricultural extension workers were measured utilising a 4-point scale of; very great influence = 4, great Influence = 3, slight Influence = 2 and no Influence = 1. For positive job working conditions, they were scored as "no influence" = 1, slight influence=2, great influence=3 and very great influence= 4, reverse scoring system was employed for negative statements. The grand mean score was used as cut off.Job working condition with mean values equal to or above the grand mean values were classified as having High influence (HI) on the extension worker's job task performance. Job working conditions with values below grand mean was regarded as having low influence (LI) Data were analysed using percentage and mean statistics. Hypothesis was tested with multiple regression.

RESULTS AND DISCUSSION

Perceived importance of tasks performed by the respondents

Table 1a and b revealed therespondents' perception about the importance of tasks they perform as agricultural extension staff. From table 1a, 78.8% of the respondents perceived rendering of technical advice and formation of groups as 'very important' tasks while 21.2% rated these tasks as 'important'. In addition, 77.5 % perceived creation of awareness on new innovation as 'very important'and 22.5 % rated it as 'important'.The workof extension agent is easier to work with groups of farmers, as such the task of formation farmers into groups was rated as 'very important'. Technical information and general information provision about innovations are cardinal roles of extension agents as such these tasks were rated as 'very important' by over 70% of the respondents. These tasks will go a long way to determine failure or success of the extension servicesrendered to the farmers. This view was supported by Van Mele (2007) by stating that AgriculturalExtension staff ensures the supply of information and new technologies to farming communities.Furthermore, in table 1a, 76.2% rated serving as link between researchers and farmers as 'very important', 23.8% rated it as 'important' while in Table 1b, 75.0% and 23.7% perceived selection of contact farmers as 'very important' and 'important' respectively. The work of Agricultural Extension agents is easier when they use contact farmers. Contact farmers (CFs), serve as points of contact between extension

agents (EAs) and other farmers and are ubiquitously used as messengers of information (Kondylis*et al*, 2017).Table 1a and b revealed that the entire 20 tasks listed were rated as 'important'.

Table 1a: Perceived Importance of Tasks Performed by the Respondents (n=80)

Tasks Performed by extension workers	VI	I	SI	NI	Remarks
Provision of agro chemical skill training to improve farmers understanding.	72.5	27.5	2.5	-	Important
Rendering of technical advice to farmers to boost their knowledge towards new agricultural practices.	78.8	21.2	-	-	Important
Formation of farmer groups which provide various services among farmers.	78.8	21.2	-	-	Important
Development of leadership capacity in motivating clientele in the rural area.	77.5	22.5	-	-	Important
Serves as an intermediary between researcher and farmers to increase the level of work performed by the researchers.	76.2	23.8	-	-	Important
Advice to farmers on cultural practices on crop	75.0	25.0	-	-	Important
Creating awareness on innovation to improve the standard of living of farmers.	77.5	20.0	-	-	Important
Linking of farmers with sources of farming inputs	75.0	25.0	-	-	Important
Personal contact with farmers during training and visit programme to foster relationship during (TandV).	67.5	32.5	-	-	Important

VI= Very important, I= Important, SI= slightly important, NI= Not important.
Tasks above or equal to mean cut off of 2.5= important task.
Tasks below mean cut off of 2.5= Not important task.
Source: Field survey, 2018.

Table 1b: Perceived Importance of Tasks Performed by the Respondents (n=80)

Tasks Performed by extension workers	VI	I	SI	NI	Remarks
Formation of women groups to allow interaction among rural women.	73.8	26.2	-	-	Important
Food utilisation demonstration to farmers for proper understanding.	73.8	25.0	1.2	-	Important
Selection of contact farmers to increase agricultural production.	75.0	23.8	1.2	-	Important
Provision of adult education service to enable farmers to become literate	72.5	27.5	-	-	Important
Helping the farmers to broaden their existing knowledge.	71.2	28.8	-	-	Important
Demonstration of improved technology to improve the understanding of farmers towards new agricultural practices.	68.8	31.2	-	-	Important
Educating clientele on good health practices.	68.8	31.2	-	-	Important
Appropriate record keeping of various activities carried out on the farm.	66.2	33.8	-	-	Important
Assisting the subject matter specialist (SMS) in disseminating information to farmers.	80.0	20.0	-	-	Important
Teaching rural and urban clientele and how to use their resources to solve their problems.	67.5	32.5	-	-	Important
Persuasion of farmers to adopt new technologies and new ideas	52.5	47.5	-	-	Important
Grand mean	3.72				

VI= Very important, I= Important, SI= slightly important, NI= Not important. Mean ≥2.5= important task.
Source: Field survey, 2018.

Working conditions influencing tasks performed by the respondents

Table 2a showed that 80% and 17.5% of the extension agents rated provision of sponsorship for additional qualification as having 'very great influence' and 'great influence' respectively on the performance of tasks by the respondents. This could be attributed to the desire of the respondents to further their education but lacked the financial capability. Therefore, provision of such sponsorship will serve as an impetus for better performance of their tasks. The table also revealed that 71.2% and 28.8 % perceived payment of leave bonus and giving of awards as having 'very great influence' and 'great influence' respectively on task performance by the extension agents. When awards are given to workers it boosts their morale and it is a form of incentive which may not necessarily be cash. Plague can be given and other incentives in kind as well. This will give the workers a sense of being recognized for their efforts. In Table 2b, 72.5% of the extension agents rated dearth of staff as having 'very great influence' while 27.5% opined that dearth of staff has 'great influence'. The dearth of staff has been a major problem of the agricultural extension delivery in Nigeria. Presently the extension agents available find it difficult to visit the required number of farmers in a fortnight. Many farmers do not have access to extension service because of inadequate man power. It is recommended by FAO that one extension agent (EA) should serve a maximum of one thousand (1000) farm families (FF) in developing countries. Unfortunately, the ratio across state in Nigeria is higher than the FAO recommendation. According to Haruna and Abdullahi (2013), On the average and across Nigeria, the ADPs EA: FFs ratio oscillated from 1:1700, 1:2132, 1:3385, 1:2950 and1: 3011between the years 2008 and 2012. This trend of diminishing number of VEAs had persisted over the yearsbecause most ADPs could not recruit new EAs even with the dire needs. As inadequacy is a serious issue that inhibits effective dissemination of new and useful information of agricultural technologies. In table 2a and b only four job conditions out of the twenty conditions listed were in the category of low influence(LI) while the remaining sixteen were in the category of high influence (HI).

Table 2a: Job Working Conditions Influencing the Tasks Performed by the Respondents (n=80)

Variables	VGI	GI	SI	NI	Remarks
Provision of Sponsorship for additional qualification/Training.	80.0	17.5	2.5	-	HI
Payment of leave bonus to encourage workers.	71.2	28.8	-	-	HI
Giving of awards to motivate better performance.	71.2	28.8	-	-	HI
Study leave to peruse training or study	68.8	31.2			HI
Lateness of salary which reduce the activities performed	67.5	31.2	1.2	-	HI
Involvement in training to improve knowledge and understanding about agriculture (FNT, MTRM etc.)	65.0	35.0	-	-	HI
Satisfaction of working with the farmers.	62.5	37.5	-	-	HI
Arrangement of pension scheme after retirement.	63.8	35.0	-	-	HI
Provision of funds and loans to improve the activities performed	60.0	38.8	1.2	-	HI
Avenue to go places to learn new things (tourism).	56.2	41.2	2.5	-	HI
Job Security	38.8	53.8	7.5	-	LI
Delayed promotion	51.2	40.0	8.8	-	LI
Lack of sufficient training (through seminars and workshop).	48.8	46.2	5.0	-	LI
poor road infrastructure in farming communities	55.0	37.5	5.0	-	LI

VGI= Very great influence, GI = Great influence, SI= Small influence, NI= No influence.
Mean above ≥ 2.57 High Influence (HI); Mean below 2.5= Low Influence (LI)
Grand Mean= 2.57
Source: Field survey, 2018.

Table 2b: Job Working Conditions Influencing the Tasks Performed by the Respondents (n=80)

Variables	VGI (%)	GI (%)	SI (%)	NI (%)	Remarks
Irregular allowance which reduces the work activities on farmer's field.	53.8	43.8	2.5	-	LI
Poor linking mechanism with researcher which affects dissemination of information to clientele	51.2	48.8	-	-	LI
Limited access to funds and loans.	66.2	31.2	1.2	-	LI
Poor transportation means for staff to disseminate information to farmers	65.0	35.0	-	-	LI
Poor attitude of clientele towards new technologies.	71.2	28.8	-	-	LI
Dearth of staff.	72.5	27.5	-	-	LI

Source: Field survey, 2018. Grand Mean= 2.57
VGI= Very great influence, GI = Great influence, SI= Small influence, NI= No influence.
Mean above ≥ 2.57 High Influence (HI); Mean below 2.5= Low Influence (LI)

Test of Hypothesis

HO_1: There is no significant relationship between tasks performed and the perceived working conditions influencing the tasks performed by the respondents

Result of the Pearson Product Moment correlation in Table 3 shows that there was medium, positive but significant relationship ($r= 0.506$, $p<0.05$) between the tasks performed by the extension agents and the job working conditions of the extension agents. This implies the tasks performed are influenced by the perceived working conditions of the respondents. This assertion is supported by Salau*et al* (2014) who stated that work conditions often affect performance of tasks. This connotes that the extension agent's performance of their tasks will improve if the job conditions are improved since the relationship has positive coefficient.

Table 3: Correlation between Tasks Performed and Job Working Conditions (n=80)

Variables	r-value	p-value	Remark
Task performed vs. job working conditions influencing the task performed	0.106	0.042	Significant

Source: Computed from Field Survey, (2018)

CONCLUSION AND RECOMMENDATIONS

The study had been able to ascertain that extension workers attach great importance to various activities and tasks they perform. This implies that they are heartily engaged in these activities, also the study has established that job conditions has influence on the tasks performed by the agricultural extensionagents, therefore the government should consistently ensure that the working conditions of the extension agents are favourable to encourage them. Priority should be given to Provision of sponsorship for additional qualification and training, payment of leave bonus, awards to motivate performance and granting of study leave for professional advancement.

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INFLUENCE OF SOCIOECONOMIC AND FOREST RELATED-VARIABLES ON RURAL WOMEN INVOLVEMENT IN EXPLOITATION OF NTFPS IN SOUTHWESTERN NIGERIA: A MULTIVARIABLE ANALYSIS

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ABSTRACT
The study adopted a multivariable analysis based on Ordinal Logistic Regression (OLR) to examine the determinants of rural women's involvement in exploitation of Non-Timber Forest Products (NTFPs) in selected forest communities in Southwestern Nigeria. Specifically, the study examined socioeconomic characteristics influencing rural women's involvement in NTFPs and investigated forest-related variables associated with level of involvement of women in NTFPs. The study design was cross-sectional and multi-stage sampling procedure was used in selecting a sample of 320 respondents from 37 forest reserves in Ondo, Ogun and Osun States. The overall level of involvement showed that 38.4%of the women had low level of involvement in the exploitation of NTFPs. Socioeconomic variables associated with level of involvement in exploitation were age of the respondents (OR=0.87; $p<0.05$), level of education (OR=2.77; $p<0.01$), external orientation (OR=1.12; $p<0.05$) and marriage type (OR=7.14; $p<0.01$). Forest-related variables associated with level of involvement were source of NTFP collection (OR=2.75; $p<0.01$); government laws and policies regarding NTFPs (OR=0.25; $p<0.01$), proximity to market (OR=0.51; $p<0.05$) and postharvest handing of NTFPs (OR=1.62, $p<0.05$). In the full model of the OLR, three socioeconomic variables and four forest-related variables jointly influence level of involvement in NTFPs (Likelihood Ratio Chi Square=162, $p<0.01$). The study concluded that there is a need to address socioeconomic and forest-related variables associated with the level of involvement in NTFPs for greater involvement in NTFPs in order to alleviate rural poverty in the forest communities.
Keywords: Rural women; Level of involvement; Non-Timber Forest Products (NTFPs), Exploitation; Determinants

INTRODUCTION

The term Non-Timber Forest Products (NTFPs) has been defined in various ways and often referred to as minor forest products (Amusa*et al*, 2012) and used interchangeably as Non-Wood Forest Products (NWFPs). NTFPs are goods and services of biological origin, other than timber, derived from forests, and other wooded land and trees outside forests (De Beer and McDermott, 1989). There are several types of NTFPs for exploitation in Nigeria and these include a wide range of edibles and non-edibles such as fruits, seeds, leaves, nuts, bush meat, roots, tubers, fibres, resins, latex, sticks, ropes, and construction materials like bamboos and rattans and a host of others (Akanni, 2013).

In developing countries trade in NTFPs has a long history in contributing substantially to the livelihood of rural women especially as a means of subsistence for the rural households. NTFPs have been recognized as an alternative to timber products in improving economic status of women and rural households (Jimoh, Amusa and Azeez, 2012). In Nigeria NTFP trade has progressed from just a means of subsistence at the household level and sales at local market to international cross boundary (Jimoh, 2006). Collection and selling of NTFPs is therefore not only an important source of income by increasing their purchasing power but also provides medicine and contributes to food security in the household (Okafor *et al*, 1994; Chikamai and Kagombe, 2002; Jimoh, Amusa and Azeez, 2012).

In economic terms, NTFPs contribute substantially to national economic growth and international trade(Adebayo, 2108). During the 1960s and 1979s, forest products earned large amounts of foreign exchange and the sector was ranked highest in employment generation in Nigeria (NBS, 2014). In the third quarter of 2017, the report from National Bureau of Statistics showed that forestry subsector increased in growth from 3.89 percent in Q3 in 2016 to 3.95 percent. Others studies on the contributions have also shown importance of NTFPs to livelihood (Oyetunji, 2019). Results from a recent study on NTFPs in Ondo State, Nigeria showed that at least 73 percent of the rural women sampled earned more than half of their income from NTFP exploitation (Adedayo and Falade, 2019).

NTFPs is thus a sector that offers great promise for women, but to enhance the effectiveness of poverty reduction programmes, opportunities for greater involvement of women are essential (IFAD, 2008). In Madagascar, poor women in one community earned 37 percent of their income from NTFPs compared to 22 percent earned by men while 77 percent of women's income in some areas of Andhra Pradesh was derived from forests (FAO, 2012). In Malaysia, rattan collection contributes to 14.8 percent of the economic activity of the residents in the swamp

forest. However, the potentials of NTFPs in enhancing livelihood outcomes among rural women in most sub-Saharan Africa have not been fully harnessed unlike other parts of the world including Asia where tremendous success has been recorded (Ogunbanjo and Aina, 2013).

Despite the importance of NTFPs for rural livelihoods as well as its good potentials for socioeconomic development of Nigeria, the sector has generally been overlooked by policy makers.

Previous studies such as Jimoh, Amusa and Azeez (2012); Jimoh and Haruna (2007) and Ayeloja and Ajewole (2006) have worked on prevalence and collection of NTFPs while Belcher, Ruíz-Pérez and Achdiawan (2005) and Aiyeloja and Ajewole (2006) focused on their studies on conservation strategies of forest products and the contribution of NTFPs to the rural livelihoods. However, there is inadequate statistical evidence on the level of involvement of rural women's exploitation of NTFPs as a livelihood choice, in terms of increase in income; increased wellbeing and reduced vulnerability in the study area, Hence, this study was conceived to examine rural women's level of involvement in the exploitation of NTFPs and determine socioeconomic and forest-related variables influencing level of involvement using a multivariate analysis procedure based on ordinal logistic regression analysis.

METHODOLOGY

This study adopted a multistage sampling procedure. At first stage, three out of six States in Southwestern Nigeria were purposively selected based on the size of the forest reserves. These States are Ogun, Osun and Ondo States. At the second stage, ten percent of all the 37 forest reserves in all the selected States were selected and this translates to four forest reserves. At the third stage, 20 percent of the total number of communities in the forest reserves was randomly selected. Thus, a total of 32 communities were randomly selected across the three States. At the last stage of selection procedure, a total of 320 respondents, based on Cochran (1977) sampling selection formula were sampled.

Structured interview schedule was administered on women who collect or trade each of the selected NTFPs to obtain data onthe following: socioeconomic characteristics of the women and level of involvement in gathering NTFPs.In order to measure level of involvement in the exploitation of NTFPs, all possible NTFPs in the selected locations were listed and involvement score was measured on a 3-point Likert Scale (rarely, sometimes and always). The mean plus or minus one standard deviation was used to classify the involvement composite score into three levels: low, moderate and high. Level of involvement was classified as low when the total involvement score fell below the difference between the mean score and one unit of standard deviation. Involvement in exploitation was at the high level when score was above the sum of the mean score and one unit of standard deviation while at the medium level, level of involvement score fell in between the two extremes. Data were collected between the months of February and March, 2017 by the researcher and a team of 14 well trained interviewers using the Open Data Kit in Android devices.

The study analysed three models of ordinal logistic regression to examine the simultaneous effects of the independent variables on the dependent variables.

Ordinal logistic regression analysis

The main multivariable analysis technique in the study is the ordinal logistic regression analysis because of the ordered nature of the dependent variable (Menard, 2011). Ordinal logistic model or proportional odds model are used to estimate relationships between an ordinal dependent variable and a set of independent variables (O'Connell *et. al*. 2008). The dependent variable in this study follows an ordinal response and has more than two outcomes – low involvement, moderate involvement or high involvement and has a meaningful sequential order where a value is indeed 'higher' than the previous one. In ordinal logistic, an underlying score is estimated as a linear function of the independent variables and a set of cut off points. The probability of observing outcome i corresponds to the probability that the estimated linear function, plus random error, is within the range of the cut points estimated for the outcome. The log odds of cumulative probabilities are modelled as linear functions of predictor variable(s):

$$\ln\left(\frac{P(y \le k \mid x)}{1 - P(y \le k \mid x)}\right) = \alpha_k + \beta_1 x; k = 1,...,K-1$$

The predictor variables in this study include the socioeconomic and the forest variables. Three models of ordinal logistic regression analysis were used in this study, guided by the objectives of the study.

Model 1 Socioeconomic variables only
Model 2 Forest-related variables only
Model 3 Socioeconomic variables + forest-related variables

In Model 1, the simultaneous effects of the socioeconomic variables on the level of involvement in the exploitation of NTFPs were determined. In the second Model, the simultaneous effects of forest-related variables on the dependent variable were also determined. Model 3 examined simultaneously the joint effects of socioeconomic and forest-related variables on level of involvement in the exploitation of NTFPs. All categorical independent variables were dummied and the Odd Ratios as well as 95% confidence intervals with corresponding p-values were presented in each

model. Data was analysed using the Stata Version 13.0 software.

RESULTS AND DISCUSSION

Level of involvement in the exploitation of NTFPs

Result from the Figure 1 shows the overall level of involvement of the women sampled in the four forest zones. The overall level of involvement classified into low, moderate and high shows that 38.44 percent of the women had low level of involvement in the exploitation of NTFPs, 31.87 percent were moderately involved in the NTFP business while 29.69 percent were ranked high on the level of involvement scale.

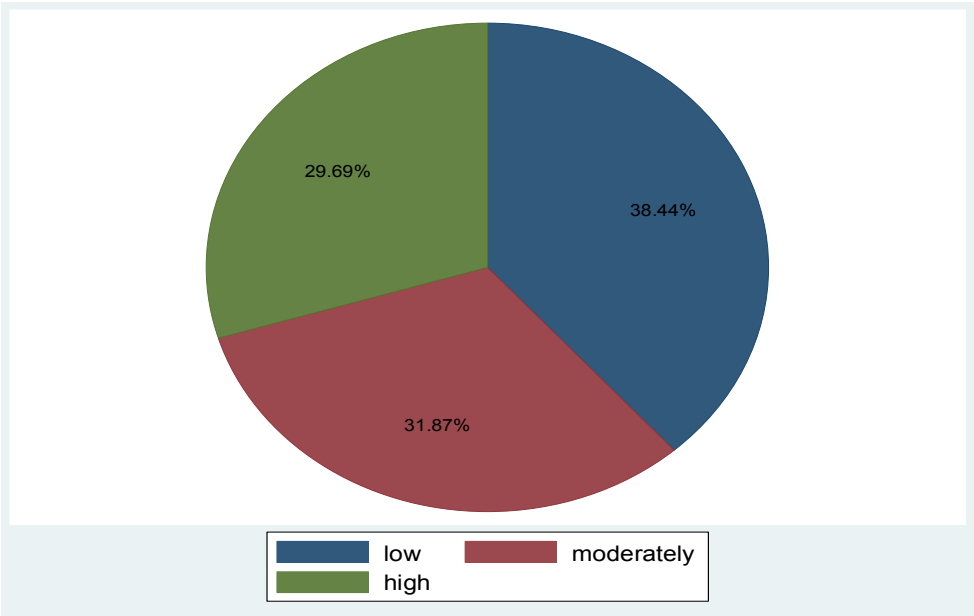

Fig 1: Level of Involvement in the exploitation of NTFPs
Source: Field survey, 2017

Multivariate Analysis

Each of the three regression models are presented in Tables 1, 2 and 3. In the first model some socioeconomic variables were examined in relation to level involvement in NTFPs. Table 1shows the influence of socioeconomic variables such as age of respondents, education, type of marital union, external orientation, religious affiliation and number of children on level of involvement in NTFP exploitation. The probability value ($p<0.01$associated with the overall Likelihood Ratio of 67.01 shows that the model fits well. For a one unit increase in age of respondents, the odds of high level of involvement in NTFPs versus the combined middle and low level of involvement categories are 0.87 times lower, given the other variables are held constant in the model. Likewise, for a one unit increase in age of respondents, the odds of the combined high and middle level of involvement versus low level of involvement are 0.87 times lower, given that the other variables are held constant. In other words, a unit increase in age of respondents is associated with high involvement in NTFP when other variables are held constant. For women in polygynous relationship, the odds of high level of involvement versus the combined middle and low levels are 4.8 times greater than for women in monogamous relationship, given the other variables are held constant. Likewise, the odds of the combined categories of high and middle level of involvement in NTFP business versus low level is 4.8 times greater for women in polygynous relationship compared to those in monogamous union, given the other variables are held constant in the model.

