



CHILDREN AND YOUTH IN SUSTAINABLE AGRO-VALUE CHAIN: CREATING A PROSPEROUS AND PEACEFUL SOCIETY

Proceedings of the

14th

**INTERNATIONAL RESEARCH AND DEVELOPMENT
CONFERENCE AND NETWORKING MEETING OF CHILDREN
AND YOUTH IN AGRICULTURE PROGRAMME
(CYIAP Network)**

Held at
Tai-Solarin University of Education,
Ijegun-Ijebu Ode, Ogun State.

between July 8th - 11th 2018

EDITORS

Banji O. Adisa, Ph.D
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PROCEEDINGS OF THE 14th INTERNATIONAL RESEARCH
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YOUTH IN AGRICULTURE PROGRAMME IN NIGERIA**

(CYIAP – Network)

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Editor

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YOUTH IN AGRICULTURE PROGRAMME IN NIGERIA (CYIAP)
HELD AT TETFUND HALL TAI SOLARIN UNIVERSITY OF
EDUCATION, IJAGUN, IJEBU – ODE, OGUN STATE, NIGERIA**

JULY 9TH – 11TH 2018

(CYIAP – Network Publishing)

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From Editor-in-Chief Office

Eulogy of CYIAP Pioneer President: Professor S. Fola Adedoyin (Aged 60 years)
The Network cannot forget urgently the commitment and contribution of the Pioneer President of the Network, Prof. S. F. Adedoyin who did not find it difficult to bring members together regularly at his own expense. He chartered the course for the network even when there seems to be none. A renowned Professor of Extension and Rural Sociology indeed. He was the Vice Chancellor of Samuel Adegnoyega University Ugwa until his demise. Adieu, Prof. S. F. Adedoyin



Dr. B. O. Adisa
Editor-in-Chief

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A PRESIDENTIAL ADDRESS DELIVERED BY PROFESSOR ADEKUNLE OLUWASEGUN AT THE 14TH INTERNATIONAL RESEARCH CONFERENCE OF CHILDREN AND YOUTH IN AGRICULTURE PROGRAMME HELD IN TAI SOLARIN UNIVERSITY OF EDUCATION, IJAGUN, IJEBU – ODE, OGUN STATE, NIGERIA. JULY 9TH – 11TH 2018

INTRODUCTION

It is with great pleasure I am here to deliver this presidential address and be part of this conference's opening ceremony. And I want to thank the Local Organizers (LOC), the National Research and Development Network of Children and Youth in Agriculture Programme (CYIAP-NETWORK), for the 14th edition of this National Conference. The idea underlying CYIAP-NETWORK is something very close to my heart. This fact is even further strengthened by the theme of this conference, 'Children and Youth in Sustainable Agro-Value Chain: Creating a Prosperous and Peaceful Society'. The importance of agriculture and farming to food security and peaceful co-existence in any society is imperative. Indeed, the notion of national security cannot be completely meaningful without food security. In effect, for a nation to be truly secure, its citizens must be free from worry in terms of their access to food. In other words, agriculture is the most reliable basis for food security, while national security cannot be assured without security from hunger. But what have all these got to do with children and youth's in a sense, agriculture can be regarded as some sort of culture; and it is a culture that is becoming endangered in our climate. A culture survives by being transmitted to the younger and upcoming generations. The situation is not so different with agriculture. The knowledge, skills and technology of farming are carefully passed on to the younger ones who will carry on with the crucial business of food production. However, despite its centrality, our younger ones have been losing interest in the farming business, making it the exclusive preserve of the aged and dying generations. But it is imperative, that we must revive the interest of youth in agriculture so that our society can avoid a future food crisis. Hence, it is necessary to embark on a concerted effort to regenerate the culture of farming, but in a manner that is modernized and suitable to contemporary times.

International Research and Development Network of Children and Youths in Agriculture Programme (CYIAP-Network) profited from the wisdom of the great Greek philosopher, Plato, who likened children hearts to clean slate on which nothing has been written. Whatsoever the child wants to be or do in the later years can easily be written on it through a deliberate programme of sensitization, orientation, education, socialization and participatory involvement in leadership and governance. It is in the light of the forgoing that CYIAP-Network operates with a mission to propagate a deliberate but skilful sensitization, orientation, education and socialization programmes aimed at giving capacity, authority and power to children and youth so that they can have a good future. Specifically, it is to make it possible for them to become active agents of change towards quality of life enhancement, food security, hunger and poverty reduction, civic responsibility, job making rather than job seeking and promotion of entrepreneurial and managerial abilities. CYIAP-Network is working with farm children, farm youth and other stakeholders in child development and agricultural transformation to provide enabling environment for sustainable development of farm and agro-industrial structures.

THE CYIAP-NETWORK: HISTORICAL NOTE AND PAST CONFERENCES

CYIAP-Network came into existence on 2nd March 1995 as an output of the Rural Farm Family Resource Research and Development efforts of Dr. S. FolaAdedoyin (now Professor of blessed memory) and Mr. Dixon Olu Torimiro (now Professor), in the Department of Agricultural Extension and Rural Sociology, Ogun State University (now Olabisi Onabanjo University), Ago-Iwoye, Nigeria. These scholars identified a missing link in the process of ensuring continuity and sustenance of farming as a worthy profession, and they conceptualized as well as initiate this missing link as the Children and Youths in Agriculture Programme (CYIAP). This ideal was shared nationally among relevant stakeholders all over Nigeria and the positive reaction obtained culminated into the establishment of the National Research and Development Network of Children and Youth in Agriculture Programme (CYIAP-Network) on 24th March 1998. The



network held her past annual conferences in Ogun State University, Ago-Iwoye (1998), Obafemi Awolowo University, Ile-Ife (1999), Enugu State University of Science and Technology, Enugu (2000), University of Agriculture, Makurdi (2001), Nigerian Institute of Social and Economic Research (NISER), Ibadan (2002), Adeniran Ogunsanya College of Education, Ijanikin, Lagos State (2003), Tai Solarin University of Education, Ijagun, Ijebu-Ode, Ogun State (2005), University of Ilorin, Kwara State (2006), Federal College of Education (Special), Oyo (2007), Obafemi Awolowo University, Ile-Ife (2013), Olabisi Onabanjo University, Aiyetoro Campus, (2014), Federal University of Technology, Akure (2015) and University of Ilorin, Ilorin, Kwara State (2016). We are currently witnessing the 14th Annual Conference and Network Meeting holding here at Tai Solarin University of Education, Ijagun, Ijebu – Ode, Ogun State, Nigeria. CYIAP currently publishes two journals, one based in South Africa and one based in Nigeria, to provide outlets for reputable research outputs in the areas of children and youth development, agricultural development, rural development and other pertinent areas for continuity and sustainability of the agriculture.

CHILDREN AND YOUTH IN SUSTAINABLE AGRO-VALUE CHAIN-CREATING A PROSPEROUS AND PEACEFUL SOCIETY

This is the theme for this year's conference, which has been carefully worded to reflect the current mood of the government towards revitalizing the agricultural sector and promote peaceful co-existence among the farm families in Nigeria.

I have the pleasure in highlighting some very important areas that might be considered in your deliberation towards enhancing involvement of Children and Youth in Sustainable Agro-Value Chain-Creating a Prosperous and Peaceful Society. These include:

- Youth welfare and engagement in agribusiness;
- ICT and Agricultural Value Chain;
- Farm and Non Farm Employment Pattern among Youths;
- Perception, Attitude and Societal influence of Youths Participation in Rural Development;
- Agriculture and Youth Restiveness in 21st century;
- Gender issues in Children and Youth Programs in Agriculture;
- Children and Youth Programs in Digital Agriculture; and
- Issues in Childhood Education and Agricultural Development among others.

CONCLUSION

Let me conclude by assuring the participants that this conference has the capacity and the capability to deal with the various issues highlighted positively. The sub-themes have the potential to bring about serious academic engagements and meaning debates across disciplines in

Thank you!

You are welcome.



NUTRITIONAL AND COGNITIVE ASSESSMENT OF SCHOOL AGE CHILDREN LIVING IN PRIVATE AND PUBLIC ORPHANAGE HOMES IN IBADAN

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Abstract

This study focused on the nutritional and cognitive assessment of school age children living in private and public homes in Ibadan. Simple random sampling was used to select 120 respondents from both homes. A structured questionnaire was used to assess the socio-economic characteristics, food consumption pattern and anthropometric indices while Montreal Cognitive Assessment (MOCA) was used to test the level of cognition of the children. The data was analysed using descriptive statistical analysis such as frequency counts and percentages. The distribution of nutritional status of the respondents based on weight-for-age and height-for-age with results showing that majority (88.3%) of the respondents were normal weight. Similarly, majority (78.3%) of the respondents had normal height-for-age. The result also shows that private homes had a higher percentage (38.3%) of children in normal range of cognitive abilities than children in public homes (13.3%). It was recommended that efforts should be made to provide opportunities for children in public homes to develop better cognitive abilities through mind tasking games and more outings in order to ensure better performance and also that non-governmental organizations, organized private sectors and other stakeholders should work on ways of contributing to the maintenance of the orphanages seeing that the children deserve a good future like other children.

Key words: Children, Cognitive, Nutrition, Orphanage.

INTRODUCTION

A child who is below 18 years of age and who has lost one or both parents may be defined as an orphan (George, 2011). According to Dulcan's Textbook of Child and Adolescent Psychiatry 2015, school age children are defined as children ages 6-12 years. Children without parental care find themselves at greater risks of discrimination, inadequate care, abuse and exploitation (Delap, 2010) and thirty six percent of the world's orphans live in Sub-Saharan Africa (Braitstein *et al*, 2013). Furthermore, there have been shown differences in nutrition related problems such as protein energy malnutrition (PEM), vitamin A and B, complex deficiency disorders between children who are living in institutions run by government and non-government organizations (Vaida, 2013). Appropriate dietary intake is critical for forming good eating habits and

provides the much needed nutrients for growth, long-term health, cognition and educational achievements (Ochola & Masibo, 2014). A study reports that orphans are more likely to be stunted in their growth and less likely to be enrolled in school than children living with both parents (Vaida, 2013). Under nutrition reduces immunological capacity to defend against diseases, and diseases deplete and deprive the body of essential nutrients. Under nutrition and infectious diseases insidiously impaired intellectual development that can significantly reduce learning potential (Black *et al*, 2003). Malnutrition prevents orphaned children from reaching their full physical and mental potential. The main objective of the study is to assess Nutrition and Cognition of School Age Children living in Private and Public Orphanage Homes in



Ibadan. The specific objectives of the study were to

- i. To determine the nutritional status of children living in public and private orphanage homes and
- ii. To assess the level of cognitive development of children living in orphanage homes.

METHODOLOGY

The study was carried out in two local government areas in Ibadan, Oyo State and the research design adopted for the study was descriptive survey. Multi-stage sampling procedure was adopted to select total of 120 respondents from 4 different orphanage home from Ibadan metropolis, two local government areas are randomly selected. Two orphanage homes were selected from Ibadan-North local government (one private and one public home) with 30 respondents from each home. Also, two homes were also selected from Ibadan-South West local government (one private and one public home) with 30 respondents from each home

A structured questionnaire which consists of socio-economic characteristics, food consumption pattern and anthropometric indices like weight of respondents, height of respondents were used to describe the Body Mass Index (BMI). Upper arm circumference, head circumference of the respondents were measured using instruments like measuring tape and ruler was used to measure the height of respondents in their homes. The assessment was done using the weight-for-age and height-for-age computed using the World Health Organization Anthroplus software, WHO AnthroPlus - 2009.

An informal interactive question section for their dietary assessment was also used, asking the children questions on their food consumption rate and the guardians of the children to get the basic information needed on their rate of consumption of proteins, vitamins, minerals, carbohydrates, iron, calcium and other essential body nutrients, portion size was also determined,

kinds of foods consumed, time of the day food is consumed, etc.

Montreal Cognitive Assessment (MOCA) was also used to test the level of cognition of the children. Data collected were analyzed using descriptive statistics and T-test.

RESULTS AND DISCUSSION

Socio-economic characteristics of the children

The table 1 shows that most of the children in both homes were aged 6 – 10 years (private = 86.7%, public = 88.3%, overall = 87.5%). Majority of the respondents in both the private (56.7%) and public homes (53.3%) were female. Majority of the children in both the private (90%) and the public (81.7%) homes were Christian. Overall, most of the children were Christian (85.3%). The result showed that all the children in the public and private homes were in primary school level.

Anthropometric Assessment of the Children

The distribution of private home respondents' BMI in table 2 shows that 96.7% of the respondents were found to be underweight while 3.3% were normal weight. The mean BMI score was 15.1(±1.7). In the Public homes, 98.3% of the respondents were found to be underweight while 1.7% were normal weight. The mean BMI score was 15.5(±1.7). Overall, 97.5% of the respondents were found to be underweight while 2.5% were normal weight. The mean BMI score was 15.3(±1.7). Also, none of the respondents, both in private and public homes were found to be overweight.

Cognitive Reasoning of Respondents

The result in table 3 shows that most of the children in both homes had cognitive reasoning below normal (private = 61.7%, public = 86.7%). However, children in the private homes were found to have higher levels of cognitive reasoning compared to those in the public homes (private= 38.3%, public= 13.3%). This implies that most of



the children will not do well academically. This in turn will affect their productivity levels. A study by Sally *et al* 1998 on Effects of health and nutrition on cognitive and behavioural development in children stated that children with poor psychosocial and cognitive development are unable to benefit fully from schooling and to become productive citizens. This failure has implications both for the individuals and for national development. According to Coheley *et al* (2018), daily egg intake in children positively correlated with development in children. Boiled eggs should be consumed daily by school age children but it is evident from the data collected that children living in private homes consume boiled egg more frequently daily (50%) as compared to children of public homes who consume boiled egg 3-5 times per week and do not consume boiled eggs at all daily (0%). Furthermore, milk is a complete protein with all the amino acids needed for a child's growth. Whole milk helps to improve children's nutrition, but from the data collected, the children in private homes consume whole milk less frequently daily (8%) and more frequently 1-2 times a week (50%), while children of public homes consume whole milk more frequently 1-2 times a week (98.3%) and do not consume whole milk at all daily (0%). Researched evidence proves that poor nutrition can impair cognitive development (Anett *et al*, 2013).