For women who had ever travelled outside of their community (external orientation), the odds of high level of involvement in NTFPs versus the combined middle and low levels are 2.73 greater than those who have never travelled out of the community given that all other variables are held constant in the model. In the same way odds of the combined middle and low levels of involvement in NTFPs versus the low level is 2.73 greater for women in polygynous union compared to those in monogamous relationship, given that all other variables in the model are constant.

Although those in lower education: primary education or below were found to be more involved in NTFPs than those with secondary education or more, the relationship between education and level of involvement in NTFPs is not significant. Similarly, women with 5 or more children had a higher odd of being in the NTFP business than women who had4 children or less.

The relationship between numbers of children is not significantly related to level of involvement in NTFP trade. Muslim women though had higher odds of involvement in NTFPs than Christian women, but the relationship between religion and level of involvement in NTFP trade is not statistically significant.

Table 1: Model 1: Socioeconomic variables and level of involvement in the exploitation of NTFPs

Variables	OR	Standard Error	Z	P>|Z|	95% confidence interval	
Age	0.8712	0.0574	-2.09	0.036	0.7657	0.991
Age Square	1.0013	0.0007	1.82	0.068	0.9999	1.0028
Education						
None (RC)	1.0000					
Primary	1.6457	0.5138	1.60	0.111	0.8924	3.0347
Secondary	0.9477	0.3032	-0.17	0.867	0.5062	1.7742
Post-Secondary	0.2204	0.2029	-1.64	0.100	0.0363	1.3389
Religion						
Christianity	1.0000					
Islam	1.4314	0.3721	1.38	0.168	0.8599	2.3827
Marital Union						
Monogamous	1.0000					
Polygynous	4.7788	1.1863	6.32	0.000	2.9462	7.7817
Ever Travelled out of community						
No	1.0000					
Yes	2.7426	1.1209	2.47	0.014	1.2310	6.1103
Number of children						
<=4	1.0000	0.3308	1.10	0.272	0.8057	2.1556
5+	1.3179					
/cut1	-1.9827	1.4832			-4.8896	0.9243
/cut2	-0.3978	1.4783			-3.2953	2.4996
Iteration 0: log likelihood = -349.5985						
Iteration 1: log likelihood = -316.3861						
Iteration 2: log likelihood = -316.0955						
Iteration 3: log likelihood = -316.0946						
Iteration 4: log likelihood = -316.0946						
Ordinal logistic regression Number of obs = 320						
LR chi2(9) = 67.01						
Log likelihood = -316.0946 Prob> chi2 = 0.0000						
Pseudo R2 = 0.0958						

Source: Field Survey, 2017

Model 2: Forest-related variables and level of involvement in the exploitation of NTFPs

The results of Model 2 are presented in Table 2. The Model shows the influence of forest-related variables on level of involvement in NTFPs. The forest related variables included in this Model are number of years respondents have been in the NTFP trade, access to NTFPs, source of NTFPs, government rules on NTFPs, availability and demand for NTFP over time.Others are distance from home to collection points of NTFPs measured in hours and the number of hours dedicated to NTFP trade in a week. The probability ($p<0.001$)-value) associated with the overall Likelihood Ratio Chi Square of 76.38 shows that the model fits well. Results from Model 2 of the multivariable ordinal logistic regression analysis show that four variables were significant. Women who dedicated 20 to 29 hours per week have the odds of 3.0 times greater level of involvement versus the combined middle and low levels than for women who spent 10 hours or less per week when other variables are held constant. Similarly, women who devoted 30 hours or more per week to NTFP business have the odds of 4.8 higher in terms of involvement in NTFPs than their counterparts versus the combined middle and low levels of involvement than those who spent 10 hours or less per week given that other variables in the model are held constant. This shows that the higher number of hours spent on NTFPs per week, the higher the involvement in the business. Similarly, for women who spent longer hours from home to reach the collection point, the odds of high involvement combined with middle and low involvement was higher than those who spent few hours to reach the collection point. For example, for women who spent up to 7 hours or more in search of NTFPs, the odds of high level of

involvement versus the combined middle and low levels were 3.4 times greater than for women who spent 3 hours or less, given the other variables are held constant. Likewise, the odds of the combined categories of high and middle level of involvement in NTFP business versus low level was 3.4 times greater for women who spent at least 7 hours from home to reach the collection point compared to those who spent 3 or fewer hours given the other variables are held constant in the model. This suggests that people can invest the bulk of their time to any venture if they find it profitable or as long as such venture is meeting their needs.

The demand for NTFPs is significantly related to level of involvement in the NTFP trade. For example, the odds of high level of involvement among women who reported that there seems to be no change in the demand of NTFP versus the combined middle and low levels of involvement was 3.7 times higher than among those who reported a decrease in demand for NTFP, given that all other variables are held constant. The odds of high level of involvement among women who reported increase in demand of NTFPs versus the combined middle and low levels of involvement was 7.0 times greater than with those who reported decrease in demand over time. This suggests that women will continue to exploit NTFPs and be committed to the trade as long as there is demand for the products.

Table 2: Forest-related variables and level of involvement in the exploitation of NTFPs

Variables	OR	Standard Error	Z	P>|Z|	95% confidence interval	
Access to NTFP						
Social Relations	1.0000					
Permission	1.3389	0.3963	0.99	0.324	0.7496	2.3916
Free	1.8103	0.7890	1.36	0.173	0.7705	4.2532
Others	1.6963	0.7163	1.25	0.211	0.7414	3.8813
Source of NTFPs						
Natural Forest	1.0000					
Cultivated Forest	0.8534	0.2243	-0.60	0.546	0.5098	1.4285
Distance from Forest gate to end market						
Decreased	1.0000					
No change	3.7082	2.4568	1.98	0.048	1.0121	13.5863
Increased	6.9922	4.6178	2.94	0.003	1.9163	25.5130
Number of collection hours from home						
<=10 hours	1.0000					
11-19 hours	0.8273	0.2551	-0.61	0.539	0.4521	1.5138
20-29 hours	2.9998	1.0731	3.07	0.002	1.4880	6.0477
30 hours or more	4.8161	2.2359	3.39	0.001	1.9387	11.9640
Hours spent on NTFPs per week						
less than 3 hours	1.0000					
4-6 hours	1.3142	0.4283	0.84	0.402	0.6938	2.4893
7hours or more	3.3661	1.6550	2.47	0.014	1.2842	8.8232
/cut1	0.5038	0.8404			-1.1433	2.1510
/cut2	2.1252	0.8481			0.4629	3.7875
Iteration 0: log likelihood = -349.5985						
Iteration 1: log likelihood = -311.9171						
Iteration 2: log likelihood = -311.4069						
Iteration 3: log likelihood = -311.4061						
Iteration 4: log likelihood = -311.4061						
Ordinal logistic regression Number of obs= 320						
LR chi2(11) = 76.38						
Prob> chi2 = 0.0000						
Log likelihood = -311.2061 Pseudo R2 = 0.1092						

Source: Field survey, 2017

Table 3: Model 3: Socioeconomic characteristics, forest-related variables and level of involvement in the exploitation of NTFPs

Categories	Variables	OR	Standard Error	Z	P>|Z|	95% confidence interval	
Age	Age	0.8397	0.0644	-2.28	0.023	0.7224	0.9759
	Age square	1.0017	0.0009	1.99	0.046	1.0000	1.0034
Education	None (RC)	1.0000					
	Primary	3.3699	1.2525	3.27	0.001	1.6264	6.9823
	Secondary	2.7756	1.1069	2.56	0.010	1.2702	6.0652
	Higher	0.1972	0.2002	-1.60	0.110	0.0270	1.4424
	Religion						
	Christianity	1.0000					
	Islam	1.3134	0.4140	0.86	0.387	0.7081	2.4360
Marital Union	Monogamous	1.0000					
	Polygynous	7.1497	2.2012	6.39	0.000	3.9106	13.0718
Years in NTFP business	Years in NTFP business	1.0776	0.0184	4.37	0.000	1.0421	1.1142
External orientation	No	1.0000					
	Yes	2.5204	1.2736	1.83	0.067	0.9361	6.7857
Number of children	<=4	1.0000					
	5+	1.0154	0.2880	0.05	0.957	0.5823	1.7705
Access to resources	Social Relations	1.0000					
	Permission	3.8168	1.3768	3.71	0.000	1.8821	7.7401
	Free	3.0497	1.6084	2.11	0.034	1.0848	8.5740
	Others	2.0417	0.9909	1.47	0.141	0.7886	5.2859
Type of forest	Natural	1.000					
	Cultivated forest	0.6262	0.1929	-1.52	0.129	0.3423	1.1456
Any Government rule on NTFP	Yes	1.0000					
	No	1.3773	0.5751	0.77	0.443	0.6075	3.1225
Availability of NTFPs	Decreased	1.0000					
	No change	0.1732	0.0920	-3.30	0.001	0.0611	0.4908
	Increased	0.3061	0.1629	-2.22	0.026	0.1079	0.8687
Demand for NTFPs	Decreased	1.0000					
	No change	2.5699	1.6714	1.45	0.147	0.7182	9.1945
	Increased	5.9159	3.7532	2.80	0.005	1.7060	20.5139
Number of collection hours	<=10 hrs	1.0000					
	11-19 hrs	0.6156	0.2218	-1.35	0.178	0.3037	1.2474
	20-29 hrs	3.4798	1.5132	2.87	0.004	1.4839	8.1604
	30hrs or more	3.7909	1.9636	2.57	0.010	1.3735	10.4632
Time spent on collection per week	<-3 hrs	1.0000					
	4-6 hrs	0.8710	0.3183	-0.38	0.706	0.4255	1.7828
	7hrs or more	1.9237	1.0573	1.19	0.234	0.6551	5.6489
	/cut1	-0.2835	1.8969			-4.0014	3.434
	/cut2	1.7079	1.8986			-2.0132	5.4290
	Iteration 0: log likelihood = -349.5985						
	Iteration 1: log likelihood = -270.5539						
	Iteration 2: log likelihood = -268.5329						
	Iteration 3: log likelihood = -268.5294						
	Iteration 4: log likelihood = -268.5294						
	Ordinal logistic regression Number of obs= 320						
	LR chi2(11) = 162.14						
	Prob> chi2 = 0.0000						
	Log likelihood = -268.5294 Pseudo R2 = 0.2319						

Model 3: Socioeconomic variables, forest-related variables and level of involvement in the exploitation of NTFPs

Model 3 presents the adjusted odd ratios from ordinal logistic regression analysis of the effects of forest related variables on level of involvement of NTFPs controlling for

socioeconomic variables in the model. The probability value ($p<0.01$) associated with the overall Likelihood Ratio Chi Square of 108.77 and this shows that the model fits well in explaining the joint effect of the socioeconomic variables and the community-related variables on respondents' level of involvement in the exploitation of NTFPs.

With the introduction of socioeconomic variables, the forest related variables that are significantly associated with level of involvement include availability of NTFPs, demand for NTFPs, access to resources and average number of hours of collection of NTFPs per week. Among the socioeconomic variables that remain significantly associated with level of involvement in NTFP were age of respondents and marital union. The probability value ($p<0.01$) associated with the overall Likelihood Ratio Chi Square of 162.14 is small, showing that the Model 3 fits well in explaining the adjusted odds of involvement in NTFPs according to forest-related variables when socioeconomic variables have been controlled for.

Specifically, in terms of access to resources, the odds of high level of involvement versus the combined middle and low levels are 3.8 times greater for women who got permission to trade/collect NTFPs than for women who got access through social relations, given the other variables are held constant. Likewise, the odds of the combined categories of high and middle level of involvement in NTFP business versus low level is 3.8 times greater for women who had permission to exploit NTFPs compared to those who gained access by social relations.

Similarly, as reported in the unadjusted model (Model 2) higher average number of collection hours per week was significantly associated with high involvement in the exploitation of NTFPs with the inclusion of socioeconomic variables in the model. Increase in demand for NTFPs also increases the level of involvement by nearly 6 times (Odd ratio=5.9) compared with when there is decrease in the presence of socioeconomic variables, given that all other variables in the model remain constant.

CONCLUSION

Rural women are involved at the different levels of exploiting NTFPs particularly, those that offer great economic benefit. The overall level of involvement in exploitation of NTFP showed that 38.4 percent of the women had low level of involvement in the exploitation of NTFPs, 31.9 percent were moderately involved in the NTFP business while 29.7 percent were ranked high on the level of involvement scale. This implies that involvement in NTFP is expected to contribute significantly to livelihood of rural women in the forest zones. Carr and Hartl (2008) had earlier recommended a greater involvement of rural women in NTFP trade because of its effectiveness in alleviating poverty in the rural area. NTFP involvement thus offers a great promise for rural women living in the forest areas.

Socioeconomic variables associated with level of involvement in exploitation were age of respondents, level of education, external orientation, religion and marriage type.Amusa*et. al.*, (2017) also reported that certain socioeconomic characteristics were found to be associated with NTFP extraction and use in local communities in the tropical lowlands of Southwestern Nigeria. Results from a similar study in Tanzania by Kilonzo *et al.*, (2019) also affirmed at the bivariate level of analysis that socioeconomic variables such as income level, education level, age distribution, household size, occupation and residence influenced the extraction and use of NTFPs.

Forest-related variables associated with levels of involvement were forest location, source of NTFP, enforcement of rules on NTFPs collection, extinction, and availability, consciousness about the future availability of NTFPs, distance of transporting NTFPs from forest gate to end market and the demand for NTFPs.

There is need for concerted efforts to encourage rural women for greater involvement in exploiting NTFPs as a means of livelihood because of varieties of benefits attached to it which could reduce rural poverty. More enlightenment programmes should be organised by the government for the rural women for awareness creation on the income generation opportunities that abound in NTFP sector.Government should encourage promotion of Non-Timber Forest Products (NTFP) species, through productivity improvement and value addition and reverse the trend of massive destruction of forest resources in order to sustain the livelihood of the rural women, whose main means of livelihood is NTFPs. Government should give more appreciation and recognition to the potentials in exploiting NTFPs because of the great benefits in the sector and put in place measures that will enhance greater involvement of rural women in the sector.

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YOUTH CORP MEMBERS' PERCEPTION OF AGRIPRENEURSHIP IN OYO AND OSUN STATE

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ABSTRACT
The paper examined the perception of NYSC members in Oyo and Osun States towards involvement in agricultural entrepreneurship. A multi-stage sampling procedure was used to select 185 serving corps members that belong to agro-allied Skill Acquisition Entrepreneurship Development (SAED) group from two Local Governments Areas (LGAs) each from the selected States. Quantitative data were collected on the respondents' socioeconomic characteristics; major agricultural enterprises they were involved in and the agripreneurial characteristics they possessed using semi structured questionnaire. Data were analysed using descriptive (frequency counts, percentages, means and standard deviation) and Inferential (Pearson Product Moment Correlation and Chi-square) statistics. Results showed that respondents had a mean age of 26 years, 85.4%were single and 75.7% were not graduates of agriculture. Commitment ($\bar{x}$= 3.50), innovativeness ($\bar{x}$= 3.47), initiative ($\bar{x}$= 3.45)and creativity ($\bar{x}$= 3.39) were the major agripreneurial characteristics possessed by the respondents. Respondents were involved in different agricultural enterprises of their choices namely poultry (7.6%), crop farming (6.5%), fish farming (6.5 %), vegetable farming (5.9%), Snail farming (1.1 %).Most(61.1%) of the respondents had a positive perception about youth involvement in agricultural entrepreneurship. Further result showed that that there was no significant relationship between the respondents' perception towards involvement in agripreneurship and their age, household size, years of practical agricultural experience, cosmopoliteness and income. Majority (61.1%) of the respondents had a positive perception about youth involvement in agricultural entrepreneurship. It was concluded from the study that majority of the corps members in the study areas were favourably disposed towards involvement in agricultural entrepreneurship. Based on the findings, it is therefore recommended that any agricultural entrepreneurship programme for corps members should focus on all agricultural enterprises to further boost their potentials in being successful agripreneurs. Corps members should be availed the opportunity of agricultural entrepreneurship training programme with a view to further enhancing their agripreneurial characteristics

Keywords: Agriculture entrepreneurship, serving corps members, agripreneurial characteristics, agro- allied SAED

INTRODUCTION

In the Nigerian context, youth corps refer to individuals that are being churned out of the tertiary institutions such as universities, polytechnics and college of education; having successfully completed their specified courses, and then are being posted to different parts of the country for a compulsory one year National Youth Service Corps (NYSC) programme. In relation to the findings of Abiodun (2010),the large number of tertiary institutions and increased graduate turnout, plagued with the issues of unemployment coupled with their attendant consequences (increased crime rate, unfulfilled dreams, and suicide among others) are posing a great challenge to many developing countries of which Nigeria is one. A possible way to reduce the menace of unemployment is the involvement of youth corps in agripreneurship. Agripreneurship refers to entrepreneurship opportunities within the agricultural sector.

Agripreneurship is not an attractive career, therefore it is seen as the employment of last resort (John *et al.,* 2012). The youth perceive agricultural sector as not being a viable enterprise initiative which may be due to low income returns. The study conducted in Delta State, Nigeria revealed that the youth view agriculture as a jobfor the less privileged in the society and meant for the aged (Aphunu, 2010). The perception that agriculture is a low income enterprise may be due to the fact that most youth are not yet or fully involved in agricultural enterprises.

It is therefore necessary to examine the perception of graduate youth towards involvement in agripreneurship in Oyo and Osun States, Nigeria; hence, the need for this study.

The main objective of this study was to examine the perception of youth corps towards agricultural entrepreneurship in Oyo and Osun States, Nigeria. It specifically described the socio - economic characteristics of the respondents; identified the major agricultural enterprises they were involved in, examined the perception of youth corps towards involvement in agricultural entrepreneurship and examined the agripreneurial characteristics possessed by the respondents.

The hypothesis of the study; There is no significant relationship between the socioeconomic characteristics of the graduate youths and their perception about agripreneurship.

METHODOLOGY

The study was conducted in Oyo and Osun States, Nigeria. Multi-stage sampling procedure was used to select the respondents for the study. At the first stage, purposive sampling technique was used to select two zones each from Oyo (Ibadan North and Oyo zones) and Osun

(Ilesha and Ife zones)States based on the presence of agro-allied training centres making a total of four zones. At the second stage, one Local Government Area (LGA) was purposively selected from each of the four zones based on the presence of agro-allied training centres making a total of four LGAs. From each of the selected zones, Ibadan North and Oyo East LGAs were selected from Oyo State while Ife East and Ilesha East LGAs were selected from Osun State. At the third stage, purposive sampling technique was also used to select one functioning agro-allied SAED training centre from each of the selected LGAs making a total of four training centres. At the final stage, proportionate sampling technique was used to select 60% of the total three hundred and six (306) serving corps members of the agro-allied SAED group in the 2018 Batch "A" to give a total of 185 respondents for the study. Duly pretested and validated semi- structured questionnaire was used to collect the quantitative data from the respondents. Descriptive statistics used include frequency counts, percentages, means and standard deviation were used to summarise the data while Pearson Product Moment Correlation and chi-square analyses were to test the stated hypotheses and draw inferences on the hypothesis.

Measurement of variables

The dependent variable for the study is serving corps members' perception about agripreneurship. A combination of ten positive and ten negative perceptional statements that relates to agripreneurship were listed and measured on a 4 points Likert- type scale. The perception of the respondents were indicated and scored as follows: Strongly Agree (4 points), Agree (3 points), Disagree (2points), and Strongly Disagree (1point) for positive perceptional statements and vice versa for the negative statements. The maximum attainable score for the positive statements was 80 points while the minimum attainable score was 20 points. Equal interval of the total perceptional score was used for the categorization into negative, indifferent and positive perception. On agripreneurial characteristics, respondents were asked to indicate the extent to which they possess selected agripreneurial characteristics such as innovativeness, risk tolerance, commitment, result oriented, planning ability, prudency, team work, multitasking ability, creativity, vision, initiative and customer centric. Responses were scored based on five point Likert type scale as follows: very much (4 points), much (3 points), little (2 points), very little (1point) and not all (0 point). The mean scores for each agripreneurial characteristics was calculated and used to rank the agripreneurial characteristics**.**

RESULTS AND DISCUSSION

Socioeconomic characteristics

Table 1 reveals that most (60.0%) of the respondents were males. This implies that more male corps members showed interest in agricultural entrepreneurship in the study area. This might be due to the fact that most of the activities embedded in agricultural entrepreneurship are often considered as being strenuous and laborious. Most (62.7%) of the respondents were 26 years and above with a mean age of 26.18 ± 2.74 years. This indicates that most of the respondents were in their active ages and still have strength for agripreneurial activities and are consequently potential future agripreneurs. Majority (71.4%) of the respondents practiced Christianity, and 28.1 percent practiced Islam. The finding indicated that Christianity was the dominant religion among the respondents and that religion was not a barrier to being involved in agricultural entrepreneurship. This corroborates the finding of Ayoade (2013) that majority of people involved in agriculture in Southwestern Nigeria were Christians. More than half (57.8%) of the respondents were Yorubas, 17.8 percent were Igbos, 15.1 percent were Hausas while the remaining 9.2 percent of the respondents belonged to other ethnic groups such as Igala, Ijaw, Isoko among others. The fact that many of the corps members that belonged to agro-allied SAED group were Yorubas implies that many youths are now serving within their catchment area which is not in line with one of core vision of NYSC which was to foster intercultural mix of youths from different ethnic groups. However, this could be as a result of frequent political and ethno-religious crises/conflit which has characterized many parts of Nigeria which necessitate most corps members being posted to their catchment areas. The results in Table 1 also show that majority (85.4 %) of the respondents were single while 14.6 %were married. This implies that youth's interest in agricultural enterprises could be very high while they are still single and able to concentrate on their enterprises without distractions arising from marriage responsibilities. This is in line with Chikezie *et al.* (2012) and Ogunremi *et al.* (2012) that unmarried people had latent energy in them to go into entrepreneurship training without distraction from family members. Majority (69.7%) of the respondents had acquired practical agricultural experiences in one way or the other before the service year while the remaining 30.3 percent did not. Majority (70.3%) of the respondents had bachelor's degree, 25.4 percent had Higher National Diploma (HND) while 3.2 percent had master degree. The finding reveals that educated youths were becoming more interested in agriculture more than before and indicates that the illiteracy level among the people involved in agriculture will reduce with time. This is against Adeogun and Agbeniyi (2011) who reported that

agricultural enterprise was dominated with those who had either non-formal or primary education.