In addition, cooked vegetables are beneficial to children's health but it was observed in the study that cooked vegetables were consumed by children in public and private homes daily at low frequencies of (50%), (48.3%) respectively. and children in public orphanage homes consume cooked vegetables at a low frequency also It is also observed that oranges, which are good and natural sources of vitamin C are not consumed daily (0%) by the children in private homes and more frequently consumed either 1-2 times per week (50%)

or once a month (50%). But the children in the public homes consume oranges more frequently daily (48.3%). One of the factors that influence cognitive development is nutrition. Research suggests a connection between improved nutrition and optimal brain function. Since nutrients provide building blocks that play a critical role in brain function. (De Souza *et al.*, (2011); Zimmermann, 2011).

Frequency of Consumption of Roots and Tuber

It could be seen from the results that in private homes and public homes, carbohydrate dense foods are the most frequently consumed than foods rich in protein, vitamins and some minerals. A study has shown a positive association between fish (protein) intake (which is a rich source of omega-3 fatty acids) and cognitive development in children (Boucher *et al.*, 2011). Hence, proteins should be increased in the children's diet.

CONCLUSION

The children in public and private homes did not differ in their nutritional status but the children in the private homes demonstrated better cognitive abilities compared to those in public homes.

Also, children in private homes tend to consumed more of some classes of food like protein, milk and milk products compared to those in public homes.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- i. Effort should be made to provide opportunities for children in public homes to develop better cognitive abilities in order to ensure better performance.
- ii. Non-governmental organizations, organized private sectors and other stakeholders should work on ways of contributing to the maintenance of the orphanages seeing that the children there are also significant members of the society and they deserve a good future like other children.



REFERENCES

- Anett Nyaradi, Jianghong Li, Siobhan Hickling, Jonathan Foster, and Wendy H. Oddy (2013). The Role of Nutrition in Children's Neurocognitive Development, from Pregnancy through Childhood. *Frontiers in Human Neuroscience*; 7: 97. Published online 2013 Mar 26. doi: [10.3389/fnhum.2013.00097]PMCID: PMC3607807PMID: 23532379.
- Black, R., Morris, S. and Jennifer, B. (2003). Where and Why Are 10 Million Children Dying Every Year? *The Lancet*, 361: 2226-2234. 10.1016/S0140-6736(03)13779-8.
- Boucher O., Burden M. J., Muckle G., Saint-Amour D., Ayotte P. and Dewailly E. (2011). Neurophysiologic and neurobehavioral evidence of beneficial effects of prenatal omega-3 fatty acid intake on memory function at school age. *Am. J. Clin. Nutr.* 93, 1025–1037 10.3945/ajcn.110.000323
- Braitstein, P., Samuel, A., Winstone, M., Allan, K., Julius, K., Peter, G. (2013). Nutritional Status of Orphaned and Separated Children and Adolescents Living in Community and Institutional. *PLOS*, 5. Children. *Osteoporos Int.* 29(8):1783-1791. doi: 10.1007/s00198-018-4538-1. Epub 2018
- Coheley L.M, Kindler J.M, Laing E.M, Oshri A, Hill Gallant K.M, Warden S.J, Peacock M, Weaver C.M, Lewis R.D. (2018). Whole egg consumption and cortical bone in healthy children. *Osteoporos Int.* 29(8):1783-1791. doi: 10.1007/s00198-018-4538-1. Epub 2018 Apr 30
- Delap, E. (2010). Researching the links between social protection and children's care in Sub-saharan Africa- concept note. *Every Child*, 1.
- De Souza A. S., Fernandes F. S., Do Carmo M. G. (2011). Effects of maternal malnutrition and postnatal nutritional rehabilitation on brain fatty acids, learning, and memory. *Nutr. Rev.* 69, 132–144 10.1111/j.1753-4887.2011.00374George, A. (2011). State of Orphans in the Early Paradise. *Econ Polit Weekly* 46 (10), 19.
- Ochola, S & Masibo, S. (2014). Dietary Intake of Schoolchildren and Adolescents in Developing Countries. *Annals of Nutrition and Metabolism*, 24-40.
- Sally M. Grantham-McGregor (Chairman), Ernesto Pollitt, Theodore D. Wachs, Samuel J. Meisels, and Keith G. Scott (1998). PAHO/Tropical Metabolism Research Unit, University of the West Indies/World Bank. *Nutrition, health, and child development: Research advances and policy recommendations*. Scientific Publication No. 566. Washington, DC: Pan American
- Health Organization, Vaida, N. (2013). Nutritional Assessment of Orphaned and Separated Children and Adolescents Living in Community and Institutional. *PLOS*, 25-30.
- Zimmermann M. B. (2011). The role of iodine in human growth and development. Seminar on Cell Development, *Biology* 22, 645–652 10.1016/j.semcdb.2011.07.009



Table 1: Personal and Socio-economic Characteristics of Children

	Home Type				Total		Chi-sq/t	df	P
	Private Home	Public Home							
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>			
Age of Child									
<= 5 years	1	1.7	1	1.7	2	1.7			
6 - 10 years	52	86.7	53	88.3	105	87.5	chi-sq = 0.086	2	0.958
11+ years	7	11.7	6	10	13	10.8	t = 0.986	0	0
Sex									
Male	26	43.3	28	46.7	54	45	chi-sq = 0.135	1	0.714
Female	34	56.7	32	53.3	66	55			
Religion									
Christian	54	90	49	81.7	103	85.3	chi-sq = 0.748	1	0.387
Muslim	6	10	11	18.3	17	14.7			
Others	0	0	0	0	0	0			
Education level									
Primary	60	100	60	100	120	100			
Health Status									
Healthy	57	95	60	100	116	97.5	chi-sq = 3.026	2	0.22
Sick	2	3.3	0	0	2	1.7			
Disabled	1	1.7	0	0	1	0.8			
Household Size									
30	30	50	0	0	25	25			
40	0	0	30	50	25	25			
43	0	0	30	50	30	25	chi-sq = 116.07	2	0.001
32	30	50	0	0	30	25			

Source: Field survey, 2017



Table 2: Anthropometric Assessment of the Children

Anthropometric Factor	Home Type				Total		Chi-sq/t	df	p
	Private Home		Public Home		Freq	%			
	Freq.	%	Freq.	%	.	%			
Weight (kg)									
<= 16.0000kg	0	0	2	3.3	2	1.7			
16.0001kg - 21.0000kg	18	30	13	21.7	31	8			
21.0001kg - 26.0000kg	22	36.7	40	66.7	62	7	chi-sq= 22.597	4	0.001
26.0001kg - 31.0000kg	20	33.3	3	5	23	2			
31.0001+kg	0	0	2	3.3	2	1.7			
Mean(±SD)	23.5(±3.4)		23.2±4.4		23.2±4.5		t = 0.6	11	0.55
								8	
Height (cm)									
<= 110.0cm	2	3.3	3	5	5	4.2			
110.1cm - 120.0cm	15	25	27	45	42	35	chi-sq = 8.067	3	0.045
120.1cm - 130.0cm	31	51.7	26	43.3	57	5			
130.1+cm	12	20	4	6.7	16	3			
Mean(±SD)	124.9(±6.6)		121.9(±8.2)		123.5(±7.5)		t = 2.322	11	0.02
								8	2
BMI Calculations									
Underweight (< 18.5000)	58	96.7	59	98.3	117	5	0.342	1	0.559
Normal Weight (18.5000-25.00)	2	3.3	1	1.7	3	2.5			
Overweight (> 25.00)	0	0	0	0	0	0			
Mean(±SD)	15.1(±1.7)		15.5(±1.7)		15.3(±1.7)		t = -1.437	11	0.15
								8	3
Upper Arm Circumference									
6.1 - 8.0	60	100	55	91.7	115	8	5.217	1	0.02
8.1 - 10.0	0	0	5	8.3	5	4.2			
Mean(±SD)	6.8(±0.4)		7.3(±0.8)		7(±0.7)		t = -4.043	11	0.00
								8	0
Head Circumference									
16.01 - 20.00	20	33.3	45	75	65	2	20.979	1	0.00
20.01 - 24.00	40	66.7	15	25	55	8			
Mean(±SD)	20.7(±1.3)		19.4(±1.4)		20.1(±1.5)		t = 5.096	11	0.00
								8	0

Source: Field survey, 2017



Table 3: Cognitive Reasoning of Respondents

MOCA	Home Type						Chi-sq/t	df	P
	Private Home		Public Home		Total				
	Freq.	%	Freq.	%	Freq.	%			
Below Normal (< 26)	37	61.7	52	86.7	89	74.2	11.961	3	0.008
Normal (26+)	23	38.3	8	13.3	31	25.8			
Mean(±SD)	23.9(±3.2)		22.23(±3)		23.07(±3.2)				

Source: Field survey, 2017

Table 4: Frequency of Consumption of Roots and Tubers

	Home Type															
	Private Home						Public Home									
	3-5 times per week		1-2 times per week		Once a month		Never		Daily		3-5 times per week		1-2 times per week		Once a year	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Yam	60	100.0	0	.0	0	.0	0	.0	30	50.0	30	50.0	0	.0	0	.0
Fufu	0	.0	0	.0	30	50.0	30	50.0	0	.0	30	50.0	30	50.0	0	.0
Sweet Potato	30	50.0	30	50.0	0	.0	0	.0	30	50.0	0	.0	0	.0	30	50.0
Irish Potato	30	50.0	1	1.7	29	48.3	0	.0	0	.0	29	48.3	1	1.7	30	50.0
Amala	59	98.3	1	1.7	0	.0	0	.0	30	50.0	30	50.0	0	.0	0	.0
Pounded yam	29	48.3	2	3.3	29	48.3	0	.0	30	50.0	0	.0	0	.0	30	50.0
Eba	59	98.3	1	1.7	0	.0	0	.0	0	.0	30	50.0	30	50.0	0	.0
Cocoyam	0	.0	0	.0	30	50.0	30	50.0	0	.0	30	50.0	0	.0	30	50.0

Source: Field survey, 2017



RURAL YOUTH CONTRIBUTIONS TO FAMILY FARMING IN YEWA SOUTH LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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Abstract

The potential of youths in contributing to family farming are not adequately identified and utilized in developing countries including Nigeria. Therefore the study examined the contributions of rural youths to family farming in Yewa South Local Government Area of Ogun State, Nigeria. The specific objectives are to describe the socio-economic characteristics of youths, identify the agricultural activities involved in by the youths and to identify the constraints youths encountered in agricultural activities. Simple random technique was used to select 105 youths between the ages of 15-35 years. Primary data were collected through a structured questionnaire. Data collected were analyzed using descriptive statistics such as frequency counts, percentages and mean. Results revealed that youths contributed in a wide range of farming activities, ranging from planting, harvesting, weeding, processing and marketing of agricultural products. Inadequate capital (73.2%), lack of modern farm tools (60.0%), poor yields (46.7%), pest and diseases (41.1%) were identified as constraints hindering respondents' contributions to family farming. Rural youth contribution to family farming was low. This may be as a result of constraints faced them. It is recommended that enabling environment such as provision of adequate credit facilities, tractor hiring and effective extension services should be provided to youth which will increase their contributions to farming, enhances family's wellbeing and food security.

Key words: Rural, Youth, Contribution, Family farming.

INTRODUCTION

In the 1970s, the Nigerian economy was almost completely agrarian and farming was considered not only a traditional activity but also an economic activity with a clear focus on higher productivity at all levels. The small scale farmers dominated agricultural production in Nigeria and the bulk of rural households were found in this category (Dixon, 2004 (in Adetimirin, 2010), Ewebiyi, 2014).

During this period, the Nigerian government was highly committed to and supportive of agricultural development, as shown in its annual expenditure on agriculture. The federal government capital expenditure increased from ₦35.4 million in 1973 to ₦60s2.2million in 1982.

Similarly contribution of agriculture to the GDP between 1980 and 1985 averaged ₦ 34,950.00 million (Okunmadewa, Okoruwa and Adegboye, 2004). Agriculture remains a family enterprise in Nigeria as youths, women and men of all ages are involved in one way or the other in the agricultural production processes.