Table 1: Distribution of respondents according to their socioeconomic characteristics, n = 185

Variables	Frequency	Percentage	Mean	Standard deviation
Sex				
Male	111	60		
Female	74	40		
Age				
≤ 20	5	2.7		
21 – 25	64	34.6	26.18	2.74
26+	116	62.7		
Religion				
Christianity	132	71.4		
Islam	52	28.1		
Traditional belief	1	0.5		
Ethnic group				
Yoruba	107	57.8		
Igbo	33	17.8		
Hausa	28	15.1		
Others	17	9.2		
Marital status				
Single	158	85.4		
Married	27	14.6		
Practical agricultural experience before NYSC				
No	56	30.3		
Yes	129	69.7		
Years of agricultural experience				
≤ 5	32	17.3		
6 – 10	138	74.6	8.73	4.51
11 - 15	9	4.9		
16+	6	3.2		
Academic field				
Graduates of agriculture	45	24.3		
Non graduates of agriculture	140	75.7		
Educational qualification				
HND	47	25.4		
Bachelor degree	132	71.4		
Master degree	6	3.2		

Source: Field survey, 2018

This implies that the higher percentage of the respondents who had agricultural experience before being posted for NYSC stand the greater chance of taking up career opportunities in agricultural sector. The results in Table 1 also show that most (76.6%) of the respondents had between 6-10 years of experience in agricultural activities, 17.3 percent had less than or equal to 5 years of agricultural practice, 4.9 percent had between 11-15 years while 3.2 percent had above16 years of experience. The finding of Hudu *et al.,* (2014) that stated that more than half of youths that take up career opportunities in agriculture have had practical agriculture experience at one time or the other affirms the finding of this study. The mean year of experience was 8.73 ± 4.51 years implying that respondents had fairly long experience which could enhance their interests in becoming agripreneurs. Most (75.7%) of the respondents were not graduates of agriculture while 24.3 percent were graduates of agriculture. This invariably implies that being a graduate of agriculture does not guarantee that one will take up career opportunities in agricultural enterprises. It is a matter of the perception of the graduate youths and interest to be involved in agricultural entrepreneurship. The finding affirms that of Kenneth *et al*. (2013) that majority of the youths that were involved in agricultural enterprises were non - graduates of agriculture.

Involvement in agricultural enterprises by the serving Corp members

Table 2 reveals that (38.4%) of the respondents were already involved in different agricultural enterprises of their choice even as corps members while (61.6%) were not engaged in any agricultural enterprise.

Table 2: Distribution of respondents based on present involvement in agricultural enterprises and specific enterprises engaged in, n = 185

Involvement in agricultural enterprise	Frequency	Percentage
No	114	61.6
Yes	71	38.4
Specific enterprises engaged in		
Poultry	14	7.6
Fish farming	12	6.5
Crop farming	12	6.5
Vegetable farming	11	5.9
Honey production	11	5.9
Animal production	5	2.7
Locust beans production	3	1.6
Snail farming	2	1.1
Cocoa production	1	0.5

Source: Field survey, 2018

Respondents who were already engaged in agricultural enterprises indicated poultry (7.6 %), fish farming (6.5%), honey production (5.9%), vegetable farming (5.9%), locust beans production (1.6%), snail farming (1.1%) and cocoa farming (0.5%) as their choice enterprises. This finding corroborates that of Hudu *et al.* (2014) that crop farming, livestock and poultry enterprises were the most preferred agricultural enterprises of youths.

Agripreneurial characteristics possessed by the respondents

The results in Table 3 show the rank distribution of agripreneurial characteristics possessed by the respondents. The findings show that commitment ($\bar{x}$=3.50) ranked highest among the agripreneurial characteristics that respondents identified they possessed, followed by innovativeness ($\bar{x}$= 3.47) initiative ($\bar{x}$= 3.45), creativity ($\bar{x}$= 3.39), vision($\bar{x}$= 3.36), planning ability($\bar{x}$= 3.26)and team work ($\bar{x}$= 3.25).

Table 3: Rank of agripreneurial characteristics possessed by the respondents n = 185

Characteristics	$\bar{x}$	Standard deviation	Rank
Commitment	3.50	0.76	1st
Innovativeness	3.47	0.81	2nd
Initiative	3.45	0.80	3rd
Creativity	3.39	0.77	4th
Vision	3.36	0.76	5th
Planning ability	3.26	0.81	6th
Team work	3.25	0.93	7th
Result oriented	3.24	0.85	8th
Risk tolerance	3.15	0.79	9th
Multitasking ability	3.10	0.87	10th
Prudency	3.06	0.83	11th
Customer centric	3.06	0.99	12th

Grand mean score = 3.27, Standard deviation = 0.83, $\bar{x}$= mean
Source: Field survey, 2018

Comparing the grand mean score of 3.27 with each of the individual means, it can be deduced that the respondents had high commitment, innovativeness, initiative, creativity and vision whereas they had low planning ability, team work, result oriented, risk tolerance, multitasking ability, prudency and customer centric. This finding corroborates the reports of Alabi and Farinde (2012) who posited that persistence and commitment were the major entrepreneurial characteristics possessed by entrepreneurs in Osun state.

Perception of respondents towards involvement in agricultural entrepreneurship

The results in Table 4 show the percentages of Likert scale scores for a set of perceptional statements which were responded to by corps members in agro-allied SAED group. More than half of the respondents strongly agreed to the perceptional statements such as engaging in agricultural entrepreneurial activities would help reduce rate of unemployment among youths (71.4%), agricultural entrepreneurship is a way to reduce poverty and hunger (65.4%) and agricultural

entrepreneurship is not just profit oriented but enhances creativity (62.2%) among others.

Table 4: Distribution of respondents' perception towards involvement in agricultural entrepreneurship, n = 185

Perception statements	SA (%)	A (%)	D (%)	SD (%)
Engaging in agricultural entrepreneurial activities would help reduce rate of unemployment among youths	71.4	24.9	2.7	1.1
Agricultural entrepreneurship is a way to reduce poverty and hunger	65.4	29.2	4.3	1.1
Agricultural entrepreneurship is not just profit oriented but enhances creativity	62.2	32.4	3.8	1.6
Agricultural entrepreneurship will make it possible for agricultural product to be available for potential end-users	59.5	36.8	1.6	2.2
Opportunities in agricultural entrepreneurship are unlimited	53.0	40.5	4.9	1.6
Agricultural entrepreneurship strengthens the link between agricultural stakeholders	48.1	39.5	8.6	3.8
Agricultural entrepreneurship is lucrative	49.7	34.1	13.0	3.2
Agriculture is an enterprise for both gender	55.7	24.3	8.6	11.4
Agricultural entrepreneurship in Nigeria has a lot of untapped potential	47.0	36.8	9.7	6.5
Agriculture is a gender specific enterprise	51.4	19.5	11.4	17.8
Only agricultural graduates should be involved in agripreneurship	53.0	13.5	18.4	15.1
Agricultural entrepreneurship cannot increase the standard of living of agripreneurs	51.9	15.7	16.2	16.2
Agricultural entrepreneurship does not benefit youths	50.3	18.9	12.4	18.4
Agricultural entrepreneurship should be practiced by those who are non-literates	49.2	14.1	21.1	15.7
Agricultural entrepreneurship is a poor man's option	43.2	20.0	20.5	16.2
Agricultural entrepreneurship as a career reduces one's social status				
There is no steady employment in agricultural entrepreneurship	16.8	27.0	34.1	22.2
Agricultural entrepreneurship is a less risk business enterprise in Nigeria	35.1	27.0	20.5	17.3
Participation in agricultural enterprises is labourious	17.8	20.5	38.9	22.7
Agricultural entrepreneurship is highly capital intensive	17.3	21.6	27.6	33.5

F= Frequency, %= Percentage: SD= Strongly Disagree, D= Disagree, A= Agree, SA= Strongly Agree
Rating scale:1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4= Strongly Agree
Source: Field survey, 2018

Further analysis was carried out to rate the respondents' perception as negative, indifferent or positive using the total perceptional score Result in Table 5 shows that most (61.1%) of the graduate youth had a positive perception, 37.3% were indifferent while the remaining 1.6% had a negative perception about agripreneurship. In other words, majority of the serving corps members in the study areas were favourably disposed towards agripreneurship. The perception of respondents towards agripreneurship would most likely affect their involvement in the sector.

Table 5: Overall perception of respondents on agricultural entrepreneurship n = 185

Total perception score	Frequency	Percentage	Decision
21 - 40	3	1.6	Negative perception
41 - 60	69	37.3	Indifferent perception
61 - 80	113	61.1	Positive perception

Grand mean = 61. 50, S.D = 8.48
Source: Field survey, 2018

Test of Hypothesis

The test for significant relationship between the socioeconomic characteristics of the graduate youths and their perception about

agripreneurship was carried out. Results of Pearson's Product Moment Correlation analysis in Table 5 show that at $p \leq 0.05$, there was positive but no significant relationship between age, household size, cosmopoliteness, income and the respondents' perception towards involvement in agripreneurship. However, there exist a negative but no significant relationship between years of practical agricultural experience and the respondents' perception towards involvement in agripreneurship in the study areas. This implies that there is no significant relationship between the respondents' perception towards involvement in agripreneurship and their age, household size, years of practical agricultural experience, cosmopoliteness and income. Therefore, null hypothesis is accepted. This is contrary to the findings of Douglas *et al*. (2017) that reported that sex, years of experience in farming, land ownership, occupation of guardian and the source of income were significantly related to youth perceptions towards farming enterprises.

Table 6: Pearson's product moment correlation analysis between socioeconomic characteristics of respondents and perception towards involvement in agripreneurship

Variables	Correlation coefficient (r)	P – value	Decision
Age	0.045	0.540	NS
Household size	0.065	0.379	NS
Cosmopoliteness	0.069	0.348	NS
Years of practical agricultural experience	-0.090	0.224	NS
Income	0.045	0.539	NS

**Significant at 0.01, *Significant at 0.05.
NS = not significant
Source: Field survey, 2018

Furthermore, the results of chi square analysis in Table 6 reveals that sex, marital status, religion, ethnic group, educational qualification, graduate of agriculture were not significantly associated with the respondents' perception towards involvement in agripreneurship. This implies that the perception of the respondents towards taking up entrepreneurship opportunities in agriculture is not influenced bytheir sex, marital status, religion, ethnic group and being a graduate of agriculture or not.

Table 7: Results of Chi-square showing association between socioeconomic characteristics of respondents and perception towards involvement in agripreneurship

Variables	**χ2- value**	**df**	**P-value**	**Decision**
Sex	3.190	2	0.203	NS
Marital status	1.104	2	0.576	NS
Religion	0.716	4	0.949	NS
Ethnic group	4.835	6	0.565	NS
Educational qualification	4.121	6	0.660	NS
Graduate of agriculture	3.336	2	0.189	NS

**Significant at 0.01, *Significant at 0.05, NS = not significant, df = degree of freedom
Source: Field survey, 2018

CONCLUSIONS AND RECOMMENDATIONS

Based on the study, more than half of the respondents were Yoruba, Christians and had in one way or the other acquired practical agricultural experiences before service year. Majority of the respondents were not graduates of agriculture. Commitment, Innovativeness and initiative were the major agripreneurial characteristics possessed by the respondents. Majority (61.1%) of the respondents had a positive perception about youth involvement in agricultural entrepreneurship. From the study, it was concluded that majority of the corps members investigated were favourably disposed towards involvement in agricultural entrepreneurship. It is therefore recommended that any agricultural entrepreneurship programme for corps members should focus on all agricultural enterprises to further boost their potentials in being successful agripreneurs. Corps members should be availed the opportunity of agricultural entrepreneurship training programme with a view to further enhancing their agripreneurial characteristics. In addition, agricultural entrepreneurship should not be limited to just graduates of agriculture. Capacity building and empowerment should be given to interested corps members in the area of agipreneurial activities.

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PROCLIVITY FOR AGRIPRENEURSHIP AMONG UNDERGRADUATES OF AGRICULTURE AND ENTREPRENEURSHIP IN SELECTED UNIVERSITIES IN SOUTHWESTERN NIGERIA

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ABSTRACT

Entrepreneurship has become one of the most dynamic forces reinforcing world's economic growth. This study compared proclivity for agripreneurship among final year undergraduates of agriculture and entrepreneurship in selected universities in southwestern Nigeria. Using purposive and random sampling techniques, four universities were selected from where one hundred and twenty (120) each, of final year undergraduates of agriculture and entrepreneurship were selected giving a total sample size of 240 respondents. Relevant data were obtained on respondents' socioeconomic characteristics and parental background, specific areas of agripreneurship interest and perceived constraints to agripreneurship. Data were analysed using frequencies, percentages, means and chi-square. Results showed that undergraduates of agriculture were males (54.2%), single (96.7%) with mean age of 24 years and 75.8% had proclivity for agripreneurship with specific interests in poultry production: egg, meat and feed milling (67.5%) while undergraduates of entrepreneurship were males (48.3%), single (95.0%) with mean age of 23 years and 65.0% had proclivity for agripreneurship with 53.3% being specifically interested in poultry production. Undergraduates of agriculture ranked inadequate support infrastructure highest (1.90) as their perceived most severe constraints to agripreneurship while unfavourable government policies was ranked highest (1.74) among undergraduates of entrepreneurship. Relationships were found between undergraduates of agriculture's course of study (χ^2=7.59) as well as mother's discipline (χ^2=5.33) and proclivity for agripreneurship while gender (χ^2=5.83) and mother's discipline (χ^2=22.34) were significantly related to proclivity for agripreneurship among undergraduates of entrepreneurship. Government should continue to provide necessary support infrastructures and formulate farmer friendly policies to achieve sustainable youth engagement in Agripreneurship.

Keywords: Proclivity, Entrepreneurship and Agripreneurship

INTRODUCTION

Nigeria is an agrarian country which at independence, inherited an economy dominated by a robust agricultural sector in income and foreign exchange earnings, and whose share in the Gross domestic product was 65.7% (Brooks *et al*., 2012). Despite the strategic importance of the oil sector, the role of the agricultural sector still remains significant to the economy, accounting for 35.6% of the GDP compared to 33.7% and 31.0% from manufacturing and services, respectively (World bank, 2012). Entrepreneurship has become one of the most dynamic forces reinforcing world's economic growth. It has been acknowledged as a main driver of economic development as it encourages growth, innovation and technology adoption as well as poverty reduction (United Nations, 2013). Universities education through entrepreneurship is expected to play a vital role in improving students' attitude, personal values, technical abilities and self-efficacy in entrepreneurial activities**.** Agripreneurship, entrepreneurship in agriculture related business is one of the major drivers of economic growth and development in every emerging economy. Agripreneurship defines the wealth creation activities among economies of both developing and developed countries; and it is also the best solution for reducing unemployment in developing countries (Nwofoke *et al*., 2020). Entrepreneurship in agriculture entails the creation of innovative economic organisation for the purpose of growth or gain under conditions of risk and uncertainty in agriculture. Agripreneurship is greatly influenced mainly by the economic situation, education and culture (Singh, 2013).

The engines for agripreneurship development among young graduates and undergraduates are based on training and inculcating agripreneurship work culture (Mohamed, Rezai, Shamsudin and Mahmud, 2012).The importance of agripreneurship education in the development of future agripreneurs has become a major concern of many parties including the policy makers based on the assumption that 'entrepreneurs can be made'. Africa has an exceptional population profile: 200 million people living in Africa are between the ages 15 to 24, constituting over 20% of the African population; 70% of African youths reside in rural areas and account for 65% of agricultural labour force. Young people make up 36% of the working population, and account for 60% of the total unemployed persons (International Labour Organisation (ILO, 2012). Brooks *et al*. (2012) and Kararach *et al*. (2011) revealed that creation of non-agricultural jobs may not happen in the short run; as such agriculture is likely to continue being a source of employment and livelihood in the medium to long term especially for countries that heavily depend on agriculture like Nigeria. Nigeria as a nation is experiencing great economic challenges that include unemployment of her teeming undergraduates, which presents the need for entrepreneurial skills acquisition to curb this menace (Nwankwo, 2011). The Agripreneurship

programme is necessary to develop entrepreneurs and manage workforce to cater for the agricultural industry across the world (Bairwa *et al*., 2014). Nwofoke *et al*. (2020) affirmed that despite the importance of the agripreneurship sector in economic growth, unfavourable government policies, multiple taxation, poor access to finance, lack of education and training, environmental issues, and corruption have remained major constraints to start-ups by young people in Nigeria Notwithstanding, agricultural entrepreneurship being a breeding ground for micro-businesses, presents far more opportunities for entrepreneurial development. It is against this background that this study was poised to undertake a comparative analysis of proclivity for agripreneurship among undergraduates offering agriculture and those offering entrepreneurship as their courses of study in selected universities in southwestern, Nigeria, by addressing the following specific objectives.

Objectives of the study

i. to describe the socioeconomic characteristics and parental background of the sampled undergraduates;
ii. to identify specific areas of interest in agripreneurship among the respondents and
iii. to examine respondents' perceived constraints to agripreneurship.

The hypotheses of the study are stated as follow;

i. There is no significant relationship between selected socioeconomic characteristics and proclivity for agripreneurship among respondents
ii. There is no significant difference in proclivity for agripreneurship between undergraduates of agriculture and undergraduates of entrepreneurship

METHODOLOGY

This study was carried out in southwestern, Nigeria. Four universities were selected to draw the study sample. Federal University of Technology, Akure (FUTA) and Adekunle Ajasin University, Akungba (AAUA) were randomly selected to sample undergraduates of agriculture (with options in Agric. Economics, Agric. Extension, Agronomy and Animal Science), while Kwara State University (KWASU) and Osun State University (UniOsun) were purposively selected to sample undergraduates of entrepreneurship (with no option) owing to limited number of universities presently offering entrepreneurship as a course of study in Nigeria. Sixty one (61) and fifty nine (59) undergraduates of agriculture were selected from FUTA and AAUA respectively, while seventy (70) and fifty (50) undergraduates of entrepreneurship were selected from UniOsun and KWASU respectively, to give one hundred and twenty final year undergraduates each, of agriculture and entrepreneurship randomly selected proportionate to size thereby resulting in a total sample size of two hundred and forty (240) respondents in all. Socioeconomic variables including age, gender, marital status, father's discipline and occupation, mother's discipline and occupation, reasons for the choice of course of study and employment plan upon graduation were measured as appropriate, proclivity for agripreneurship-the dependent variable was measured with yes or no response options to whether respondents were interested in agripreneurship or not, while specific areas of interest were indicated. Constraints to agripreneurship and its level of severity were measured via ranking. Relevant primary data were elicited from respondents using well-structured questionnaires and same were analysed using both descriptive and inferential statistics. The descriptive statistics used in the study included frequency counts, percentage, mean and standard deviation. Chi-square analysis was used to test for relationships between selected socioeconomic variables and proclivity for agripreneurship among respondents while t-test was used to test for difference in proclivity for agripreneurship between undergraduates of agriculture and undergraduates of entrepreneurship.

RESULTS AND DISCUSSION

Socioeconomic characteristics and parental background

Table 1 reveals the mean age of undergraduates of agriculture as 23.7 years, 54.2% were male and most (96.7%) were single. The mean age of entrepreneurship undergraduates was 23.0 years, 48.3% were male, while 95.0% were single. Table 2 shows that 30.0% of agricultural undergraduates' fathers studied agriculture related courses while 48.3% had their fathers engaged in trading. Also, 25.0% of the fathers of undergraduates of entrepreneurship studied agriculture related courses and 25.0% were also traders. However, 35.0% of both categories of respondents had their fathers being civil servants. Similarly, Adekunle *et al.* (2009) found just 3.3% of their sampled respondents' fathers as being farmers and this is expected to affect proclivity for agripreneurship among youths. The Table further reveals that 35.0% of agricultural undergraduates' mothers studied agriculture related courses, 36.7% had their mothers engaged in trading, while 63.3% had their mothers being civil servants. Also, 25.8% of entrepreneurship undergraduates' mothers studied agriculture related courses, 63.3% had their mothers engaged in trading, while 25.8% had their mothers being civil servants.