Hence, this implies that everybody that has potential in contributing to agricultural development is required of Nigeria is to make realistic and positive step in solving agricultural problems (Akintola and Akindiji, 1991, Ekong, 2003 (in Yusuf *et al* (2015). Nigeria's government implemented various agricultural programmes such as Operation Feed the



Table 3: Cognitive Reasoning of Respondents

MOCA	Home Type						Chi-sq/t	df	P
	Private Home		Public Home		Total				
	Freq.	%	Freq.	%	Freq.	%			
Below Normal (< 26)	37	61.7	52	86.7	89	74.2	11.961	3	0.008
Normal (26+)	23	38.3	8	13.3	31	25.8			
Mean(±SD)	23.9(±3.2)		22.23(±3)		23.07(±3.2)				

Source: Field survey, 2017

Table 4: Frequency of Consumption of Roots and Tubers

	Home Type															
	Private Home						Public Home									
	3-5 times per week		1-2 times per week		Once a month		Never		Daily		3-5 times per week		1-2 times per week		Once a year	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Yam	60	100.0	0	.0	0	.0	0	.0	30	50.0	30	50.0	0	.0	0	.0
Fufu	0	.0	0	.0	30	50.0	30	50.0	0	.0	30	50.0	30	50.0	0	.0
Sweet Potato	30	50.0	30	50.0	0	.0	0	.0	30	50.0	0	.0	0	.0	30	50.0
Irish Potato	30	50.0	1	1.7	29	48.3	0	.0	0	.0	29	48.3	1	1.7	30	50.0
Amala	59	98.3	1	1.7	0	.0	0	.0	30	50.0	30	50.0	0	.0	0	.0
Pounded yam	29	48.3	2	3.3	29	48.3	0	.0	30	50.0	0	.0	0	.0	30	50.0
Eba	59	98.3	1	1.7	0	.0	0	.0	0	.0	30	50.0	30	50.0	0	.0
Cocoyam	0	.0	0	.0	30	50.0	30	50.0	0	.0	30	50.0	0	.0	30	50.0

Source: Field survey, 2017



RURAL YOUTH CONTRIBUTIONS TO FAMILY FARMING IN YEWA SOUTH LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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INTRODUCTION

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Similarly contribution of agriculture to the GDP between 1980 and 1985 averaged ₦ 34,950.00 million (Okunmadewa, Okoruwa and Adegboye, 2004). Agriculture remains a family enterprise in Nigeria as youths, women and men of all ages are involved in one way or the other in the agricultural production processes. Hence, this implies that everybody that has potential in contributing to agricultural development is required of Nigeria is to make realistic and positive step in solving agricultural problems (Akintola and Akindiji, 1991, Ekong, 2003 (in Yusuf *et al* (2015). Nigeria's government implemented various agricultural programmes such as Operation Feed the



Nation (OFN) 1978, Green Revolution, Cocoa rebirth and cassava development initiatives. All these were geared towards ensuring higher productivity and food security for the nation. The success of this depends to a large extent on women and youth. This fact was corroborated by Olujide (2011) who posited that peasant farmers produce the bulk of the food in developing countries including Nigeria with the help of their children (most of whom are at their youthful age).

Youths constitute the most important sector of the society and they serve as channels for the transmission of recognizable identity and proactive to ideas (Onuekwusi and Effiong, 2007). Youths also provide the required manpower for the socio-economic development of the society as well as helping in disseminating new ideas to other farmers. The future of agriculture is in the hands of youth and their contributions to family farming. For agriculture in Nigeria to regain its past glory, the youths must be encouraged to actively participate in agricultural activities. The potentials of youth in contributing to family farming, agricultural development and attaining food security are not adequately harnessed.

There has been a gradual but consistent drift of the rural youths to the urban cities in search of white collar jobs. The consequence of this is the reduction of the youth population in agricultural production activities. Most youths in developing countries including Nigeria contributed to agricultural production activities such as weeding, clearing, planting, harvesting and processing among others (Olujide 2011).

The youths in Yewa South LGA of Ogun state are no exception to rural-urban drift which has implication on family farming. To put this situation under check, Nigerian government needs to focus on providing the enabling agricultural environment in the rural areas to encourage young people stay on the farm.

Giving the above background, the objectives of the study are to

- i. describe the socio-economic characteristics of youths in the study area;
- ii. identify contributions of youths to family farming in the study area and
- iii. identify constraints which hinder youth contributions to family farming in the study area.

METHODOLOGY

The study was carried out in Yewa South Local Government Area (LGA) of Ogun state, Nigeria. Yewa South (formerly Egba South) is a local government area in the west of Ogun state, Nigeria bordering the Republic of Benin. It's headquarter is in the town of Ilaro at 6^o53'⁰'N 3^o01'⁰'E in the north of the area. It has an area of 629km² and a population of 168,850 at the 2006 Census. The area has ten political wards: Ilaro I, Ilaro II, Ilaro III, Iwoye, Idogo, Owode I, Owode II, Ilobi/Erinja, Oke Odan and Ajilete. It's choice as study area stem out from the fact that agriculture is the main means of livelihood of inhabitants and their children have been into it from their tender ages.(OGADEP, 2016). The main crops grown in the area include: cassava, yam, oil palm, maize, cocoa, melon, cocoyam, kolanut fruits and vegetables. Residents of the local government also engage in livestock production such as poultry, sheep, goat, cattle and sell their products like eggs and beef meat to support their livelihoods.

SAMPLING PROCEDURE AND SAMPLE SIZE

The population of this study comprised youths involved in farming activities in the study area. Simple random sampling technique was used to select five villages (Iwoye, Oke Erinja, Ilobi, Idogo and Idologun) from the ten wards that make up the local government area. From each of five selected villages, twenty-one youths between the ages of 15-35 years were randomly selected, making a total of 105 respondents. A well-structured interviewed



guide was designed and used to elicit information from the respondents. Descriptive statistics such as frequency counts, percentage and mean were used to analyze and achieve objectives i, ii and iii of the study.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Results presented in Table 1 revealed that the mean age of the respondents was 23.3 years which implies that respondents are young and active. This may make them contribute significantly to family farming. Age and dynamism considerably contributes many qualities associated with young people, such as their active involvement in community development, higher social propensity, faster reaction time, and proneness to adoption of agricultural innovation (Adesope, 2007). Majority (55.5%) of the respondents were males while 44.5% were females. This shows that there are more male youths than females in the study area. Their contributions to family farming are expected to increase significantly as males are generally more energetic than their female counterparts. The result further revealed that most respondents (71.8%) were single while (28.2%) were married. This implies that many of the sampled youths for the study were unmarried who are just starting life. This result is not in consonance with that of Nnadi (2005) who reported that married people were more disposed to farming and adoption of new technologies.

Nnadi (2008) also posited that the predicted probability of participating in rural agriculture is higher for married youths which could be adduced to ownership of land resources especially by males who have increased concern for livelihood welfare and food security following marital responsibilities and conviction overtime of the importance of agriculture in rural livelihood. Furthermore, more than half of the

respondents (51.8) earned below ten thousand naira monthly. This implies that youths in the study area were low income earners. This may discourage them from participating in agricultural activities with resultant effect of low contribution to family farming.

Result presented in table 1 on household size revealed that the mean household size was 5 persons. This connotes that respondents belong to a fairly large household size which is expected to enhance family agricultural activities and productivity. It is also expected that with fairly large household size, more hands would be made available on the farm as family labour and hence, reduces labour cost of the family farming.

This result is concomitant with that of Ewebiyi (2014) who reported that rural households in southwest Nigeria had large household size with implication of labour supply on the farm. The majority of the respondents (45.5%) had secondary school education while (37.3%) had tertiary education. Since majority of the respondents were educated, it is likely to enhance the adoption and diffusion of modern farm techniques/technologies.

The above findings is in agreement with that of Hannatu *et al* (2015) who reported that youths in Giwa Local Government Area (LGA) of Kaduna state, Nigeria were educated and this assisted them in contributing meaningfully and effectively to their family farming. This result is in contrast with the past study by Jamiu *et al* (2014) who reported that majority of youths had primary education.



Respondents' contribution to family farming

Farming involves performance of several high energy demanding tasks. In family farming, the youth support and contributes to the labour of the old and weak members. Results presented in 2a revealed that most respondents (90.0%) involved in planting activities, weeding and harvesting (76.4%), land clearing (67.3%), fertilizer application (53.6%) and marketing (75.5%). This implies that since respondents contribute much to family farming, the family food security, youth livelihood and employment may be improved significantly in the study area. These findings concur with that of Adesope (2007) and Oyewole *et al* (2015) who both reported active involvement and contribution of youths to agricultural activities. The result also agrees with Nnadi and Akwiwu (2008) that agriculture is synonymous with rural households' livelihood. Youth were born and bred to embrace farming and that's since agriculture is the first employment to rural youths, then the formative and dependent stages of existence, parents' interest often determines ward's interest, hence, predominant parents, agricultural engagement influenced youths agricultural interest. Result in Table 2b also revealed that most respondents (54.5%) contributed at low level to family farming while (45.5%) fell on the high level of contribution and this may have negative impact on rural households' food security, rural youth's livelihoods and employment.

Constraints of Youths in Contributing to Family Farming

Respondents were confronted with some challenges which impacted negatively on their contributions to family farming. The result of analysis in table 3 reveals lack of modern tools (60.0%), unaffordable agricultural inputs (73.20%), poor yields (46.70%) pest and diseases (41.13%), poor soil conditions (21.70%) were constraints faced by the respondents. Inadequate marketing channel (52.30%), theft

(44.0%), bad roads (72.50%) and unfavourable climate (28.36%) were also identified as severe constraints militating against effective contribution of rural youths to family farming in the study area. These findings agreed with that of Hannatu *et al* (2015) who also reported unfavourable climate, inadequate capital and credit facilities as well as unaffordable agricultural inputs as challenges facing rural youths in contributing to family farming in Giwa LGA of Kaduna state, Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study concluded that contribution of rural youths to family farming in the study area was low. Lack of modern agriculture tools, unaffordable agricultural inputs, poor yields, pest and diseases and bad roads were identified as severe constraints militating against effective contribution of rural youths to family farming in the study area.

The study recommends that government at all levels should provide incentives to youths to make agriculture more attractive by providing adequate training, up to date information on new ways of farming. Extension services delivery must be repackaged by the government and Non-Governmental Organizations (NGOs) to effectively incorporate youth in agriculture programmes into their agricultural programmes for sustainable and effective delivery of extension services. Massive rural development should be carried out by the government so as to stem down the tide of rural-urban migration and encourage youths to stay in rural areas.

REFERENCES

- Adesope, O.M (2007) *Agricultural Youth Organizations: Introductory Concepts*. Second edition, University of Port Harcourt press, Port Harcourt, Nigeria, pp.1-3.
- Adetimirin, V.O. (2010) *Deploying Bio-Technology for Food Security in Nigeria: Hope or Hype?* Faculty of Agriculture,



Lecture delivered at University of Ibadan on 8th June, 2010, Ibadan University Press, p.5.

Ewebiyi, I.O. (2014) *Livelihood Diversification among Rural Households in Southwestern, Nigeria*. Unpublished PhD Thesis, Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan, Nigeria.

Hannatu, O.Y., Akinola, M.O., Yusuf, H.A., Shuaib, H. and Muhammad, A. (2015) Contributions of Rural Youth to Family Farming in Giwa Local Government Area of Kaduna State, Nigeria. *Journal of Sustainable Agriculture*, 9(4): 31-37

Jamiu, A.A., Haruna, S.K., Abdullatu, A.Y. and Baba, D. (2014) Effects of Youth Participation in Guava Production of Poverty Alleviation in Iwo Local Government Areas of Kaduna State, Proceedings of the 19th Annual Conference of the Agricultural Extension Society of Nigeria: 110-118.

Nnadi, F.N. and Akwiwu, C.D. (2005) Harnessing the Potentials of Youths for Rural Household Food Security in Nigeria. *Annual Production Resources Advances*. 1:104-110.

Nnadi, F.N. and Akwiwu, C.D. (2008) Determinants of Youths' Participation in Rural Agriculture in Imo State, Nigeria, *Journal of Applied Sciences* 8:328-333.

Ogun State Agricultural Development Programme (OGADEP) (2016) Extension services delivery field evaluation reports

Okunmadewa, F., Okoruwa, V.O. and Adegboye, R.A. (2004) *Agricultural Development Process and Land Use Tenure and Conservation in Nigeria, Agriculture, Renewable National Resources, Animal Husbandry and Health*. Ologbobo, A.I. (ed), Ibadan, General Studies Programme, University of Ibadan, pp.5-7.

Olujide, M.G. (2011) Assessment of Rural Children in Agricultural Activities in Ogbomoso Zone of Oyo State, Nigeria: A Vocational Concept
<http://www.readperiodical.com>

Onuekwusi, G.C. and Effiong, E.O. (2007) "Youth Empowerment in Rural Areas through Participation in Rabbit Production: A Case Study of Akwa Ibom State, Nigeria". *Nigerian Journal of Rural Sociology*, 4: 95-99.

Oyewole, M.F., Olujide M.G. and Oyedeji J.A. (2015) Youth Participation in Watermelon Production in Ado-Odo Ota Local Government Area of Ogun State, Nigeria. Proceedings of the 20th Annual Conference of the Agricultural Extension Society of Nigeria, pp.132-134.

Yusuf, H.A., Shuaib, H. and Mohammad, A. (2015) Encouraging youth involvement in Agricultural production and processing, *Nigerian Journal of Agriculture, Food and Environment* 5(1): 20-26



Table 1: Distribution of respondents according to their socio-economic characteristics

Variables	Frequency	Percentage	Mean	SD
Age				
15-19	41	37.3	23	5
20-24	19	17.3		
25-29	28	25.5		
30-35	22	20.0		
Sex				
Male	49	44.5		
Female	61	55.5		
Marital Status				
Single	79	71.8		
Married	31	28.2		
Monthly Income				
Below 10,000	57	51.8		
10,000 – 20,000	8	7.3		
20,000 – 30,000	21	49.2		
Above 30,000	24	21.8		
Household Size				
2-3	15	13.6	5	2
4-5	51	46.4		
6-7	37	33.6		
8-10	7	6.4		
Level of Education				
No formal education	18	16.4		
Primary education	1	0.9	1.59	
Secondary education	50	45.5		
Tertiary education	41	37.3		