Table 1: Distribution of respondents based on socioeconomic characteristics

Variables	Undergraduates of Agriculture		Undergraduates of Entrepreneurship	
Age (Years)	**Frequency**	**Percentage**	**Frequency**	**Percentage**
15 – 20	00	0.0	01	0.8
21 – 25	36	30.0	47	38.3
26 – 30	52	43.3	38	31.7
31 – 40	32	26.7	34	28.3
Mean	**23.65**		**22.95**	
Gender				
Male	65	54.2	58	48.3
Female	55	45.8	62	51.7
Marital status				
Single	116	96.7	114	95.0
Married	04	3.3	06	5.0
Total	**120**	**100.0**	**120**	**100.0**

Table 2 also reveals that 35.0% of agricultural undergraduates' mothers studied agriculture related courses, 36.7% were engaged in trading, while 63.3% were civil servants. On the other hand, 25.8%, 63.3% and 25.8% of entrepreneurship undergraduates' mothers studied agriculture related courses, are traders and civil servants, respectively.

Table 2: Distribution of respondents based on parental background

Variables	Undergraduates of Agriculture		Undergraduates of Entrepreneurship	
Father's Discipline	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Agric. Related	36	30.0	30	25.0
Non-Agric. Related	84	70.0	90	75.0
Father's Occupation				
Trading	58	48.3	30	25.0
Civil service	42	35.0	42	35.0
Farming	05	4.2	09	7.5
Contractor	10	8.3	04	3.3
Clergy	00	0.0	04	3.3
Artisan	05	4.2	29	24.2
Military	00	0.0	02	1.7
Mother's Discipline				
Agric. Related	42	35.0	31	25.8
Non-Agric. Related	78	65.0	89	74.2
Mother's Occupation				
Trading	44	36.7	76	63.3
Civil service	76	63.3	31	25.8
Farming	00	0.0	05	4.2
Clergy	00	0.0	01	0.8
Artisan	00	0.0	07	5.8
Total	**120**	**100.0**	**120**	**100.0**

Table 3 indicates that 38.3% and 24.2% of undergraduates of agriculture chose their course of study due to personal interest and settled for the courses offered them by their universities, respectively. Also, 49.2% and 23.3% of entrepreneurship undergraduates chose their course of study due to personal interest and settled for the courses offered them by their universities respectively. Almost half (45.8%) of agricultural undergraduates were willing to be self-employed in agribusiness, while 28.3% of entrepreneurship undergraduates were willing to be gainfully employed in the private sector.

Table 3: Distribution of respondents based on other socioeconomic characteristics

Variables	Undergraduates of Agriculture		Undergraduates of Entrepreneurship	
Reasons for choice of course of study	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Parental influence	36	30.0	12	10.0
Personal interest	46	38.3	59	49.2
Peer group influence	08	6.7	06	5.0
Influence of mentor	01	0.8	15	12.5
Course offered by the university	29	24.2	28	23.3
Course of study				
Agric. Economics	33	27.5	NA	NA
Agric. Extension	27	22.5	NA	NA
Agronomy	31	25.8	NA	NA
Animal Science	29	24.2	NA	NA
Employment plan				
Private sector	15	12.5	34	28.3
Public sector	18	15.0	23	19.2
Engagement in family business	21	17.5	10	8.3
Self-employment in Agribusiness	55	45.8	19	15.8
Self-employment in non-agribusiness	07	5.8	32	26.7
Undecided	04	3.3	02	1.7
Total	**120**	**100.0**	**120**	**100.0**

NA = Not Applicable

Respondents' specific areas of interest in agripreneurship

Table 4 indicates that 75.8% of undergraduates of agriculture had proclivity for agripreneurship, while 65.0% of entrepreneurship undergraduates had proclivity for agripreneurship. Specifically, undergraduates of agriculture were highly interested in poultry egg production (65.7%), poultry meat production (60.0%) and poultry feed milling (50.8%) but less interested in agricultural produce marketing (26.7%) and beekeeping (7.5%). Similarly, undergraduates of entrepreneurship had specific interests in poultry egg production (53.3%), poultry meat production (48.7%) and poultry feed milling (40.0%) and less interested in agricultural produce marketing (26.7%) and beekeeping (9.2%).

Table 4: Distribution of respondents based on proclivity for selected areas of agripreneurship

Variables	Undergrad of Agriculture		Undergrad of Entrepreneurship	
	Frequency	**Percent**	**Frequency**	**Percent**
Proclivity	91	75.8	78	65.0
Specific areas of interest				
Poultry egg production	81	65.7	64	53.3
Poultry meat production	72	60.0	56	46.7
Poultry feed milling	61	50.8	48	40.0
Small ruminant production	48	40.0	21	17.5
Cattle rearing	49	40.8	16	13.3
Piggery/swine production	45	37.5	19	15.8
Snail rearing	55	45.3	15	12.5
Fish farming	43	35.8	32	26.7
Beekeeping	09	7.5	11	9.2
Arable crop production	46	38.3	24	20.0
Tree cropping	36	30.0	15	12.5
Agro-processing and value addition	45	37.5	08	6.7
Agric. Produce Marketing	32	26.7	32	26.7

Respondents' perceived constraints to agripreneurship

Table 5 presents respondents' perceived constraints to agripreneurship. The table shows that the sampled undergraduates of agriculture ranked inadequate support infrastructures 1st as their perceived most severe constraint to entrepreneurship. This is closely followed by unfavourable government policies and lack of farmland which were ranked 2nd and 3rd, respectively. As for undergraduates of entrepreneurship, unfavourable government policies was ranked 1st, followed by inadequate support infrastructures and lack of fund ranked 2nd and 3rd. However, undergraduates of both agriculture and entrepreneurship ranked lack of technical know-how 6th as their perceived least severe constraint to agripreneurship. Adekunle *et al.* (2009) found that the major constraints hindering youth participation in agriculture included inadequate credit facility, lack of agricultural insurance, poor returns to agricultural investment, lack of basic farming knowledge and lack of access to tractors and other farm inputs.

Table 5: Distribution of respondents' perceived constraints to agripreneurship

Variables	Undergraduates of Agriculture		Undergraduates of Entrepreneurship	
	Mean	Rank	Mean	Rank
Inadequate support infrastructures	1.90	1st	1.63	2nd
Unfavourable government policies	1.80	2nd	1.74	1st
Lack of farmland	1.61	3rd	1.28	5th
Lack of high value market for agric. Produce	1.58	4th	1.37	4th
Lack of fund	1.45	5th	1.38	3rd
Lack of technical know-how	1.15	6th	1.25	6th

Test of relationship between selected socioeconomic characteristics and proclivity for agripreneurship

Table 6 reveals positive relationships between undergraduates of agriculture's course of study (χ^2=7.588, p=0.050) as well as mother's discipline (χ^2=5.328, p=0.021) and proclivity for agripreneurship while gender (χ^2=5.822, p=0.016) and mother's discipline (χ^2=22.335, p=0.000) were significantly related to proclivity for agripreneurship among undergraduates of entrepreneurship. Osondu, Obike, and Ogbonna (2015) identified sex, age of the youth, annual income, location, and ethnicity as the factors influencing affinity for entrepreneurship.

Table 6: Result of Chi-square for test of relationship between socioeconomic characteristics and proclivity for agripreneurship

Variables	Undergraduates of Agriculture		Undergraduates of Entrepreneurship	
	χ^2 value	p-value	χ^2 value	p-value
Gender	0.907	0.341	5.822	0.021**
University attended	1.621	0.203	1.504	0.220
Course of study	7.588	0.050**	NA	NA
Mother's discipline	5.328	0.021**	22.335	0.000*
Father's discipline	0.659	0.417	2.889	0.089

** Significant at p≤0.05 NA: Not Applicable

Source: Field survey, 2019.

Test of difference in proclivity for agripreneurship between undergraduates of agriculture and undergraduates of entrepreneurship

Table 7 shows the result of test of hypothesis for significant difference in proclivity for agripreneurship between undergraduates of agriculture and undergraduates of entrepreneurship. From the table, the t calculated (1.710) is greater than the t tabulated (1.640) at 5% level of significance. Hence, the null hypothesis was rejected. This implies that significant difference existed in proclivity for agripreneurship between undergraduates of agriculture and undergraduates of entrepreneurship. This may be probably because undergraduates of entrepreneurship are more likely to see agripreneurship as a risky business venture due to production uncertainties caused by weather vagaries and climate change among other factors.

CONCLUSION AND RECOMMENDATIONS

The study concluded that more of the sampled agricultural undergraduates (75.8%) had penchant for agripreneurship compared to undergraduates of entrepreneurship (60.5%). Respondents were specifically willing to engage in

poultry production but grossly less interested in bee-keeping. Inadequate support infrastructures, unfavourable government policies and lack of fund among others, were pointed out as the major perceived constraints to agripreneurship. Course of study (degree option) and mother's discipline determined proclivity for agripreneurship among undergraduates of agriculture while undergraduates of entrepreneurship were influenced by gender and mother's discipline. Therefore, the study recommended that government at all levels should:

i. Endeavour to provide adequate support infrastructures on a sustainable basis, thus creating enabling environment for successful and rewarding agribusiness engagements, while prospective agripreneurs should pull resources together via cooperative societies to secure fund among other factors of production.
ii. Formulate farmer friendly policies to attract prospective entrepreneurs, towards sustainable youth engagement in agripreneurship.

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GENDER ANALYSIS OF FACTORS INFLUENCING SOIL AND WATER CONSERVATION TECHNOLOGY UTILISATION AMONG VEGETABLE FARMERS IN EKITI AND OYO STATES, NIGERIA

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ABSTRACT
The study assessed the gender analysis of factors associated with soil and water conservation technology usage among vegetable farmers in Ekiti and Oyo States, Nigeria. It specifically, described the socioeconomic characteristics of vegetable farmers and examined the gender-specific factors associated with soil and water conservation technology utilisation in vegetable production. The study adopted a multi-stage sampling procedure. Data were elicited from the respondents using an interview schedule and focus group discussion guide. The study used inferential and descriptive statistics to analyse the data from the survey. The findings showed that the mean age for male was 35 years and female vegetable farmers 41 years. While the mean years of vegetable farming experience for male was 16 years and female vegetable farmers was 19 years. Varimax factor rotation pattern was used to isolate six factors associated with soil and water conservation technology usage for male vegetable farmers, which were information-source factor (14.4%), family factor (14.0%), resources factor (11.7%), economic factor (10.5%), soil-fertility factor (8.3%), and institutional factor (8.0%). Also,five factors were isolated for the female vegetable which were include; personal-experience factor (21.6%), information source factor (20.0%), land acquisition factor (10.7%), resources factor (10.0%), and group membership factor (7.7%). Information, resources, economic, personal experience, and land acquisition were the gender-specific factors influencing soil water conservation (SWC) technology usage. It was recommended that the factors identified should be noted as springboard for technology development and dissemination in Nigeria, this will help in the removal of the existing gender gaps among the farmers, especially in the rural areas and ensure sustainable agricultural practices and rural transformation.
Keywords: Gender analysis, Soil-Water conservation, Vegetable farmers, Technology usage

INTRODUCTION

Food security is a major concern in sub-Saharan Africa (SSA). The concern is because countries in SSA suffer from low agricultural yields compared to the rest of the world (Olarinde, Binam, Abdoulaye, Maman, and Adekunle 2010) and because the smallholder farmers dominate the agricultural sector of most SSA countries. Nigeria's agricultural sector is grappling with fundamental issues of food security and sustainable agriculture because her food production is largely in the hands of smallholder farmers (Fatuase and Ajibefun, 2014).

Land degradation poses a severe threat to the sustainability of agricultural soils in Nigeria, which is caused by soil erosion (Akpokodje, Tse, and Ekeocha, 2010). Smallholder farmers of Nigeria, like in other places, are also confronted with the vagaries of climate change; hence for farmers to have increased agricultural productivity, which will lead to agricultural 'transformation and development,' there should be the restoration of soil fertility and conservation of soil and water resources.

The vegetable farmers in this study belong to the Underutilised Indigenous Vegetables (UIVs) farmers who were involved in the International Development Research Centre (IDRC) funded project called Nigerian-Canada underutilised vegetable (NicanVeg) project. The goal of the project was to popularise the production, processing, and consumption of underutilised indigenous vegetables (UIVs) in the rain-forest and savannah agro-ecological zones in Southwest, Nigeria with a view to empowering the participating farmers especially women, thereby enhancing household nutritional status and alleviating poverty (Adebooye *et al*., 2014).

The phase II of the project titled "MicroVeg" aimed at scaling up the indigenous vegetable production through the development and dissemination of micro-dosing technology to increase yields and income through value addition, as well as preserve soil and water ecosystems, and enable fertiliser cost saving (MicroVeg, 2015). The primary objective of the MicroVeg project is to improve environmental sustainability through better soil and water conservation (SWC) by developing a technology capsule on fertiliser micro-dosing and water management for underutilised indigenous vegetables (Micro Veg 2015). It is in view of this background that this study describes the socioeconomic characteristics of vegetable farmers and examined the gender-related factors associated with soil and water conservation technology utilisation in vegetable production.

METHODOLOGY

The study area was Ekiti and Oyo States, Southwestern Nigeria where the Micro Veg project is domiciled. Ekiti State comprises of sixteen Local Government Areas. It lies between latitude 7.667˚ N and longitude 5.250˚ E;and is bounded in the North by Kwara State, in the South by Ondo State, in the East by Kogi State and in the West by Osun State. On the other hand, Oyo State comprises thirty-three Local Government Areas with approximately 20,000 square kilometres of land area. The State is located between 7˚ and 9˚ north of the equator and bounded by longitudes 2˚ and 4˚ east of the Greenwich Meridian. It is bounded by Ogun, Osun, Kwara, and Republic of Benin in the South, West, North, and East, respectively. The average annual rainfall of the area ranges between 1150mm in the derived savannah and 1525mm in the rainforest zone. The Yoruba are the predominant inhabitants of the study area, which can be further, subdivided into some sub-ethnic groups because it is heterogeneous based on dialects. The primary occupation of the people is farming, with the predominance of simple tools such as hoes and cutlasses. The farmers cultivate both annual and perennial crops such as maize, cassava, yam, rice, cocoyam, tomato, pepper, plantain, banana, leafy and fruit vegetables, cocoa, kola, citrus, oil palm, and rubber. Animals such as poultry birds, pigs, sheep, goats, and cattle are reared for consumption and sale. Besides agriculture, other income-generating activities include fishing, trading, food processing, local soap making, mat weaving, cloth weaving, cassava processing, oil palm processing, tailoring, carpentry, basket weaving, pottery, and other small-scale enterprises.

A multi-stage sampling procedure was used to select respondents for the study. At the first stage, Ekiti and Oyo States were purposively selected based on their active vegetable production activities and participation in phase 1 of the project (NicanVeg). The second stage involved the selection of 50 percent of the MicroVeg project sites in each of the two states (proportionate technique). Ekiti State has a total number of 6 MicroVeg sites, while Oyo has 4 sites as of the time of the field survey. Three and two sites were selected from Ekiti and Oyo states, respectively, to give a total of five project sites. At the third stage, a simple random sampling technique was used to select respondents from each project site. At the last stage,10 males and 10 females from each project site in Ekiti state and 15 males and 15 females from each project site in Oyo state were randomly selected to give a total of 60 males vegetable farmers and 60 females vegetable farmers.A total of 120 respondents were selected for the study. The study used the structured Interview Schedule, and Focus Group Discussion Guide to elicit quantitative and qualitative information respectively

RESULTS AND DISCUSSION

Personal and socioeconomic characteristics

Results in Table 1 show that the mean age of male vegetable farmers (MVF) was 35.28 years with a standard deviation of 8.27 while the mean age of female vegetable farmers (FVF) was 40.94 years with a standard deviation of 10.34. This is in line with the findings of MicroVeg (2017),which revealed that FVF was older than their male counterparts. These findings are also in conformity with that of Deji *et al*. (2012) and Koledoye *et al*. (2013). The implication is that the majority of the MVF and FVF were in their active ages of production; hence they could actively participate in vegetable production, thereby enhancing food security. A higher percentage (80%) of the MVF were married, 18.3 percent and 1.7 percent were single and widowers respectively. In the female category, the majority (88.3%) of the FVF were married. The results unveiled that majority of the farmers was married. The result confirms that of Oluwalusi (2014) and Torimiro *et al*. (2014), who assert that vegetable farmers in southwestern Nigeria were married. The findings in Table 1a reveal that the majority of the MVF (70%) and most of the FVF (56.7%) came from the monogamous family. Conversely, a minority of the MVF (30%) and a few of FVF (43.3%) practiced polygamy. This finding reveals that monogamy was predominant in the study area. This observation may be because the majority were Christians, and their religion is not favorably disposed to marrying more than one wife, which is in agreement with the findings of Fungo *et al*. (2011). These findings infer that the traditional way of marrying two or more wives is gradually fading away because people are becoming more enlightened on the challenges associated with marrying two or more wives in the society. The mean household size for both the MVF and FVF was five persons with a standard deviation of 2.1and 2.0, respectively. This result shows that an average farmer in the study area has a household size of 5. It implied that rural households are gradually moving away from the tradition of having a large household size for labour on their farms; this is in tandem with the observation of (Alabi, 2005) who reported that majority of parents in the rural areas now send their children to schools instead of using them as cheap source of labour.

Results in Table 1 show that the mean years of formal education were 11.95 years and 9.61 years with a standard deviation of 2.89 and 2.55 for male and female vegetable farmers, respectively. The findings reveal that MVF in the study area spent more years in formal education than FVF. This finding is in tandem with the

submission of Torimiro *et al*. (2014), Oluwalusi (2014), and Olarinde *et al*. (2010), which established that the years of formal education is a springboard for the adoption and utilisation of agricultural innovation. The mean vegetable farming experience in years of male and female vegetable farmers were 16.25 and 19.22, respectively, while the standard deviation was 9.27 and 10.49, respectively. The finding revealed that FVF had relatively higher vegetable farming experience than their male counterparts. This finding implies that vegetable production is a traditional female task; male farmers are developing interest due to increasing popularity and economic value. These findings confirm the submission of Deji *et al*. (2012) and Torimiro *et al*. (2014).

Table 1: Distribution of respondents by socio economic characteristics

Variable	MVF n=60				FVF n=60			
	Frequency	%	Mean	S. D	Frequency	%	Mean	S. D
Age								
≤ 20.00	1	1.6			1	1.6		
21.00 - 30.00	15	25			7	11.7		
31.00 - 40.00	36	60	35.28	8.27	28	46.7	40.94	10.34
41.00 - 50.00	5	8.3			12	20		
51.00 - 60.00	2	3.3			11	18.3		
61.00 -70.00+	1	1.6			1	1.6		
Marital status								
Single	11	18.3			2	3.3		
Married	48	80			53	88.3		
Widow	1	1.7			5	8.3		
Family type								
Monogamy	42	70			34	56.7		
Polygamy	18	30			26	43.3		
Household size								
1-5	31	51.7			25	41.7		
6-10	21	35	5.0	2.1	24	40	5.4	2.0
Above 10	8	13.3			11	18.3		
Years of Formal Education								
< 6 years	0	0	11.95	2.89	8	13.3	9.61	2.55
6 -12 years	37	61.7			37	61.7		
13 years above	23	38.3			15	25.0		
Size of the Vegetable Farm (Ha)								
≤ 0.50	42	70			36	60		
0.60 –1	17	28.3	0.42	0.14	23	38.3	0.48	0.17
> 1	1	1.7			1	1.7		
Years of Farming Experience								
≤10.00	19	31.7	16.25	9.27	17	28.3	19.22	10.49
11.00-20.00	27	45.0			22	36.7		
21.00-30.00	10	16.7			12	20		
31.00 and above	4	6.6			9	15		

Gender-Specific Factors Influencing SWC Technology Utilisation

Factor and component analysis were carried out to isolate the crucial factors influencing the utilisation of SWC technologies in MicroVeg project sites. The relevant variables were inter-correlated and run with a varimax factor rotation pattern. Tables 3 and 5 show the results of the varimax rotation of variable included in the factor analysis, and the principal components subsequently extracted for male and female vegetable farmers. The results show that the inter-correlation between the variables yielded six factors for male vegetable farmers and five factors for female vegetable farmers. The factors were named based on the criteria used by Farinde (1995) and Ajayi (2002), which are:

i. The researcher's subjective interpretation of experiences from literature.
ii. Picking synonyms of the highest loaded variables on each factor.
iii. Retaining the name based on the similarity of the features reposed in the variables contributing to the factors and;

iv. Joint explanation of the meaning of the positive and highly loaded variables on each factor.

The factors associated with the utilisation of SWC technologies among male vegetable farmers are shown sequentially in Tables 2 and 3. The discussions on these factors are as follows:

Factor one: Information source factor

Variables that loaded very high on factor one was UIVs information source (L= 0.788), number of contacts with extension agent (L=0.756), agricultural information source (L= 0.699), access to credit (L=0.626), cosmopolite-ness (L= 0.328) and membership position (L=0.323). By implication, the male vegetable farmers have access to reliable information on vegetable production and the various SWC technologies utilised in their vegetable production.

Factor two: Family factor

Family type (L= 0.807), Household size (L=0.786), Age (0.776), and Years of farming experience (0.386) loaded highest on factor 2. This factor was named family factor based on the variable that has the highest loading. Farmers' family type, whether monogamy or polygamy, affects the SWC technologies utilised in terms of labour availability to work on the farm. The male farmers may employ their family labour during the preparation of the land for vegetable production by involving them in utilising SWC technologies. On the other hand, household size is also an additional variable to the utilisation of SWC technologies, a male farmer with a large household size would have more family labour compared to small household size, and this might increase the utilisation of SWC technologies by the male farmer.

Table 2: Result of a varimax rotated component matrix showing extracted factors associated with soil and water conservation technologies for male respondents

	Factors					
Variables	**1**	**2**	**3**	**4**	**5**	**6**
Source of UIVs information	.788*					
Number of Contacts with Ext Agents	.756*		.368*		.307*	
Source of Agric. Information	.699*		.403*			
Access to Credit	.626*					
Family Type		.807*				
Household Size		.786*				
Age		.776*		.357*		
Available Resources			.725*			
Years of Farming Experience		.386*	.696*			
Income from Vegetable			.443*	.750*		
Land Acquisition				.677*		
Size of the Vegetable Farm				.660*	.303*	
Soil Type					.843*	
Cosmopolite-ness	.328*				.428*	.415*
Institutions						.696
Year of Formal School		-.316				.596
Membership Position	.363					.443

Figures in * indicate variables with high loading on each factor.

Factor three: Resources factor

The variables that loaded highly for this factor were available resources (0.725), income from vegetable (L=0.443), agricultural information (L=0.403), and the number of contacts with extension agents (L=0.368). The resources available to the male farmers in terms of income and information also influenced their SWC technologies utilisation. This factor was named resources factor based on criterion three.

Factor four: Economic factor

The income of the male vegetable farmers (L=0.750), their land acquisition (L=0.677), and the size of their vegetable farms (L=0.660) were the three measures of loading that identified this factor. This factor was named based on criterion two. The income and size of the male vegetable farmer will influence his utilisation of the SWC technologies while the male farmer's mode of land acquisition has a direct relationship with his SWC technology utilisation.

Factor five: Soil fertility factor.

The variables that loaded very high on factor five was soil type (L=0.843). This was used to label this factor based on criterion two. Other variables found to positively and significantly contribute to this factor were cosmopolite-ness (L=0.428), number of contacts with extension agents (L=0.307), and size of vegetable farm (L=0.503). This implies that the type of soil the male farmer is cultivating will determine the extent of his SWC technologies utilisation. Also, contact with the extension agents and other farmers from different communities, as well as the size of the

vegetable farm of a male farmer, will significantly determine his level of SWC technology utilisation.

Factor six: Institutional Factor

The roles of the institution (L=0.696), years of formal schooling (L=0.596), membership position in organisation (L=0.443), and cosmopolite-ness (L=0.415) loaded highest on this factor. The various roles of institutions, such as extension agents and other governmental organisations, would influence the male farmer's utilisation of SWC technology. The educational level of the male farmers and their interactions with other farmers and their membership of association would enhance their acquisition of knowledge on various technologies. This relationship would influence their utilisation of SWC technologies.

Table 3: Factor's name, Eigenvalues and percentage variation accounted for by each factor associated with SWC utilisation for male respondents.

Factor	Name	Eigenvalue	% variance	Cumulative % variance
1	Information source factor	2.450	14.41	14.41
2	Family factor	2.383	14.02	28.43
3	Resources factor	1.997	11.74	40.17
4	Economic factor	1.782	10.48	50.65
5	Soil fertility factor	1.403	8.25	58.91
6	Institutional factor	1.365	8.03	66.93
7	Others		33.07	100.00

The factors associated with the utilisation of SWC technologies among female vegetable farmers are in Tables 4 and 5. The discussions on these factors are as follows:

Factor one: Personal-Experience factor

The years of farming experience (L=0.892), age (L=0.842), household size (L=0.723), years of formal education (L=0.659), Family type (L=0.607), income from vegetable (L=0.470), and size of the vegetable farm (L=0.478) had positive and high loading on factor one. Female farmers with various personal characteristics such as age, experience in vegetable farming, formal education, large household size, and other characteristics will have a positive disposition to utilise SWC technologies. The size of the farm and the income from the farm will determine the SWC technologies utilisation.

Factor two: Information-Source Factor

Variables that loaded very high on factor two were agricultural information source (L=0.860), source of UIVs information (L=0.826), access to credit (L=0.826), number of contacts with extension agents (L=0.649) and income from vegetable (L=0.536). This factor was named information source factor based on criterion three. The sources of information for the female farmers, if it is perceived to be reliable, will relatively influence their utilisation of such information to boost vegetable production.

Factor three: Land Acquisition factor

Three variables were positive and they significantly contributed to this factor. These were land acquisition (L=0.851), income from vegetable (L=0.480), and the number of contacts with extension agents (L=0.321). This factor was named land acquisition factor based on criterion two, and implies that the female farmers' mode of land acquisition will determine their SWC technologies utilisation.

Factor Four: Resources Factor

Available resources (L=0.734), cosmopolite-ness (L=0.614), and the number of contacts with extension agent (L=0.524) loaded highest on factor 4. This factor was named resources factor based on criterion two. The availability of resources for SWC to the female farmers would influence their utilisation of the SWC technologies. Farmers' contact with the extension agents enhances their being aware of the current trends in agriculture.

Factor five: Membership Position factor.

Membership position (L=0.862) loaded highest on this factor. Usually, the mutual support amongst farmers strengthened through membership in social organisations. When the female gender is recognized and given a position of responsibility within an organisation, it strengthens the relationship within the social organisation. It implies that the female farmers would have access to information on current technologies, and this would influence their utilisation of such technologies.

Table 4: Result of a varimax rotated component matrix showing extracted factors associated with soil and water conservation technologies for female respondents

	Factors				
Variables	**1**	**2**	**3**	**4**	**5**
Years of Farming Experience	.892*				
Age	.842*				
Household Size	.723*				
Year of Formal School	.659*	.315			
Family Type	.607*				.411*
Soil Type	.501	.481			
Source of Agric. Information		.860*			
Source of UIVs information		.826*			
Access to Credit		.826*			
Number of Contacts with Extension Agents		.649*	.321	.524*	
Income from Vegetable	.470	.536	.480*		
Land Acquisition			.851*		
Institutional			.529*		-.309
Available Resources			-.307	.734*	
Cosmopolite-ness				.614*	
Size of the Vegetable Farm	.478			.519*	
Membership Position					.862*

Figures in * indicate variables with high loading on each factor.

Table 5: Factor's name, Eigenvalues and percentage variation accounted for by each factor associated with SWC utilisation for female respondents

Factor	Name	Eigenvalue	% variance	Cumulative % variance
1	Personal-Experience factor	3.664	21.56	21.56
2	Information source factor	3.385	19.91	41.47
3	Land acquisition factor	1.829	10.76	52.23
4	Resources factor	1.695	9.97	62.20
5	Group membership factor	1.296	7.63	69.83
6	Others		30.17	100.00

CONCLUSION AND RECOMMENDATIONS

The primary objective of the MicroVeg project was to improve environmental sustainability through better soil and water conservation (SWC) by developing a technology capsule on fertiliser micro-dosing and water management for underutilised indigenous vegetables. Literature provides clear information on gender roles in SWC but not specific about the roles of women in the utilisation of SWC technologies, hence the motivation behind this study. The findings of the study show that FVF were older than their male counterparts. Furthermore, it identified six factors for MVF and five factors for FVF associated with their utilisation of SWC. Information source and family factors are crucial to the utilisation of SWC among the MVF, while the personal-experience and information source factors are critical to the utilisation of SWC among the FVF.

The following recommendations were made from the study. There is a need for integration of gender-specific principles into land tenure and tenure rights to ensure female farmers' unrestricted access to and control over land by debunking the economic and socio-cultural factors responsible for this. Also, the factors identified should serve as a springboard for technology development and dissemination to enhance gender equity in technology utilisation among the farmers.There is a need for government and non-governmental organisations as the major stakeholders in agriculture to integrate gender-responsive approach that recognizes and considers the gender needs among the farming populace into their policies, programs, and structure for improved food security and sustainable development.

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INFRASTRUCTURE CAPITALS AND COMMUNITY TRANSFORMATION IN TOURISM DESTINATIONS OF SOUTHWEST NIGERIA

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ABSTRACT
The study analysed the influence of tourism infrastructure on community transformation in Southwest Nigeria. One most prominent tourism destination was purposively selected from each state of six; Oyo - Agodi Gardens, Ogun - Olumo Rock, Osun - Osun Osogbo Groove, Ondo - Idanre Hills, Ekiti – Ikogosi Warm Springs, and Lagos - National Theatre. Data were collected with the aid of interview guided questionnaire. Information on distribution of Infrastructure capitals and community transformation across the states in Southwest Nigeria were collected from respondents. Variables were measured with the use of 4-point scale on odd number continuum from 0 to 5 (putting the minimum at 0, maximum 5) (sustainably transforming (ST) - 5, fairly sustainably transforming (FST) - 3, minimally sustainably transforming (MST) - 1, and not (NST) sustainably transforming - 0). Systematic random sampling technique (with interval of 20) was employed to select 30 residents from each destination, giving a total of 180 respondents. The results revealed social factors had Cronbach's Alpha values of social (0.799) with variance 10.310%; political factors (0.811) with variance 9.237%; natural factors (0.781) with variance 9.103%; economic factors (.614) with variance 10.117%; physical factors (.749) with variance 10.312%; human factors (0.721) with variance 10.003%; and cultural factor (0.611) with variance explained as 9.041%. The results further revealed that social capital ($\beta = 0.164$; $p<0.05$); physical ($\beta = 0.174$; $p<0.05$); human ($\beta=0.184$; $p>0.05$); and natural capital ($\beta=0.159$; $p<0.05$) showed significance with community transformation. However, economic capital ($\beta=0.113$; $p>0.05$); political factors ($\beta=0.181$; $p>0.05$); and cultural factor ($\beta=0.130$; $p>0.05$) showed no significant prediction but all had t values greater than 1. Infrastructure capitals (social, physical, and natural) had significant relationship with community transformation. It is recommended that provision of infrastructure capital should be commensurable across board to give a worthwhile development, since all the capitals were significant to community transformation.

Keywords: Infrastructure capital, Community transformation, Tourism destination, Tourism development.

INTRODUCTION

The advent of globalisation has changed the tides of many contexts both in theory and practice. Community is not an exception of such changes. Conventionally, a community is often described on geography, such as; village, town, or city. In the current dispensation, a community might include a group of people who share a common interest or value, such as; tribe, residence, faith, job/office, and other demographics, and even with or without physical proximity. In fact, virtual communities exist on the basis of Information Communication Technology (ICT); Twitter, Facebook, Instagram, WhatsApp, and a host of others. In tourism language, boundaries that share some form of attraction identity are called host community. One thing is common to the descriptions of community, a people sharing common value; physical or virtual setting, simply, a space. Community could then mean a space occupied by people for business, shelter, political, and social life. According to James, Nadarajah, Haive, and Stead (2012), a community is a group or network of persons who are connected (objectively) to each other by relatively durable social relations that extend beyond immediate genealogical ties, and who mutually define that relationship (subjectively) as important to their social identity and social practice.

Community in tourism context encompasses a space, interaction of people, and all there in for the benefits of individuals, government, society, and generally, mankind. At community level, tourism offers opportunities for direct, indirect, and induces employment and income, spurring regional and local economic development (Aref, Gill, and Aref, 2015). Influx of guests and tourists to a community comes with unprecedented gains; ranging from investment opportunity, product and service patronage, aesthetic value, and acculturation. Tourism policies can be used to control environmental damage or loss of public access to natural resources and to form conservation programs to encourage residents' and tourists' enjoyment and stewardship of the environment (Tang, 2015). Tourism activity also involves economic costs, including the direct costs incurred by tourism businesses, government costs for infrastructure to better serve tourists, as well as congestion and related costs borne by individuals in the community (Adebayo, Jegede, and Eniafe, 2014). Reflection of local elements in tourism offerings gives an attraction and a community a bespoke identity. Hanafiah, Hemdi, and Ahmad (2015) underline competitiveness as one of the essential elements in the tourism industry foundation, being a critical concept in assisting

tourism development, destination management and tourism strategies planning.

Osayande (2011) averred that transformation is phenomena as change, progress, growth, development, industrialization, and modernization; it is a goal that every individual, social group, community, or nation strives to achieve. It is also a process of comprehensive societal change whereby societies diversify economies and reduce reliance on agriculture; become dependent on distant places to trade and to acquire goods, services, and ideas (Idoko, 2018). Development is often accompanied with its brunt that is often undesirable. Andrés-Rosales, Sánchez-Mitre, and Cruz (2018) identified insecurity as infringing high social and economic costs and slow human capital, impoverish families, limit new opportunities for young people and worsen problems such as social exclusion and income distribution. According to Adewusi (2013), individual is an agent of social, educational, economic, industrial, technological, agricultural, political, cultural and recreational developments. Infrastructure focuses more on providing preconditions for development, while recreational facilities are seen as a way to improve everyday life (Mandić., Mrnjavac, and Kordić, 2018). In a broader sense, it includes all those facilities that tourists use when they leave their homes, reach their destination and return back home (Lohmann, and Netto, 2017), while in reality, most of the infrastructure assets are constantly used by residents (Hadzik, and Gabana, 2014).

According to Arnold and Flora (2012), community transformation viewed as development, focuses on creating a healthy ecosystem where all people can thrive and includes opportunities for all residents to participate in their activities of choice. Many researches treat social capital as a factor of production similar to human capital and physical capital (Jordan, Anil, and Munasib, 2010). The natural and human capitals exhibited a positive correlation with the farm livelihood strategy, financial and social capitals are the catalyst for driving non-farm activities (Fang, Fan, Shen, and Song, 2014). Faith organisations, pressure groups, social groups, industries, individuals, governmental and Non-Governmental Organisations (NGOs) and others (international organisations and diaspora) can be stakeholders in transformation at any point in time. Functionaries of development come in form of policies, funds, infrastructure, and interventions among others. Among these are NGOs which focus on local-level development projects, usually filling gaps government services have not met (Klugman, 2014). Tortajada (2016) averred that NGOs have played leading roles in delivering disaster relief, humanitarian aid, and development assistance.

Studies abound on community development and factors of development, most did not capitalise factors of development as infrastructure capitals, hence, ended up with a shoddy interpretation. The few studies that did never incorporated tourism content as transformation architecture in the community. The study therefore sought to analyse the influence of infrastructure capitals on community transformation in tourism destinations. Specifically, the study addressed some research questions by considering the following objectives:

i. Identify the capitals of infrastructure for community transformation in tourism destinations
ii. Investigate the agents of transformation in tourism destinations
iii. Assess the influence of infrastructure capital on tourism community transformation.

The hypothesis of the study: There is no significant contribution of infrastructure capitals toward community transformation.

Conceptual framework: Infrastructure capitals and community transformation

From Figure 1, infrastructure varying capitals to gain access to the community via agents viz. individuals, pressure groups, governments, NGOs, social groups, It is the driver of the transformation capitals (social, financial, physical, political, human, natural, and cultural) into the community. The nexus between the community and tourism is so strong that it constitutes a means for the different livelihood capitals for the host people while the destination in turn offers all the architecture for tourism to be sustainable. The agents of the transformation capitals spread all about the community by supplying the enabling environment for the interjection which gives birth to desiring development. Tourism leverages on capital infrastructure via the various agents like individuals, industries, governments, NGOs, faith organisations, pressure groups, social groups, and others which may include Diaspora and international organisations.

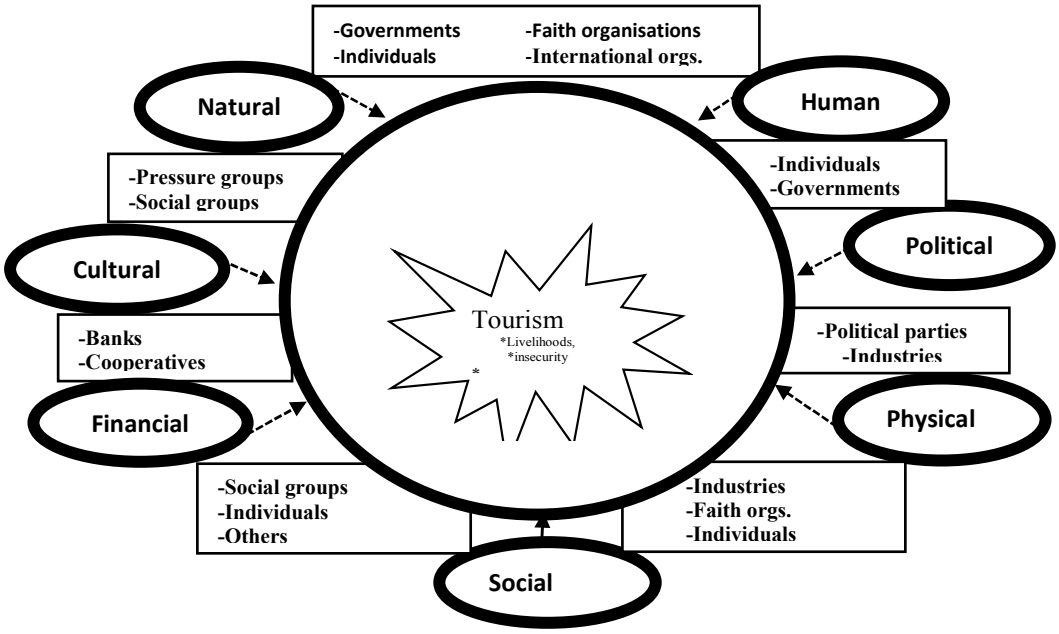

Figure 1: Conceptual framework for the study

METHODOLOGY

The Southwest Nigeria is one of the six geopolitical zones in Nigeria. It comprises six states, namely; Oyo, Osun, Ondo, Ogun, Ekiti, and Lagos States. The zone is specially blessed with arrays of idyllic touristic resources. The Southwest Nigeria as a destination is endowed with all year round clement weather, tracts of undistorted nature ranging from tropical forests, magnificent parks, rolling lulls, waterfalls, diverse wildlife, beaches, and a host of others. To its credit, it is boastful of cultural and natural resources of museums, ancient slave sites, palaces, shrines, pristine culture, crafts and artistry, springs, mountains, hills, and most importantly a crop of hospitable people.

One most prominent tourism destination was purposively selected from each state; Oyo - Agodi Gardens, Ogun - Olumo Rock, Osun - Osun Osogbo Groove, Ondo - Idanre Hills, Ekiti – Ikogosi Warm Springs, and Lagos - National Theartre. Systematic random sampling technique was employed to select 30 residents (interval of 20) from each town of one per state, giving a total of 180 respondents. Residents were sourced from and within the neighbourhoods of the destinations; hence, familiarity to the community was paramount. Interview guided questionnaire was used to elicit information from the respondents. The questionnaire was sectioned into three, viz; community characteristics with checklist of infrastructure capitals, tourism resources, and agents of community transformation.

To measure capitals of infrastructure for community transformation - respondents were asked to indicate the possession of the items listed on infrastructure capitals. The level of sustainability towards infrastructure capital possession from the list of items matching six categories of capitals provided on a 4 point scale on odd number continuum from 0 to 5 (putting the minimum at 0, maximum 5) (sustainably transforming (ST) - 5, fairly sustainably transforming (FST) - 3, minimally sustainably transforming (MST) - 1, and not sustainably transforming (NST) - 0). The grand mean was calculated for each capital and used to determine minimum and maximum sustainability. These were plotted into pentagon to reveal the collective possession of all the capitals and determine its optimal or minimal sustainability in the states. Respondents were asked to indicate their perceived agents of transformation in tourism destinations. Residents were asked to indicate Yes (1) or No (0) against 8 items. Frequency and percentage were calculated.

Community transformation was measured on community characteristics (experiences / observations) of respondents in the community, these were listed and scored as: not present = 0, present = 1. Data were analysed using regression analysis and factor analysis.

RESULTS AND DISCUSSION

Distribution of infrastructure capitals across the states in Southwest Nigeria

Figure 2 shows the distribution of capitals according to states. The radar is the most efficient presentation for capitals. It gives a pictorial outlook of the distribution of the capitals in comparison with others. Studying the radar in Figure 2, there is no state in Southwest Nigeria that has exhausted its optimal potential for community transformation. The use of radar reveals the size/scale of tourism infrastructure vis-à-vis community transformation. No state from the presentation had perfect radar of equal sides; and no state had optimised its points on

all sides - political, social, human, economic, cultural, and physical capitals. From the radar, it can be seen that "0" is at the centre which depicts No capital. The numbers graduate from 1 to 5 to depict level of capital sustainability. '5' depicts highest sustainability any capital can have.

However, the level of sustainability is measured by evenness and skewedness of the pentagon. This is not surprising as each state was yet to exhibit all capitals at optimal levels. Lagos State (social=4, p=4.0, natural=3.1, economic=3.6, physical=3.8, cultural=3.3, human=3.7) had the radar shape that mostly depicted high level of sustainable transformation. Ondo, Osun, and Oyo States had skewed radar which depicts deficits in some infrastructure capitals. Ogun and Ondo States had more of natural capital but no commensurable levels of other capitals to give such level of sustainable transformation. Oyo State had high level of physical capital but deficient in others to make up a commensurable sustainable transformation. Oyo and Ondo States had most skewed radars of physical and natural capitals respectively but without commensurable proportions/levels of other capitals to obtain meaningful sustainability. The implication of this is that uniform levels of infrastructure capitals give commendable level of transformation. Ogun State had slightly skewed radar towards natural capital (4.1), this level does not commensurate with the levels of other capitals, and hence, it is a waste. Osun State (social=2.1, p=1.4, natural=2.2, economic=1.8, physical=2.4, cultural=3.3, human=2.2) had the smallest and equally skewed radar that suggest low transformation.