Source: Field survey, 2018



Table 2a: Distribution of youth contributions in family farming activities

Farming activities	Yes		No	
	F	%	F	%
Planting	100	90.9	10	9.1
Harvesting	84	76.4	26	23.6
Land clearing	74	67.3	36	32.7
Marketing	83	75.5	27	24.5
Processing	27	24.5	83	75.5
Gathering of non-timber forest products (NTFPs)	13	11.8	97	88.2
Rearing of poultry birds	36	32.7	74	67.3
Animal husbandry	24	21.8	86	78.2
Weeding	84	76.4	26	23.6
Fertilizer application	59	53.6	51	46.4
Staking	10	9.1	100	90.9

Source: Filed survey, 2018

Table 2b: Distribution of youths' level of contribution in family farming activities

Level of Contribution	Frequency	Percentage	Mean
Low (0 – 5.3)	60	54.5	
High (5.4 – 11)	50	45.5	5.11
Total	110	100.0	

Mean: 5.4±1.9, Minimum=0, Maximum=11

Source: Field survey, 2018

Table 3: Distribution of respondents according to constraints encountered

Constraints	Frequency	Percentage
Lack of modern tools	63	60.00
Unaffordable agricultural inputs	77	73.20
Poor yields	49	46.70
Pest and diseases	43	41.13
Poor soil conditions	23	21.70
Inadequate marketing channel	55	52.30
Theft	42	40.00
Bad roads	76	72.50
Unfavourable climate	30	28.36

Multiple responses *

Source: Field survey, 2018



ASSESSMENT OF OCCUPATIONAL HAZARDS ASSOCIATED WITH SMOKED FISH PRODUCTION IN SELECTED FISH SMOKING CENTERS WITHIN OYO STATE, NIGERIA

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Abstract

The study assessed the occupational hazards associated with smoked fish production in selected fish smoking centers within Oyo state Nigeria. The study employed multi stage sampling technique. Structured questionnaire was used to obtain information on socio-economic characteristics of respondents, job description of the respondents, hazards associated with fish smoking, employer's responsiveness towards hazards. The data obtained were subjected to descriptive statistical analysis such as frequencies and percentages which were used in organizing, summarizing and presenting the research findings. Most workers (59%) that participated in fish smoking activities in the study area are in their active age (31 – 40 years), they spend 6 – 10 hours per day on the job and the industry is dominated by females (77%). Most (63%) of the respondents experienced accidental knife cut as major physical hazard while 62%, 56% and 42% saw body pain, headache and high body temperature respectively as a major health hazards associated with fish processing. Poor ventilation, poor posture and poor illumination ranked 1st, 2nd and 3rd environmental hazards associated with fish smoking activities while radiation was not seen as a major environmental hazard in fish smoking industry. This study also revealed that processing of smoked fish significantly ($P < 0.05$) pose one form of hazard or another to respondents in the study area while Majority (83.3%) of the respondents claimed that their employers promptly make provision for protective equipment but little provision was made for worker's health surveillance programme (28% promptly pay) and worker's health insurance scheme (15% promptly pay). It is therefore recommended that relevant agencies of Government to ensure that fish smoking industries take the health and safety of their workers more seriously by ensuring proper health and safety education, providing necessary equipments to reduce health challenges associated with their job and providing proper health insurance scheme.

Key words: Occupational, hazards, smoked fish, smoking centers

INTRODUCTION

Occupational injuries are major sources of morbidity and mortality among all workers. Every year almost one thousand workers die as a result of job related hazards and one fourth of a million are injured in industries in developing nations while thousands of others are crippled due to occupational injuries (Driscoll *et al.*,

2005). Asim *et al.* (2006) reported that occupational injuries represent a major problem in public health and severe consequences also do occur as after-effect leading to social and economic losses. Zakia *et al.* (2012) define hazard as the presence of a material or conditions that has the potential for causing loss or harm or a combination of the severity of



consequences and likelihood of occurrence of undesired outcomes. Olaoye *et al.* (2015) reported that various hazards had been reported in fish processing industry including redness/swelling of the eye (which is the commonest), mechanical and electrical accidents, bacterial and parasitic infections, noise induced hearing loss, allergic respiratory diseases and stress related health problems. Zakia *et al.* (2012) also reported that fish processing workers are susceptible to many physical hazards in the course of their work such as noise, injuries, sting from fish spines, cuts, sprain, fracture, snake bites and son on have the potential of causing adverse health effects on workers. Asim *et al.* (2006) reported that workers in fish processing industry are often injured with small sharp knife used while working and their hands come in contact with different sharp body parts of fishes. Cole *et al.* (2009) reported that there is high prevalence of sick leave due to disorders of the musculoskeletal system and the intention to leave the job in Ghana fish processing factories due to musculoskeletal injuries. Many workers have reported job related hazards in many countries. However, there is limited information on occupational hazards associated to smoked fish production in the study area thus the need for this study.

The objective of this study are

1. Describing the socio-economic characteristics of workers in smoked fish industry in Oyo State Nigeria;
2. Identify the various job descriptions of these workers;
3. Evaluate hazards associated with fish smoking in the study area and
4. Access employer's responsiveness towards workers hazards in their fish smoking centres.

Hypothesis statement was that no significant relationship exists between hazard associated with fish smoking and fish smoking activities.

METHODOLOGY

The study was carried out in Oyo state, Nigeria. The study area has heterogenous population of Yoruba, Igbo and Hausa. Oyo state was located in the South-West geopolitical zone of Nigeria, Oyo State was one of the three States carved out of the former Western State of Nigeria in 1976. Oyo State consists of 33. Local Government Areas which are: Akinyele, Afijio, Egbeda, Ibadan North East, Ibadan North West, Ibadan South East, Ibadan South West, Ibarapa Central, Ibarapa East, Ibarapa North, Ido, Irepo, Iseyin, Kajola, Lagelu, Ogbomosho South, Oyo West, Oyo East, Atiba, Atigbo, Saki East, Saki West, Itesiwaju, Iwajowa, Olorunsogo, Oluyole, Ogo- oluwa, Surulere, Ori ire, and Onaara. The State covers a total of 27,249 square kilometers of land mass and it is bounded in the south by Ogun State, in the north by Kwara State, in the west it is partly bounded by Ogun State and partly by the Republic of Benin, while in the East by Osun State. The state has four political zones namely- Saki, Ogbomosho, Oyo, and Ibadan out of which one zone was studied which was Ibadan. The study population comprises of different fish species processors in Oyo State metropolis. Primary data were collected with the use of interview scheduled using structured questionnaire.

Primary data were collected; multistage sampling techniques were employed for the study. The first stage involved the selection of three (3) local government areas out of the thirty three (33) local government areas of Oyo State using simple random technique. The Local Government selected includes, Egbeda, Ido, Ibarapa East. The second stage involved the selection of three (3) wards under each Local Government selected using simple random technique, which gave to the total sum of (9) wards. Five (5) communities under each ward were selected using simple random technique which gave the total sum of forty five (45) communities. The third stage involved the selection of 4 processed fish



mongers from each communities selected using simple random techniques which makes the total sum of 180 respondents, however the sampling rate was 83.3% which represent 150 respondents as the sample size.