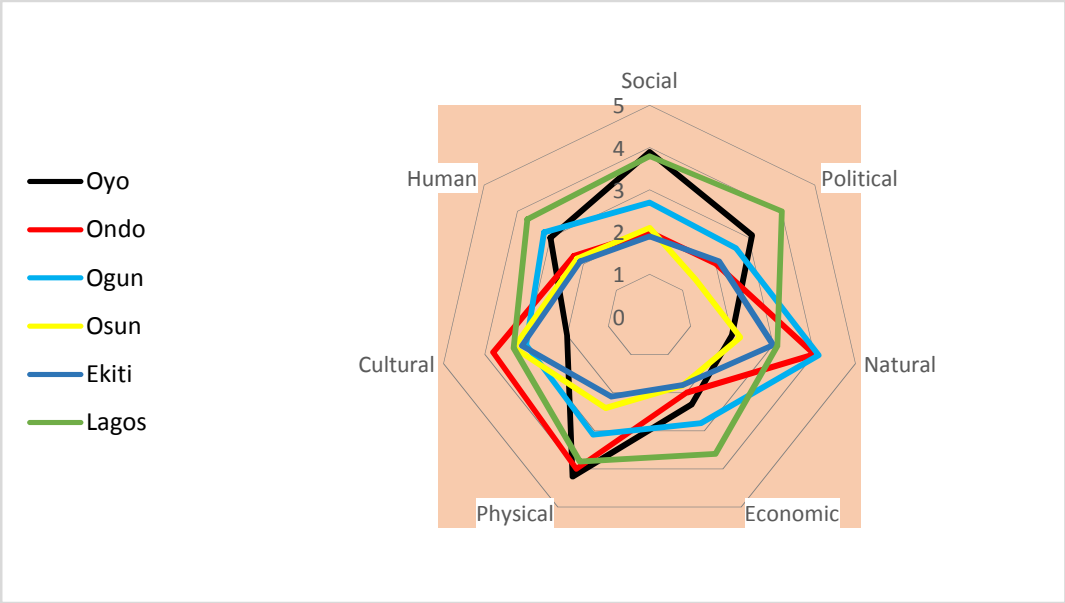

Figure 2: Distribution of infrastructure capitals in Southwest Nigeria

Agents of community transformation

Figure 3 shows the percent involvements of the different agents of community transformation. Governments (32.4%) at different levels had highest involvement in infrastructure intervention for communities. Individuals (15.1%) who were residents domestically and business wise had the second highest percentage of involvement in infrastructure for community transformation. Pressure groups (12.7%) which include political parties had the third involvements. The rest which included; industries (12.1%), NGOs (9.2%), others (7.0%) may include international organisations, social groups (6.3%), and faith organisations (5.2%) included Christian and Islamic bodies also contributed in different percentages to infrastructure towards community transformation. The result is in line with Adebayo, Jegede, and Eniafe (2014) that government incurred cost on infrastructure towards community. The results corroborated Klugman (2014) that remarked the focus of NGOs on local-level development projects, usually filling gaps government services have not met. Adewusi (2013) also identified individuals as an agent of social change in the community. However, the level of involvement of these agents identified by this research was not revealed.

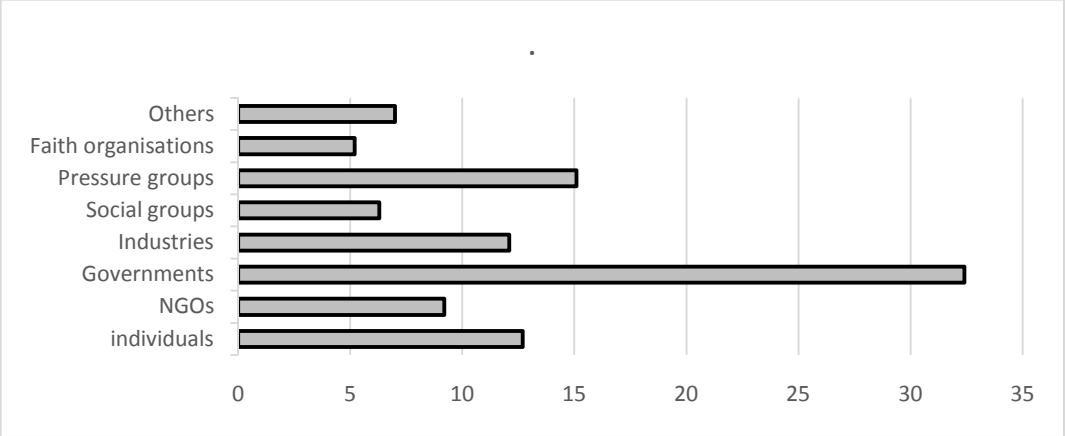

Figure 3: Distribution of agents of community transformation

Infrastructure capitals and community transformation

Table 1 shows the Eigen value of more than 0.3 for the six variables. Also, Cronbach alpha of 0.711 that is close to 1, the value for the analysis is determined as adequate considering statistical significance, hence, the scale is consistent and reliable. A satisfactory Kaiser Meyer Olkin (KMO) value of 0.787 was recorded. The Bartlett's test of sphericity was calculated as 2119.461. The finding shows that the variables were statistically significant at a level of 0.001. Based on KMO and Bartlett's tests score, factor analysis component factor analysis was run for identification of the principle components. Table 1 shows the seven capitals as well as the eigen values related to these factors, % variance explained and factor loadings (indicating which each item is associated with which factor). Total variance explained was 66.132%. Social capital ($\alpha = 0.799$) with variance explained as 10.319%; political capital ($\alpha = 0.811$), variance explained as 9.237%; natural capital ($\alpha = 0.781$), variance explained as 9.103%; economic capital ($\alpha = 0.614$) with variance explained as 10.117%; physical capital($\alpha = 0.749$), variance explained as 10.312%; and cultural capital ($\alpha = 0.611$) with variance explained as 9.041%; and finally, human capital ($\alpha = 0.721$) with variance explained as 10.003% were significant.

The implication of the finding is that every capital item was suitable for infrastructure capital and all the capitals were significant to community transformation. The findings of Adewusi (2013) found that social, educational, economic, industrial, technological, agricultural, political, cultural and recreational developments were significant to development changes. The study also agreed with Jordan, Anil, and Munasib (2010) that social capital as social networks and cultural norms, believed to facilitate political participation and good governance. This implies that all the capitals are important for transformation as availability of some can make some others exist.

Contribution of infrastructure capitals toward community transformation

Table 2 shows social capital ($\beta = 0.164$; $p<0.05$) was greater than 0.05 and significant at t-value 1.840; physical capital ($\beta = 0.174$; $p<0.05$) showed significant contribution to community transformation, the Beta value greater than alpha 0.05 as well t value of 1.985; human capital ($\beta = 0.161$; $p<0.05$) shows significant contribution to community transformation, the Beta value greater than alpha 0.05 as well t value of 1.733. Also, natural capital ($\beta = 0.159$; $p<0.05$) shows significance with community transformation at t-value 1.613. Although natural capital seems to have a Beta-value that is neither less than 0.05 or greater than 0.05 hence, hypothesis is rejected as $p = 0.05$, even as it shows a high insignificant level of 0.506. Political capital ($\beta = 0.181$; $p>0.05$) also showed no significant contribution to community transformation, the Beta value greater than alpha though, the t value of 0.617. Economic capitals ($\beta = 0.113$; $p>0.05$) also shows significant prediction towards community transformation as its t value was 2.687 which very much greater than 0.05 significant level. Finally, the findings on cultural capital ($\beta = 0.130$; $p>0.05$) shows no significant contribution to community transformation with t-value 1.329; though, the hypothesis is rejected as Beta-value was greater than 0.05. From the findings, only political capital did not show significant contribution to community transformation. The position is that without political capital in place, a community can be transformed if other capitals such as; physical, social, natural, economic, and natural are in place.

The finding of the study is in agreement with Emery and Flora (2006) that identified seven infrastructure capitals essential for transformation, viz. social, human, built, political, financial, cultural, and natural. The result also corroborated the finding that social capital was found to have highest influence on community transformation (Emery, and Flora, 2006). Social capital which included interaction / information, and ties that

people may have is very strong as it can be applied to work for other capitals. The study also agreed with Jordan, Anil, and Munasib (2010) that many researches treat social capital as a factor of production similar to human capital and physical capital (Jordan, Anil, and Munasib, 2010). The findings was a also in agreement with Fang, Fan, Shen, and Song (2014) who found natural and human capitals exhibited a positive correlation with the farm livelihood strategy, while social and financial capitals were significant with non-farm .

Table 1: Factor analysis showing infrastructure capitals and community transformation

Factors / Variables	Factor loadings	%variation explained	Eigen value	Cron. alpha
Social		10.319	3.993	.799
Security apparatus	.744			
Road	.692			
Electricity/Water	.622			
Associations/groups	.651			
Image/reputation	.541			
Media/ICT	.612			
Political		9.237	2.994	.811
Policies	.812			
Rules and regulations	.797			
Govt. offices	.723			
International relations	.701			
Political offices	.700			
Natural		9.103	2.713	.781
Vegetation	.736			
River/springs	.713			
Weather	.819			
Wildlife	.747			
Land	.815			
Hill/Mountains	.727			
Economic		10.117	1.231	.614
Markets	.780			
SMEs	.816			
Stores	.630			
Banks	.611			
Wages	.553			
Physical		10.312	1.267	.749
Industries	.743			
Town planning	.701			
Location	.724			
Institutions	.722			
Faith buildings	.633			
Built structure	.610			
Sports	.774			
Cultural		9.041	1.131	.611
Festivals	.714			
Museum	.751			
Cuisines	.503			
Historical sites	.707			
Folklores	.613			
Dance	.536			
Music	.671			
Human		10.003	1.214	.721
Health	.743			
Individuals/people	.639			
Strength/stamina	.713			
Skill/knowledge	.717			
Total	68.132			

KMO Sampling Adequacy .787; Sphericity Test:Chi sq. 2119.461; df = 178; Sig. = 0.000; (α= 0.711)

Table 2: Regression analysis for community transformation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	1.315	0.340		3.867	0.000
Social	0.150	0.082	0.164	1.840	0.068
Physical	0.148	0.074	0.174	1.985	0.059
Political	0.113	0.081	0.181	0.617	0.401
Natural	1.197	0.087	0.159	1.613	0.506
Economic	0.116	0.081	0.113	2.687	0.008
Human	0.161	0.081	0.184	1.733	0.060
Cultural	0.122	0.092	0.130	1.329	0.186

Dependent Variable: Community transformation

CONCLUSIONS AND RECOMMENDATIONS

Infrastructure capitals were found to have significant relationship with community transformation. It could be inferred from the capital pentagon that none of the states in Southwest Nigeria had optimised its potential in terms of capitals hence, none is optimally sustainably transforming. Lagos State was close, but not yet there as the web did not reflect a perfect/balanced pentagon. The situation in other states like Osun, Ondo, Ekiti, and Ogun is despicable as infrastructure capital assets pentagons were skewed or lop-sided giving an impression of unbalanced / unsustainable transformation. Social, physical, and natural capitals were most significant for community transformation. This is due to the fact that some capitals could come to exist and lead to acquisition of others. Social capital (group membership, networking,); physical capital (industries, built structures, etc.); and natural capital (weather, land, river, etc.) can bring about assets that will constitute economic capital (cooperatives, thrifts, markets, etc.); and human (people through migration, strength, knowledge, health, skill, etc.) among others.

It is recommended that:

i. Since government is the principal stakeholder and the giant donor of infrastructure assets, it should put in place a system to regularly evaluate infrastructure capital of communities at different levels based on needs, to be able to attend to capital needs deficits for optimal sustainable transformation. Based on regular assessment, blue print / feedback on the state of infrastructure capital should be made available for other agents of community transformation to attend to deficit areas for optimal sustainable transformation. This will also give the mechanism for planning, managing, and maintenance of infrastructure.
ii. Commercialisation - applying commercial operations in the public sector towards infrastructure supplies is apposite. To achieve commensurable infrastructure for optimal sustainable transformation, there is need to conceive infrastructure capital as a 'service industry' to providing goods that meet customers' demands. This will encourage public or private sectors to run on business lines by having clear and coherent goals focused on delivering services with autonomous management.
iii. Provision of infrastructure capital should be commensurable across board to give a worthwhile development.

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GENDER DISPARITIES IN ACCESS TO CREDIT AMONG FARMING HOUSEHOLDS IN IWO AGRICULTURAL ZONE OF OSUN STATE, NIGERIA

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ABSTRACT
This study analysed gender disparities in access to farm credit among farming households in Iwo Agricultural Zone of Osun State, Nigeria. Multistage sampling procedure was used to select sixty each, of male and female farming household heads as study sample. Gender disaggregated primary data were collected on socioeconomic characteristics, sources of credit, volume of credit granted and constraints to credit access. Data were analysed using descriptive (frequency counts, percentages, mean, standard deviation and ranking) statistics. Results reveal that mean ages of male and female farmers were 50±1.45 and 52±1.56 years respectively, 31.7% and 41.7% were married with mean household size of 5 and 4 persons for male and female farmers, respectively. Average farm sizes were 4±0.17 and 3±0.15ha, while the mean years of farming experience was 8±0.15 years and 6±0.13 years for male and female farmers, respectively. Results further reveal that all (100.0%) the respondents obtained farm credit from cooperative societies while the other meaningful sources of credit were money lenders (males 20.0%, females 30.0%) and microfinance banks (males 23.8%, females 16.7%). The major constraints to credit access included lack of collateral (males 1.76, females 1.88), high interest rate (males 1.72, females 1.88) and late approval of loans (males 1.64, females 1.58). The study concluded that both gender have access to credit through cooperative societies, but males had better access to credit from formal financial institutions, hence, credit institutions in the study area should grant timely low interest credit to both gender and possibly waive the required collaterals for farmers.
Keywords: Gender differences, Credit access, Farming households.

INTRODUCTION

Farm credit is among the essential factors needed for agricultural production as it enables farmers secure farm inputs and hire labour promptly, to execute their farm operations which are time bound. Akpan, Inimfon, Samuel, Edem and Uwemedimo (2013) affirmed that farm credit is widely recognized as one of the intermediate factors between the adoption of farm technologies and increased farm income among other prerequisites for attaining the national goal of reducing rural poverty and ensuring self-sufficiency in food production in the country. Agricultural credit is conceptualized as an undertaking by individual farmers or farm operators to borrow capital from intermediaries to satisfy farm needs at the appropriate time with a view to refunding it later. Thus, credit can be in cash or kind and can be obtained from formal, semi-formal or informal sources. Gender inequality exists in access to productive resources such as land, credit and agricultural inputs, technology, extension, training and services that would enhance women productive capacity (Milcah, 2014).

IFPRI (2012) affirmed that women play critical and potentially transformative role in agricultural growth in developing countries, but they face persistent obstacles and economic constraints limiting further inclusion in agriculture. Women are the backbone of the development of rural and national economies (Mucavele, 2013). Women comprise 43% of the world's agricultural labour force, which rises to 70% in some countries. The structural roles of men and women in agricultural cycle reveal that women are more active specifically in processing and marketing of agricultural products in Nigeria (Ademilua *et.al*, 2017). FAO (2011) asserted that women provide approximately 40% of total agricultural labour but own only 2% of the agricultural land. Despite women's enormous contributions to production, their access to needed farm resources has been very low because of inadequate knowledge and training in the use of improved technologies FAO (2015). FAO (2010) highlighted the need to close the gender gap in access to productive resources, education, extension and financial services.

Past studies have identified reasons for poor credit access among rural farmers in Nigeria. Akpan *et al*., (2013) reported that farmers' age, gender, farm size, membership of social organisation, extension agent visits, distance from the borrowers (farmer) residence to lending source, years of formal education and household size are important determinants of access to credit among poultry farmers in southern Nigeria. Considering the sociocultural environment of most agrarian communities in Nigeria, there is an overwhelming need to reconsider the issue of access to credit by rural farmers on gender basis. Lack of access to credit by rural households has negative consequences on agricultural productivity, income generation and household welfare (Ma-Azu, 2015). A farm household has access to credit from a source, if it is entitled and able to borrow from that source, whereas it participates in the credit market if it borrows from that source of credit. It is against

this background that this study was poised to address the following specific objectives:

i. to describe the socioeconomic characteristics of the male and female farmers in the study area
ii. to identify the sources of credit available to male and female respondents
iii. to examine the differences in the amount of credit granted to male and female respondents
iv. to identify the major constraints to credit access amongst male and female respondents in the study area.

METHODOLOGY

The study was conducted in Osun State. The state is located in the southwest zone of Nigeria. It is bounded in the North, South, East and West by Kwara, Ogun, Ondo and Oyo States, respectively. Agriculture is one of the most prominent livelihood activities in the state.Osun state has 30 local government areas divided into 3 agricultural zones; Iwo, Ife-Ijesha and Osogbo housing 7, 11 and 12 local government areas, respectively. Specifically, the study was conducted in Iwo Agricultural Zone of the state. Three-stage sampling technique was used to select sample for the study. In the first stage, 2 (about 30%) local government areas; Iwo and Ayedaade were randomly selected from Iwo zone. Second stage involved purposive selection of 3 most agrarian communities from each of the 2 selected L.G.As in Iwo zone of Osun ADP giving 6 communities in all, while the third stage involved selection of 20 (10 male-headed and 10 female-headed) households from each of the six (6) selected communities using snow-ball technique, to give a total of 120 (60 male; 60 female) respondents as study sample. Primary data were collected from the respondents via interview schedule. Age of household head was measured as number of years in existence, level of education as number of years spent in school, household size as number of people living together and feeding from the same pot, farm size as land area under cultivation in hectares, annual income in naira etc. Gender disaggregated sources of credit was measured as formal and informal credit sources available to farmers, credit access as total amount of credit received estimated by aggregation of the amount of credit obtained by male and female farmers from formal and informal credit institutions and constraints measured in terms of extent of severity of the listed constraints. Data were analysed using descriptive statistics. The descriptive statistics used in the study included frequencies and percentage, mean, standard deviation and ranking.

RESULTS AND DISCUSSION

Socioeconomic characteristics of respondents

Table 1 reveals that 38.3% and 36.7% of male and female respondents were within the age range of 40-59 years, while the mean age was 50±1.45 and 52±1.56 years, respectively. Majority of male (83.3%) and female (90.0%) respondents were married. Male respondents had 8 ± 4.35 years of formal education on the average while their female counterparts had 6 ± 3.85 years of formal education. The annual farm income of male and female respondents was ₦168,066 and ₦126, 083, respectively. More than one-third (42.0%) and (40.0%) of the male and female farmers, respectively, had household size ranging from 1-5 persons and means of 7 and 6 persons, respectively. This implies that that both male and female farmers in the study area have similar household sizes to cater for. Hence, both gender should have fair access to productive resources to live worthy lives. Comlan *et al*. (2014) found relationship between gender and farms technical efficiency among farmers in Benin. Table 1 further indicates that 63.3% of male and 80.0% of female farmers had farm sizes ranging from 1-3 hectares with means of 4±0.17 and 3±0.15 ha, respectively. Lastly, Table 1 shows that while 36.7% of male and 50.0% of female farmers had farming experience ranging between 6-10 years; their means of farming experience was 8±0.15 years and 6±0.13 years, respectively.

Sources of credit available to male and female respondents

Table 2 shows the various sources of credit available to male and female respondents. All the sampled respondents (male and female) had access to credit through cooperative societies. On the other hand, male farmers had better access to credit from microfinance bank (23.3%) and commercial banks (6.7%) sources, while female farmers had better access to credit from daily contribution (40.0%) and money lender (30.0%) sources. This result implies that female farmers have better access to informal credit sources particularly the money lenders which usually attracts high interest rates which in turn eats deep into their gross margin. This result corroborates the findings of Busari and Idris-Adeniyi (2016).

Table 1: Distribution of respondents based on socioeconomic characteristics

Variables	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Age (Years)				
20 – 39	06	10.0	02	3.3
40 – 49	10	16.7	04	6.7
50 – 59	32	53.3	38	63.3
60 – 69	04	6.7	06	10.0
70 – 79	08	13.3	10	16.7
Mean	**50.0**		**52.0**	
Gender	**60**	**100.0**	**60**	**100.0**
Marital status				
Single	0	0.00	0	0.00
Married	50	83.3	54	90.0
Divorced	0	0.00	0	0.00
Widowed	10	16.7	06	10.0
Years of Formal Education				
No formal education	22	36.7	30	50.0
1 – 6	18	30.0	20	33.3
7 – 12	12	20.0	06	10.0
13 – 18	08	13.3	04	6.7
Mean	**8.0**		**6.0**	
Annual Farm Income (₦)				
1,000 - 100,000	12	20.0	30	50.0
101,000 - 200,000	32	53.3	20	33.3
201, 000 - 300,000	10	16.7	06	10.0
301, 000 - 400,000	06	10.0	04	6.7
Mean	**₦168,066**		**₦126,083**	
Household size (Persons)				
1 – 5	12	20.0	22	36.7
6 – 10	44	73.3	36	60.0
11 – 15	04	6.7	02	3.3
Mean	**7.0**		**6.0**	
Farm size (Hectares)				
1-3.0	38	63.3	48	80.0
3.1 – 5.0	16	26.7	10	16.7
5.1 – 7.0	06	10.0	02	3.3
Mean	**3.0**		**2.5**	
Farming Experience (Years)				
6 – 10	22	36.7	30	50.0
11 – 15	14	23.3	12	20.0
16 – 20	12	20.0	08	13.3
21 – 25	04	6.7	06	10.0
26 – 30	08	13.3	04	6.7
Mean	**14.6**		**12.0**	

Source: Field Survey, 2016

Table 2: Distribution of respondents based on credit sources available to them

	Male		Female	
Credit sources	**Freq.**	**Percent**	**Freq.**	**Percent**
Daily contribution	12	20.0	24	40.0
Money lender	12	20.0	18	30.0
Cooperative society	60	100.0	60	100.0
Microfinance bank	14	23.3	10	16.7
Commercial bank	04	6.7	02	3.3

Multiple Response Table (MRT) n≠60 for each gender

Differences in the amount of farm credit granted to male and female respondents

Table 3 indicates that 74.8% of both male and female respondents that requested between₦10,000 and ₦50,000 credit during the season of the study were granted. This is simply because the amount requested for was low and the incidence of default is most unlikely. As reflected in the Table, the higher the credit requested the lower the percentage of respondents that were granted. This trend is further exacerbated amongst female respondents probably because of their incapability to provide necessary collateral to secure such loans.

Table 3: Distribution of respondents based on differences in the amount of credit granted to them by gender

	Male (%)		Female (%)	
Credit (₦'000)	**Requested**	**Granted**	**Requested**	**Granted**
10 – 50	74.8	74.8	76.0	76.0
51 – 100	9.7	8.7	10.4	9.4
101 – 150	8.6	7.5	7.2	5.5
151-200	4.0	3.7	4.8	4.6
201 -250	2.9	2.1	1.6	1.2

Source: Field Survey, 2016. ***MRT**

Constraints to access to credit

Table 4 shows the constraints to access to credit among sampled male and female respondents in their order of severity. Male ranked lack of collateral (1.88) as the most severe constraint they faced in securing credit. This was followed by high interest rate (1.82) and late approval of loans (1.59) which were ranked 2nd and 3rd, respectively. As for female respondents, lack of collateral and high rate of interest were both ranked 1st (1.70), while late approval of loans ranked 3rd (1.36). Male farmers have higher tendencies to divert farm credit to other financial needs. Hence, credit institutions often demand for strong collaterals before they are granted loans. On the other hand, female farmers hardly have uncontrolled access to landed properties which are often requested for, as collateral by the credit institutions. Therefore, they have limited access to credit from formal financial institutions even though they have been found to utilise farm credit for purposes for which they were obtained oftentimes.

Table 4: Distribution of respondents based on constraints to credit access

Constraints	**Male**		**Female**	
	Mean	**Rank**	**Mean**	**Rank**
Lack of collateral	1.88	1st	1.70	1st
High interest rate	1.82	2nd	1.70	1st
Late approval of credit	1.59	3rd	1.36	3rd

Source: Field Survey, 2016. ***MRT**

CONCLUSION AND RECOMMENDATIONS

The study identified cooperative as the major source of credit available to both the male and female farmers in the study area. In addition, male farmers had better access to credit from microfinance and commercial bank sources while their female counterparts sourced credit more from daily contribution and money lenders. The major constraints to credit access among male and female farmers in the study area include lack of collateral and high interest rate. Thus, the study recommends that:

i. Farm inputs should be subsidized always, to reduce the cost of production and minimize the need for credit among farmers.
ii. More vibrant and educated youths should be encouraged and motivated to engage in farming activities in the study area.

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ASSESSMENT OF SELECTED SOCIAL CAPITAL ATTRIBUTES AMONG AGE GRADE GROUPS IN ABIA STATE, NIGERIA

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ABSTRACT
The growth and development of most rural communities is also dependent on the activities of indigenous social groups. The efficiency of these groups is often hinged on their social capital status and their ability to interact and function collectively. The study therefore, assessed selected social capital attributes among age grades in Abia State, Nigeria with special considerations on their network and membership, trust, reciprocity, norms and values. Purposive and random sampling techniques were employed in the selection of 90 age grade members as respondents from 3 local government areas in the State that had functional age grades. Data were collected using questionnaire/interview schedule, analysed using percentages and mean and corroborated through Focus Group Discussions (FGD). Results revealed that 67.8% of the respondents indicated that membership of age grades was mostly compulsory for every adult male, 67.8% believed most members could assist them financially while 98.9% believed most members would assist in times of emergency. The result also showed that age grades had high frequency of interaction with other groups ($\bar{x}$=2.14), 94.4% of the respondents agreed there was high level of reciprocity in the group and 91.8% agreed they had high level of compliance with norms and values. The study concluded that the social capital attributes among age grades in the study area was high and this enabled them work collectively as teams to achieve theirs and communities' goals. It therefore recommends that community leaders and stakeholders should encourage the formation of age grades and boost social capital to assist in community development.
Keywords: Social capital, age grade, norms and value, reciprocity

INTRODUCTION

The need to work together to achieve set organisational goals and objectives cannot be overemphasised. Rural communities are continually teaming up to form social groups that can be used in enhancing the well-being of the people. Such social groups as the town union, welfare associations, clubs, neighbourhood associations, development and improvement unions, age grades among others are regularly formed and used for these purposes.

The age grade is a collection of people of about the same age with the difference ranging from between three to five years and sometimes between seven and ten years. The age grade system varies from one community to the other and is hardly uniform. In Igboland the age grade system goes by such names as *Otu-Ogbo, Ndi-Ebiri or Ndi-Uke* (Ujumadu, 2017). Several age grades are found in the communities and they go by different names such as *Enyimba, Agumba, Akajiaku, Otuobi, Asomba, Udoebiri, Ugochukwu, Obimba* to mention but a few. Age grades have served as very important tools in community development in capacities such as local security and community defenders, enforcers of law, cleaning and clearing village roads and squares, serving as farm hand /labour source to members. In recent times, age grades in some communities have been seen to provide rural infrastructure such as roads, schools, markets, bridges, pipe-borne water hospitals, public libraries and labouratories (Ijekpa, 2007;Ndukwe, 2015; Mben Age Grade, 2014).They also serve as network through which members have received some benefits such as jobs, privileged information and assistance due to their social capital base.

Social capital is a necessary resource for every team work. It is a network of relationship between people, the influence, ties and social relationship (connections) that enhance collective action in communities. Yekinni and Oguntade (2012) defined it as the benefit people derive from their relationship with others, while Adogame (2013) affirms that it is the advantage created by a person's location in a structure of relationship. By this, the outcome of social capital is dependent on location and degree of involvement. Putnam (2000) referred to social capital as those characteristics of social groups that enhance the smooth functioning of a society by encouraging coordinated actions. It encourages individual and group actions that arise from networks of relationship, reciprocity, trust and social norms. Social capital is a resource that is acquired through involvement in social activities (Nyqvist, Victor, Forsman and Cattan, 2016).The benefit of social capital is not for the individuals alone but also for the communities. It makes people watch out for the interest of their members and promotes good neighbourliness, as well as helps in the circulation of useful information among group members.

Social capital is multi-dimensional and come in different combinations. It shapes the interaction amongst the members of a group, organisation, community, society or simply network and can be studied through various

perspectives. Possible constructs but by no means all are: networks and membership, reciprocity, norms, social cohesion, collective action, trust and solidarity, goodwill, commitment, information and communication (Tajuddin, 2011; Nyqvist *et al*, 2016; Grootaert *et al*., 2004; Putnam, 2000).

Social capital has been reported to be of immense benefit to individuals, their social groups and the community at large (Nyqvist *et al*, 2016). It has helped in the smooth running of social groups, fostering collective action and enhancing team play. Social capital constructs addressed in this study include; network and membership, trust, reciprocity, norms and values Age grades as social groups which are saddled with enormous responsibilities of community development and welfare require social capital to achieve their goals. This study therefore, assessed selected social capital attributes of the age grades which help them function effectively and carry out collective actions as a team. The specific objectives were to:

i. examine the membership and network of interaction of age grades in the study area;
ii. ascertain the level of trust among age grade members;
iii. determine their level of reciprocity and
iv. ascertain their level of compliance with norms and values

METHODOLOGY

This study was conducted in Abia State, Nigeria. Abia state is one of the five states that make up the South-east geo-political zone in Nigeria. Multistage sampling procedure was employed in the selection of sample for the study. First, three local government areas (LGA) in the state namely Ohafia, Bende and Umuahia with functional age grades systems were purposively selected. Secondly, three communities were randomly selected from each LGA and in the third stage one age grade was randomly chosen from each community, to give nine age grades. Finally, ten members were also randomly sampled from each age grade which gave a sample size of ninety persons.

Data for the study were collected using questionnaire/ interview schedule and corroborated through focus group discussions (FGD). FGDs were conducted in each LGA. Each of the selected age grades nominated three members comprising of 2 men and 1 woman for the discussion. There were 9 discussants in each group and the researcher moderated the sessions.

Membership and network of interaction were subjected to frequency counts and percentages. Frequency of age grades' interactions with other groups was measured using mean counts obtained from a three point Likert-type rating scale of always (2), sometimes (1) and never (0). Mean scores equal to or above 1.05 were considered as high level of interaction while scores below 1.05 were low.

Level of trust among age grade members was measured by providing them with statements to which they answered strongly agree (SA=5), agree (A=4), undecided (UND=3), disagree (DA=2) and strongly disagree (SDA=1). Weighted mean scores were generated by multiplying the frequency of response with the assigned weight on the scale and used to categorize the responses. The mean score results were categorised thus: ≥ 4.0 = high level of reciprocity, 3.50 – 3.99 = moderate and 3.05 – 3.49 =low

To measure level of reciprocity, the respondents were asked to respond strongly agree (SA=5), agree (A=4), undecided (UND=3), disagree (DA=2) or strongly disagree (SDA=1) to the statements provided. The maximum obtainable mean score was 25 and the minimum 5. Benchmark mean was obtained by adding 5+4+3+2+1 to get 15 and dividing by 5 to get 3.0. The mean score results were categorised thus: ≥ 4.0 = high level of reciprocity, 3.50 – 3.99 = moderate and 3.05 – 3.49 =low

The level of compliance to norms and values was measured by asking the respondents to answer strongly agree (SA=5), agree (A=4), undecided (UND=3), disagree (DA=2) and strongly disagree (SDA=1) to statements provided to elicit response on level of compliance. Mean scores were generated by multiplying the frequency of response with the assigned weight on the scale and dividing by the sum by 5. The maximum obtainable mean score was 20 and the minimum 4. The mean score result was used to make decision and categorise the responses thus: ≥ 4.0 = high level of compliance to norms and value, 3.50 – 3.99 = moderate and 3.05 – 3.99 = low

RESULTS AND DISCUSSIONS

Membership and network of interaction of age grades in the study area

Table 1 shows distribution of age grades based on membership and network of interaction. This was examined under the following headings; mode of membership, size of membership, diversity of members' occupation, extent of connection and frequency of interaction with other groups.

Mode of membership - The result on Table 1 revealed that 67.8% of the respondents indicated that the mode of membership into age grades in Abia State Nigeria was mostly by birth while 21.1% were required to join the group. This finding corroborates Ndukwe (2015) that membership of age grades in many communities is could either be compulsory or voluntary depending on the goal of formation.

Membershipsize - On the average per age grade, there were 151 registered members. This

implies that social capital is relational and can only occur in groups. Coming together in large numbers, and pooling resources to carry out collective action such as provision of rural infrastructure and security, lightens the burden on individuals. According to Mba (n.d.) there is a relationship between population and self-help projects. Similarly, a quote from Goodrich in Higuera (2013), states that "There is strength in numbers, yes, but even more so in collective goodwill. For those endeavours are supported by mighty forces unseen."

Diversity of members' occupation - The result on Table 1 shows that 47.8% of the respondents, had farming as their primary occupation. This is typical of rural residence where people depend on farming as a major source of livelihood. The presence of people from other fields, show that the age grade does not discriminate based on type of occupation, but is a collection of people from all works of life who play divers roles to make the group function as a team. This is in agreement with the report of Jannah (2017) that among the members of different age grades can be found people with different roles that enable the groups function as teams.

Levels of education - Majority (93.3%) of the respondents in Abia State had one form of formal education or the other. The implication is that most of the respondents were literate, had good knowledge of things going on around, and may have the desire to be associated with positive change. In line with this Onuekwusi, Odoemelam and Ube (2014) stated that increased level of education increases people's involvement in social organisations.

Table 1: Distribution of respondents based on Membership and Network of interaction(n=90)

	Frequency	%
Mode of membership		
Born into group	61	67.8
Required to join	19	21.1
Voluntary choice	9	10.1
Others	1	1.1
Mean size of age grade	151	
Diversity of members' Occupation		
Farming	43	47.8
Trading	18	20.0
Civil Service	23	25.6
Artisan	6	6.7
Different levels of Education		
No formal Education	6	6.7
Primary	35	38.9
Secondary	32	35.6
Tertiary	17	22.8
Perceived difference in economic status of most group members		
Mixed	23	25.6
Higher than you	7	7.8
Lower than you	18	20.0
Equal with you	42	46.6
Age grade members who can give financial assistance		
No one	5	5.6
One or two	8	8.9
Three or four	16	17.8
Five or more	61	67.8
Age grade members can help in Emergency		
No	1	1.1
Yes	89	98.9

Source: Field survey, 2017

Perceived economic status of age grade members - The result on perceived economic status of most members of the age grade in Table 1 revealed that a good number (46.6%) of the age grade members perceived that all their members were of equal economic status. By this, most age grade members in Abia state view their mates as equals in everything not minding other social positions or posts of responsibilities occupied.

At one of the Focus Group Discussions, it was reported that each age grade tried to outdo what the other had done, and even initiate new ones in an atmosphere of healthy competition. This sense of equality drives a healthy competition

where people aspire to progress and achieve their goals just as their mates are doing so. This finding is in consonance with the report of Zaman (2019) that nothing motivates like competition because it drives you to push harder and also fuels you to consistently put in the work that will make you healthier and happier in the long term.

Age grade members who can give financial assistance and support in emergency - The result presented on Table 1 showed that majority (67.8%) of the respondents in the study area, indicated that five or more members of the age grade could assist them financially when necessary while 98.9% also believed that most of their mates would come to their aid in case of an emergency.

The implication of this is that the age grades like in most African settings, where safety nets are inadequate, provide reciprocal assistance to their members. They rally round and give assistance to the needy knowing that they may need the same assistance someday. In all the Focus Group Discussions and interviews conducted, the participants reported that:

> *"....no active member of the age grade, who participates in the activities of the group, is left alone in times of need or emergency. We quickly mobilize to give assistance financially and otherwise whenever there is need."*

The finding is in line with Amzat and Razum (2014) who reported that many families rely on network of reciprocal assistance provided by members of a large group with people supporting each other.

Age grade's interaction with other groups - This was measured on a three point scale of always (2), sometimes (1) and never (0) and the result on Table 1b revealed that age grades across the study area, had high frequency of interaction with other groups ($\bar{x}$=1.14) but they interacted more with groups within their communities ($\bar{x}$=1.33) than with groups outside their communities ($\bar{x}$=0.94).

Table 1b: Distribution of respondents based on frequency of their group's interaction with other groups

Group interaction	Never (0)	Sometimes (1)	Always (2)	($\bar{x}$)
With groups within community	0	66.7	33.3	1.33
With groups outside the community	25.6	54.4	20.0	0.94
Grand mean				1.14

Decision: ≥ 1.05 = High, <1.05 = low
Source: Field survey, 2017

This result implies that age grades in the study area were homogenous and had more of bonding network than bridging or linking network. This is likely to make assessing information and resources from outside the community more difficult.

Bridging and linking networks often provide that which is missing locally and fosters collabouration. Claridge (2018) reported that bridging or linking network gives people access to the outside world and to heterogeneous people they are not close or related to. Bonding network on the other hand provide strong ties of relationship to people that are related or already know themselves thereby limiting the benefits available to them from outside. Baiyeguinhi (2013) further stated that other advantages often associated with homogenous groups are that of greater trust, information sharing and ability to reach decision easily.

Level of trust

The result on level of trust presented in Table 2.0 revealed that majority (86.6%) of the age grade members agreed that they trusted each other and would confide in each other without fear of betrayal ($\bar{x}$=4.43). Most (73.3%) of the respondents disagreed with the statement that they did not trust each other in matters of borrowing and lending ($\bar{x}$=2.20), while 40% agreed that there was need for one to be alert so that people do not take advantage of them

Table 2.0: Distribution of respondents based on level of trust (n = 90)

Trust	**SA (5)**	**A (4)**	**UND (3)**	**D (2)**	**SDA (1)**	$\bar{x}$
Members confide in each other with no fear of betrayal	72.2	14.4	2.2	6.7	4.4	4.43
Members have to be alert or someone would take advantage of them	14.4	25.6	17.8	34.4	7.8	3.04
Members generally do not trust each other in matters of lending and borrowing	10.0	6.7	10.0	40.0	33.3	2.20

SA= Strongly Agreed, A = Agreed, UND = Undecided, DA = Disagree, SDA = Strongly Disagree
Source: Field survey, 2017

This implies that trust among the age grade members, it is not absolute. However, on a general note the groups are able to function, and achieve results, because members trust each other and the system they are in. They are willing and able to help their members financially and otherwise. Delong (2013) described these attributes of social capital as the grease that oil relationships and give mutual benefit. Gleenson (2015) stated that trust is a prerequisite for success in relationships and team work and the level of trust is directly proportional to productivity, performance and profitability.

Age grades' Level ofReciprocity - Presented on Table 3.0 is result on level of reciprocity. The result showed that 95.5% of the respondents agreed that there is mutual support/ dependency among age grade members, 97.7% agreed that the members are willing to help mates who are in need because they know same will be done for them if the need arises while 92.2% are of the opinion that what is good for the community is good for them. Majority (98.9%) are in support of community based projects and other local economic efforts that benefit the community while 96.7% cooperate to support the local economy. With a grand mean score of ($\bar{x}$=4.72), majority (94.4%) of the respondents agreed the level of reciprocity was high.

Table 3.0: Distribution of respondents based on level of reciprocity (n = 90)

Reciprocity	SA	A	UND	DA	SDA	$\bar{x}$
There is mutual support/ dependency among members of my age grade	83.3	12.2	1.1	3.3	0	4.76
I am always willing to help members of my age grade who are in need because I know they will do same for me if the need arises	81.1	16.6	1.1	1.1	0	4.78
Members of my age grade believe that what is good for the community is good for them	77.8	14.4	5.6	1.1	1.1	4.67
Members of my age grade support community based projects and other local economic efforts that benefit the community	73.3	25.6	0	1.1	0	4.71
Members of my age grade cooperate to support the local economy	75.6	21.1	1.1	0	2.2	4.68
Grand mean						**4.72**

SA= Strongly Agreed, A = Agreed, UND = Undecided, DA = Disagree, SDA = Strongly Disagree
Field survey, 2017

This implies that the members of the age grades come to each other's aid and that of the community, expecting that in their time of need, other members and the community will be available and willing to help out based on their performance. For instance, in those communities where age grade membership is compulsory, members of the deceased's family are made to pay all the outstanding debts before the dead can be buried. During the Focus Group Discussion in Ohafia and Bende LGAs, discussants revealed that

> *"...participation in age grade activities is a-give-and-take situation. Any person who does not participate in age grades' activities is sanctioned and denied some rights in the community. However, those who participate in the groups' activities and contribute to community development are celebrated and honoured at their traditional retirement (when the age grades handover their major infrastructural projects to the community) by family, friends and the community...."*

Asomba (2009) succinctly captured it by stating that the age grades bore full responsibility for the burial of members and support members at burials of their parents or children. They are also the major guests at wedding ceremonies of male members and traditional marriages of members' daughters. The climax of their activity is the celebration by the community at retirement.

Compliance to norms and values - For every relationship and group activities, there are dos and don'ts that guide behaviour. Results in Table 4.0 revealed that 96.6% of the age grade members agreed that they valued the relationship with their mates, 93.3% believed in each other and the oneness of the group, also 98.9% agreed that erring members of the group were sanctioned appropriately and 91.2% were of the opinion that all members were treated equally without preference. With a grand mean score of ($\bar{x}$ = 4.59), majority (91.8%) of the respondents had high level of compliance with their norms and values of the group

Table 4.0: Distribution of respondents based on compliance with norms and values (n=90)

Norms and values	SA	A	UND	DA	SDA	$\bar{x}$
Members of my age grade value our relationship	83.3	13.3	2.2	1.1	0	4.79
Offending members of my age grade are sanctioned appropriately without bias	58.9	34.4	2.2	4.4	0	4.48
Whatever the age grade does to one person, it does to others	67.8	31.1	1.1	0	0	4.67
Members of my age grade believe in each other and the oneness of the group	55.6	35.6	5.6	3.3	0	4.43
Grand mean						**4.59**

SA= Strongly Agreed, A = Agreed, UND = Undecided, DA = Disagree, SDA = Strongly Disagree
Source: Field survey, 2017

By implication, age grades are properly constituted groups with constitutions and bye-laws stating the acceptable behaviours and corresponding punishment for defaulters which made members value their relationship, knowing that offenders would not go unpunished. Corroborating this, Idigo (2014) stated that each age grade had defined obligation in community service, was jealous of its good name and so disciplined its erring members. Ekong (2010) stated that socialization and control made people behave in a manner that was predictable and conformed to established norms and values.

CONCLUSION AND RECOMMENDATIONS

Age grades in Abia state have very high levels of network of interaction, trust, reciprocity and compliance to norms and values. Their social capital attributes are therefore rated high and as a result they are able to pull resources together and achieve great results collectively. They trust their mates and are willing to help them when necessary. They also bear each other's burdens and give assistance in times of need, making the members have a high sense of belonging. The resources contributed are used to assist members and the community, and the outcomes of their collective actions are beneficial to both the individuals and the communities. It is therefore recommended that community leaders and stakeholders should encourage mates and peer groups from very young ages to have healthy affiliations by organising games and competitions that can help them develop bonds and boost social capital to assist in community development. Town unions, community heads and age grade leaders should open up and reach out to other groups outside their community to increase linkage and bonding networks and benefit from the good in other lands.

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DETERMINANTS OF MATERNAL HEALTH CARE SERVICES UTILISATION AMONG RURAL WOMEN IN ABIA STATE

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ABSTRACT
Poor maternal health service delivery in Nigeria has resulted in many maternal deaths during pregnancy, childbirth or within a few weeks of delivery. This is partly due to unavailability and low utilisation of maternal health services in the country. The aim of this study was to investigate the use of maternal health care services in rural communities of Abia State. Two stage sampling technique was used to select180 women between 18 – 49 years of age who had attended maternal health care services at the selected hospitals two months to the time of the research. A structured questionnaire, Focus Group Discussion (FGD) and participants' observation were used to collect information from the respondents. The data collected was analysed using descriptive (percentages and mean) and inferential (probit regression model) statistics. The result revealed that level of maternal health care utilisation was low with a grand mean score of ($\bar{x}$ = 1.63) and regression result showed that age (z=2.795 <0.01), household size (z=2.505 <0.05), education (z=3.282 <0.01), employment status (z=0.644 <0.05), distance to facility (z=2.705 <0.05) were positive and significantly related to utilisation of maternal health care services at various levels of significance. In conclusion, the study found that utilisation of maternal health care services is affected by socioeconomic characteristics of the rural women in the study area. It is therefore recommended that interventions geared towards socioeconomic characteristics of the women to enhance utilisation of maternal health care services should be encouraged.
Keywords: Utilisation, rural women and maternal health care services.

INTRODUCTION

Maternal health is defined as a state of total physical, mental and social well-being and not just non-existence of illness or infirmity in all issues that has to do with the reproductive age of women (WHO, 2013). Maternal health care services also include an extensive scope of health services mothers are given before pregnancy, during pregnancy, delivery and after delivery. Maternal health care services therefore comprise pre-natal care, child birth and post-natal care. However, in Nigeria and other parts of African societies, certain cultural practices continue to affect maternal well-being and consequently the children.

Furthermore, with peculiarity to the African societies, maternal health would include the ability to exercise reproductive rights of family planning and access to basic focused antenatal care without the encumbrance of patriarchy, financial or geographical inhibitions impacting on her overall health (Okeke, Oluwuo and Azil, 2016).

Antenatal health care is defined by the World Health Organisation as the 'care' pregnant women receive before birth and involves among other services education, screening, counselling, treatment of minor ailment, and immunisation. Antenatal care coverage is defined by Arthur (2012) as the percentage of women who use antenatal care services provided by skilled health personnel for reasons related to pregnancy, as a percentage of live-birth in a given period usually one year. The basic objective of antenatal care in Nigeria is to promote and maintain the health status of the pregnant mother. Its main purpose is only detection and management of pregnancy-related complications.

A woman's reproductive period is a very crucial period and spans several stages (Okeke *et al,* 2016). In 2015, Nigeria's estimated maternal mortality ratio was over 800 maternal deaths per 100000 live births, with approximately 58000 maternal deaths during the year (Nigerian Near-Miss and Maternal Death Survey, 2019). Nigeria is a leading contributor to the maternal death figure in Sub-Saharan Africa not only because of the hugeness of high population but also because of her high mortality rate (Aschenati, Olivia and Maryse, 2018). In Nigeria only 38.1% of women received skilled attendance at delivery, and immunisation coverage range between 43% and 16% in urban and rural areas while 25% of children are fully immunised at the age of 23 months in a country where the service has been almost free since inception. Ignorance about the factors that determine the health care choices women make for themselves and their children will lead to continuation of waste of already limited resources and increase in mortality figures (Agunwa, Obi and Aniwala, 2017). As pointed by Nwokocha (2012) different stages of the woman's reproductive lifecycle must be given due attention for a smooth pregnancy process. There are reports of inadequate utilisation of health facilities in South East rural communities of Nigeria, despite the availability of maternal and child health services. This is evidenced by the findings from the antenatal register of one of the communities (Obiagu health centre, 2015), which showed that 1,452 women registered in the health care. It was equally observed that many of them registered late for antenatal care and do not attend the postnatal clinic (Okpala, Okoye, Adeyemo, Iheanacho, Emesonwu, Osuala and Okpala, 2019).

Many factors play key role in the inadequate use of maternal health care services such as lack of information, cultural factors and educational attainment of the women especially among those residing in rural areas (Ngomane and Mulaudzi, 2010). Distance (or travelling time) to health facilities is one of the major barriers to health care use. Accessibility of maternal health care facilities and general health facilities is important in ensuring that lives are saved through the provision of essential maternal services. Access to health care services directly translates to use of these services – meaning that, if people cannot access life-saving health care services, then use of such services will be limited. Accessibility to reproductive health service is considered an essential empowerment in the fulfilment of an individual's right to health in all its form and levels. Some researchers tend to equate access with characteristics of the population (family income, insurance coverage and attitude) towards medical care, or of the delivery system others argue that access can best be evaluated through outcome indicators of individual passage through the system, such as utilisation rates or satisfaction score.

This low utilisation of maternal health care services as reported by Okpala *et. al;* (2019), informed the objectives of this study, to investigate determinants of maternal health care services utilisation among rural women in Abia State, with the following specific objectives: to describe the socioeconomic characteristics of the women; to ascertain the level of utilisation of maternal health care services by the women and to ascertain the determinants of the maternal health service utilisation in the study area.

METHODOLOGY

The study area was Abia State, which is made up of three Senatorial Zones and 17 Local Government Areas. Two-stage sampling procedure was adopted to select respondents for the study. At the first stage, purposive sampling technique was used to select one public maternal health care facility from each of the senatorial zones in Abia state (Abia North (Ohafia General Hospial), Abia Central (Amachara General Hospital) and Abia South (Aba General Hospital) were selected. The second stage involved the selection from the eligble participants for this study who are women of child bearing age 18 – 49 years of age who had attended maternal health care services (including ante-natal care, delivery care and post-natal care services) at the selected hospitals two months to the time of the research. A mother was taken to have used a service if she had accessed the service at the health facility at least once (WHO, 2014). The time frame was set to reduce recall bias as much as possible.

Measurement of variables

Using information from these hospitals, simple random sampling was used to select 180 participants, sixty from each hospital who met the criteria. Three doctors and 3 nurses were interviewed in each location to authenticate some of the information given by the respondents. The participants were asked a range of questions, in a structured questionnaire and Focus Group Discussion regarding their utilisation of maternal health care services. Data generated were analysed using descriptive and inferential statistics. Objective 1 was analysed using simple descriptive statistics such as frequency distribution and percentages, Objective 2 which is the level of utilisation of maternal health care services was analysed using mean scores. Their responses were rated on a 3-point Likert type scale of High utilisation = 3, moderate utilisation = 2 and low utilisation = 1. The total scores of each respondent were calculated as utilisation scores. These scores were added to obtain a value of 6 which was divided by 3 to get a benchmark of 2.0. Any utilisation with mean score > 2.0 was regarded as high utilisation, while any utilisation with mean score ≤ 2.0 was regarded as low utilisation.

To ascertain the level of maternal health care services utilisation of the respondents the following questions were asked:

1. Where did you go for ante-natal?
2. What is the frequency of your ante-natal visit? a) every week b) twice in a month c) once in two-month d) once in three months e) others
3. How many times did you attend antenatal services before delivery?
4. What services did you receive during ante-natal? a) counselling b) physical examination c) labouratory test d) drug administration
5. Where did you deliver the baby?
6. Did you receive any form of assistance during delivery?
7. How many doses of anti-tetanus toxoid did you receive before and after delivery?
8. How many times did you go to the hospital after delivery?

What services did you receive? a) immunisation for mother and child b) physical examination c) Nutrition advices d) Family planning counselling

Any positive response attracts 1 mark, otherwise 0.

Objectives 3 which is to ascertain the determinants of maternal health care utilisation was analysed using probit regression model. The analytical framework is stated below;

Analytical framework

The participants who have attended maternal health care services in the selected hospitals may be either seen as having utilised

maternal health care or not, depending on the number of visits resulting in a binary dependent variable (y_i.). The binary dependent variable (y_i) takes on the value of zero (0) if the number of visits to health facility in accessing maternal health care service is < than 4 times and (1) if the number of visits ≥ 4 times as outlined by Kearns, Hurst, Caglia and Langer (2014). The probability of observing a value of one is

$\Pr = y_i = \frac{1}{X_1\beta_1} = \quad 1 - F(X_1\beta_1)$ ..... (1)

Where F is a cumulative distribution. It is a continuous strictly increasing function that takes a real value and returns a value which ranges from 0 + 1 consequently, the probability of observing the zeros is

$\Pr = y_i = \frac{0}{X_1\beta_1} = 1 - F(X_1\beta_1)$ ..... (2)

Given the above specification, the maximum likelihood estimation approach can be used to estimate the model. The dependent variable y_i is an unobserved latent variable that is linearly related to by the equation

$y_i = X_1\beta_1 + u_i$ ---------- (3)

Where μ is a random distribution term and X1 is independent variables which influence the number of maternal health care service visits. The observed dependent variable is determined by whether $y_i$exceeds three or otherwise:

$y_i =$ 1 if $y_i > 0$

0 if $y_i \leq 0$ = 4

Where y_i^* is the threshold value of yi. This study adopted the probit model to analyse the data and the empirical form is specified as:

$y_i = \alpha_0 + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \alpha_6X_6 + \alpha_7X_7 + \alpha_8X_8 + \alpha_9X_9 + \varepsilon$

Where;

Y = Utilisation (proxied by 4 or more visits to health care services = 1; less than 4 visits = 0) and $X_1 – X_9$ (Independent variables)

X_1 = Age (measured in years)

X_2 = Household size (number of people living together in a household)

X_3 = Educational level (number of years of formal schooling)

X_4 = Employment status (dummy variable) Employed 1; Otherwise 0)

X_5 = Waiting time (minutes) in accessing the services; (<20 minutes = 1, > 20 minute = 0)

X_6 = Proximity (km) (dichotomous categories: > 20km = 1; < 20km = 0)

X_7 = Cost of utilising services (measured in Naira; affordable = 1, otherwise = 0)

X_8 = Knowledge of health care services Good (3), moderate (2) and low (1)

X_9 = Cultural factors (Refers to the choice of a woman to utilise maternal health care services or not, a 2-point Likert type scale was used to define the choice of whether to use maternal health services or not (used 2; otherwise 1). The mean scores were used for the analysis).

e = error term

a. Utilisation of maternal care health services were measured and rated on a 3-point Likert rating scale of namely; high = 3, moderate = 2 and low = 1. The bench was obtained thus; 3+2+1 = 6 divided by 3 to give 2.0

The following decision rule was obtained

1.0 – 1.50 - low
1.51 – 1.99 - moderate
2.0 and above - high

b. Antenatal care services were measured and rated based on four or more visits by respondents during pregnancy. If the four visits were accomplished by the patient, the score is 1 and otherwise 0.
c. Skilled birth attendant was captured based on the attention given to the patient if she visits (attended 1; otherwise 0).
d. Postnatal care for the mother and baby received from a trained Health Care Worker (HCW) within three days or more during previous pregnancy (received care 1; otherwise 0).
e. Knowledge of health care services were measured and rated on a 3-point Likert rating scale of namely; good = 3, moderate = 2 and low = 1. The bench mark was obtained thus; 3+2+1 = divided by 3 to give 2.0
f. Cultural factors, which is the choice of a woman to utilise maternal health services or not were measured and rated on a 2-point Likert type scale of used = 2; unused = 1. The mean score was used for the analysis.

RESULTS AND DISCUSSION

Distribution of respondents based on socioeconomic characteristics

Results in Table 1 indicate the socioeconomic characteristics of the respondents. From the results, the largest proportion (37.8%) of the respondents was between the ages of 25 – 30 years of age. It is the age bracket where most women of reproductive age fall under.

Non-use of health service during delivery among middle-aged (25 – 34) is higher compared to women in older age category (35^+). Although it may be opined that the later comprises those whose pregnancy is considered risky as a result of their age bracket, which consequently prompts them to seek facility delivery, the former also consists of women who are at the prime of their child bearing period (Okesola and Sadia, 2013). The table further revealed the variations in educational level of the various respondents. About (34%) of the respondents had no formal education while the

remaining percent had one form of educational attainment or the other. Women's educational status retains a visible effect on maternal health services, independent of other demographic characteristics (Yaya, Bishwajit, Ekholuenetale, Shah and Udenigwe, 2018). Results on Table 1, further revealed the marital status of the respondents. About 72.2% were married, 6.7% were single, 8.9% were divorced while 7.2% were widowed. Being married or not also have some effects on utilisation of maternal care services. According to some of the respondents, husbands and mothers-in-law often hold the decision to utilise facility-based care or not. The results on household size in the table indicated that majority of the women (47%) had a household size of between 12 and 14 in number. The implication of this result is a large mouth to feed and less money to take care of oneself during pregnancy. Women with smaller family sizes and with higher previous pregnancy experiences are more likely to seek health care from qualified medical personnel.

Table 1: Distribution of Respondents based on Socioeconomic Characteristics

Variables	Frequency	Percentage
Age		
Under 20	29	16.1
25 – 30	68	37.8
35 – 40	49	27.2
45^{+}	25	13.9
Educational level		
Non-formal	61	33.8
Primary	53	29.4
Secondary	47	26.1
Tertiary	19	10.6
Marital status		
Married	139	77.2
Single	12	6.7
Divorced	16	8.9
Widowed	13	7.2
Household size		
2 – 4	25	13.9
6 – 8	71	39.4
10 – 12	84	46.7
Total	180	100

Source: Field survey, 2019.

Distribution of respondents based on utilisation of maternal health care services

Results on Table 2, showed the level of utilisation of maternal health care services which include antenatal care (ANC), skilled birth attendance and post-natal care services (PNC).. From the result, ante-natal care services received by the respondents, had a mean score of ($\bar{x} = 1.5$) which is less than 2.0 which is the benchmark for decision making. The ANC is known to help augument health care during pregnace through provision of preventive health care services. Silled birth attendance ($\bar{x} = 1.8$) is also less than 2.0. the assistance by skilled birth attendant at delivery, is also an important aspect of maternal care. Skilled birth encompasses the presence of health professionals during delivery. According to Bililign and Mulati (2017), the presence of skilled birth attendants in the community may help to reduce maternal mortality. Postnatal services (postpartum period) which is 42 days after delivery had a mean score of ($\bar{x}$ = 1.6). It is reported that less than 30% of women in developing countries receive postnatal services. The grand mean score was ($\bar{x}$ = 1.63) which is below 2.0 indicating low utilisation of maternal health care services among the participants.

Table 2: Distribution of Respondents based on Utilisation Maternal Health Care Services

Statement	HU	MU	LU	Total	Mean ($\bar{x}$)
Antenatal care services (visits)	28(84)	34(68)	118(118)	270	1.5
Skilled birth attendance	44(132)	57(114)	79(79)	325	1.8
Postnatal care services	26(78)	55(110)	99(99)	287	1.6
Grand mean					1.63

Source: Field survey, 2019.

HU= high utilisation; MU = moderate utilisation; LU = low utilisation

Probit regression estimates of determinants of maternal health care services utilisation in the study area

Result in Table 3; shows that the age of the respondents ($z=2.795p< 0.05$) was positive and significantly related to maternal health care services utilisation. The age of the pregnant mother affects her quest for the use of maternal health care services. This result is in line with the study carried out by Klemetti, Gissler, Sainio and Heminti (2013) which confirms that older women were more likely to use maternal care services than their younger counterparts. The reason may be due to the fact that they have gathered immense experience and knowledge on maternal health care services. But, Owilli, Muga, Chou, Hsu, Huang and Chien (2016) found a reduction in the proportion of women obtaining maternal health care services with increasing age in Kenya.

Household size ($z=2.505p < 0.05$) was positive and significantly related to utilisation of maternal health care (Y). Household size is another predisposing factor believed to influence the utilisation of antenatal care. Household size is measured as the number of persons in a particular household that are dependent on the pregnant mother for their daily sustenance (Falwole and Adeoye, 2015). It is widely acknowledged that women with large family sizes tend to under-utilise maternal health care services due to the excessive demand on their money, time and other resources (Abor, Abekah-Nkrumah, Sakyi, Adjash and Abor, 2011).

Education ($z=3.282p < 0.01$) was positive and significantly related to utilisation of maternal health care (Y). This result collabourates with the findings of Greenaway, Juan and David (2012) which stated that the association between maternal education and use of health services in Ghana demonstrates a strong link between mother's formal education and a composite measure of women's health knowledge in accessing and utilising health care services.

Employment status ($z=0.644$ $p<0.05$) of the women was positive and significantly related to utilisation of maternal health care (Y). In their study on the socioeconomic determinants of maternal health care utilisation in seven countries, Sad-Haddad, Dejong and Terrere (2016) revealed that household wealth significantly influenced the facility type for accessing maternal care. So, if the women were not formally employed, the decision and choice of healthcare use depends on who is sponsoring the bills.

Proximity (km) ($z=2.705p<0.05$) was positive and significantly related to utilisation of maternal health care (Y). Okeke *et al;* (2016) in their studies noted that health care centres are often located further away from larger number of residents. In order to receive adequate health care services, rural women need to travel long distance before accessing services, which is enough to discourage them.

Cost of utilising services ($z=-3.983$ $p<0.01$) was negative but significantly related to utilisation of maternal health care (Y). This against *aprior* expectations according to (Nuamah, Agyei-Baffour, Akohene, Boateng, Dobin and Addai-Donkor, (2016), there was positive relationship between income and utilisation of health care services. It has been argued that women from poor families or with limited financial resources may have difficulties paying the cost of health care (Numah, *et, al;*(2016). Women from household with higher economic status have the power to afford health care services while those with low economic status shy away from such services.

Waiting time (hours) ($z=5.853$ $p<0.01$) was positive and significantly related to utilisation of maternal health care (Y). According to some of the women, it takes them a very long time to wait in queues before being assisted by health care personnel who are often disrespectful and show a non-caring attitude.

Cultural factors ($z=5.027$ $p<0.01$) was positive and significantly related to utilisation maternal health care (Y) at 5% level of probability. Culture is an important concept that influences the way people live as well as their belief system. For instance, there are some women that believe in utilising traditional birth attendants rather than seeking professionals due to their cultural beliefs, those women opt for home delivery assisted by traditional birth attendants rather than going to health centres in their community.

Knowledge on health care services ($z=5.043$ $p<0.01$) was positive and significantly related to utilisation of maternal health care (Y). The implication of the result is that when women have full knowledge about maternal health services and considered it useful, they could easily access the services and put into use but if they don't have full knowledge about the services they feel reluctant to utilise the services. Pregnant women's knowledge about the need for maternal health care visits increases health care service, resulting in improved birth outcomes (Aiga, Hguyen, Hguyen, Hguyen, Hguyen, 2015).

Table 3: Probit Regression Estimates of Determinant of Access and Utilisation of Maternal Health Care Services in the Study Area.

Parameters	Estimate	Standard error	Z-value
Age	-0.012	0.007	2.795**
Household size	0.000	0.000	2.505**
Education	0.005	0.16	3.282***
Employment status	0.0644	0.0255	0.644**
Proximity	0.040	0.023	2.705**
Cost of utilising services	-0.017	0.008	-3.983***
Waiting time	0.000	0.000	5.853***
Cultural factors`	0.000	0.000	5.027***
Knowledge of health care services	405.617***	-	5.043***
Intercept	2.546	0.363	7.012***
Pearson Goodness of fit	343.271		

Probit model: Probit (P) = Intercept + BX
Sources: Field survey, 2018
*** = significant at 1%
** = significant at 5%
* = significant at 10%

CONCLUSION

The study examined the utilisation of maternal healthcare services in Abia state, Nigeria. Major findings of the study revealed that most of the women were married, with majority having a house hold size of 10 – 12 people. The result further revealed that some of the respondents (33.8%) had no formal education while the rest had one form of education or the other. On level of utilisation of specific maternal health care services such antenatal care had a mean score of ($\bar{x}$ = 1.5), skilled birth attendance ($\bar{x}$ = 1.8) and postnatal services ($\bar{x}$ = 1.6) were low. On determinants of maternal health care services the result revealed that age (z=2.795 p<0.05), education (z=3.282 p<0.01), employment status (z=0.644 p<0.05), household size (z=2.505 p<0.05), proximity (z=2.705 p<0.05), time spent in waiting to be attended to (hours) (z=5.853 p<0.01), Cost of utilising services (z= -3.983 p<0.01), cultural factors (z=5.027 p<0.01) and knowledge of health services (z=5.043 p<0.01) affects utilisation of maternal health services.

RECOMMENDATION

Based on the findings of this study, the paper recommends the need to increase the knowledge of the women on the need to utilise maternal health care services. There is need for Abia State Ministry of Health to engage the media in promoting maternal healthcare services as well as relevant educational programmes that will raise the awareness of vital health care services among the rural women. Such efforts with result in change in behavior towards increasing their patronage of the health care facilities. Furthermore, the State Ministry of Health should strategise ways of bringing maternal health care services closer to the mothers as well as making them very affordable to the rural women.

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