The data were analyzed using appropriate statistical tools with the aid of SPSS (statistical package for social science research) version 16.0. The questionnaires were subjected to coding using Microsoft excel 2007 for windows package. The personal characteristics were analyzed using descriptive statistical (Percentage and Frequently counts).

RESULTS AND DISCUSSIONS

Socio-economic characteristics of respondents

The result on Table 1 shows that the mean age of the respondents in the study area was 34 years but specifically, 59.0% were in the age range 31-40 years, 25.0% were between 20-30 years and 16.0% were between 40-50 years of age. This shows (Table 1) that about 85.0% of the respondents fall within the age group of 40 years or less. This is similar to the report of Akinpelu *et al.*, 2013 in their study of gender analysis of processing activities among commercial catfish processors within Ibadan metropolis, Oyo State South-western Nigeria where it was reported that most of the catfish processors in Ibadan metropolis are still in their productive age of 41-50 years. People in this age category of youthful age are within the economically active population and therefore constitute a good labour force for fishery enterprise and will be good managers of limited available resources and can withstand rigors associated with the fishing activities. The result of this study also indicate that majority (77.0%) of the respondents were female while 23.0% were male. The low percentage of male might be because fish smoking is considered women's job in the study area. This is inline with the opinion of Oluwatoyin *et al.* (2013) who opined that

fish smoking is one of the preferred indigenous fish related job carried out by women in Southwestern Nigeria. The male folks dominate fish production while female engaged in fish processing and marketing in Nigeria.

The result of this study also reveals that majority (74.0%) of the respondents in the study area were married, 16.0% were single and 6 were widow/widower. This indicates that married people look for more ways of making money to cater for their families. Many (53.0%) of the respondents were Christians while 46.0% of them were Muslims while 1.0% were pagans. This reveals that most religious group did not forbid catfish processing, it is therefore a business venture accepted across board (Akinpelu *et al.*, 2013). Majority (64.0%) of the respondents had 4-6 house hold members, 24.0% had 1-3 house hold members while 12.0% had 7-9 house hold members. The mean household size was 5 members which can be used as family labour in line with the opinion of Akinneye *et al.* (2007) who reported that the large number of persons in a family pave way for use of family labour in fish processing and marketing. The result presented in Table 1 also indicates that majority (35.0%) of the respondents had secondary education while 29.0% had tertiary education. Furthermore, 44.0 percent of the respondents had 1-4 years of experience in fish smoking. The mean experience in fish smoking was approximately 6 years. This shows that the respondents were relatively not new in the processing business and fish smoking is not a new means of livelihood to the people in the study area. As seen in the result in the table, respondent spent averagely 9 hours per day engaging in fish smoking activity.

Job Description of respondents in various fish smoking activities

Result in Table 2 shows the level of participation of the respondents in the various activities associated with fish smoking process in the study area with



smoking (95%), marketing (90%), washing (86%) and folding (80%) being the activities that are often carried out by the respondents in the study area while 34 % and 24% of the respondents don't get involved in de-scaling and stunning respectively.

Hazards Associated with Fish Smoking

Physical hazards associated with fish smoking

The result on Table 3 indicates that physical stress (2.5) was ranked number one as major physical hazard. This might result from combination effects of other minor physical hazards identified such as excessive workload (2.05), excessive mental or visual demand (2.03) and strenuous work (1.89). Accidental knife cut (2.47) was ranked 2nd among the major physical hazard as this is commonly experienced in fish processing that involved the use of knives and other sharp tools for cutting fish. This is line with the report of Asim *et al.* (2006) where it was reported that workers in fish processing industry are often injured with small sharp knife used while working. Cut and scrapes areas on human body open a gateway to many viruses, diseases, infections and whitlow (Olaoye *et al.*, 2015). Prolong standing (2.26) which was ranked third as major physical hazards put fish processors at a greater risk of depression and gives room for the occurrence of other hazards.

Health Hazards Associated with Fish Smoking

Health hazards associated with fish smoking as presented on Table 3 indicates that body pain (2.53), headache (2.33), high body temperature due to exposure to heat (2.17) and itchy eyes (2.12) top the list of major health hazards affecting the respondents in the study area (as they are ranked 1st, 2nd, 3rd and 4th respectively) while gastrointestinal problems (1.96), hoarseness (1.84), swelling ankles (1.81) and skin disease (1.77) top the list of minor health hazards.

Environmental Hazards Associated with Fish Smoking

The environmental hazards associated with fish smoking activities experienced by workers in fish smoking facilities in the study area as presented on Table 3 indicates that the most prevalent environmental hazards affecting respondents in the study area are poor ventilation (2.26) and poor or awkward posture (2.13) while noise and radiation were less environmental hazard affecting workers in fish smoking facilities within Oyo state. This could be because the nature of their job does not require radiation activities or heavy machines that will make noise.

Employer's Responsiveness Towards Hazard Conditions

Result in Table 4 shows that majority (83.3%) of the employers promptly makes provision for protective equipment for their workers and 41.0 percent regularly organize hazard education for their workers. However, 39 percent of the employees rarely pay hazard allowance and 37 percent of them rarely pay treatment bills when workers are injured on the job. Most (48%) of the workers are not registered for health insurance scheme and almost half (46%) of the fish smoking industries do not have worker's health surveillance programme.

Result of Hypothesis Testing

The result on Table 5 shows that all activities involved in processing of smoked fish significantly ($P < 0.05$) pose one form of hazard or others to respondents in the study area. This is further confirmed by table 6 as most of the activities correlate with the various forms of hazards identified in the study area except sorting, washing, folding, packaging and marketing.

CONCLUSIONS AND RECOMMENDATIONS

This study indicates that most of the respondents are in their active age as 59%



of them fell between 31 – 40 years. The industry is dominated by females (77%) and spends between 6 – 10 hours per day on the job. Their job description showed that most of the respondents (95%) are involved in fish smoking while they seldomly involve in descaling and cooling. The major physical hazards identified in this study was accidental knife cut (63%) while the major health hazards associated with fish processing identified in the study area include body pain (62%), headache (56%), high body temperature (42%) among others.

The identified environmental hazards associated with fish smoking activities identified in the study area include poor ventilation which was ranked first followed by poor posture which was ranked second, poor illumination was ranked third while radiation was not seen as a major environmental hazard in fish smoking industry.

The result of this study indicates that all activities involved in processing of smoked fish significantly ($P < 0.05$) pose one form of hazard or another to respondents in the study area.

Majority (83.3%) of the respondents claimed that their employers promptly make provision for protective equipment (2.79), some rarely pay for hazard allowance (2.07) or treatment bills (1.93) while others rarely give regular hazard education. However, little provision was made for worker's health surveillance programme (1.82) or worker's health insurance scheme in the study area.

It is therefore imperative for relevant agencies of Government to ensure that fish smoking industries take the health of their workers as an important thing by ensuring health and safety education, providing necessary equipments to reduce health challenges associated with their job and providing proper health insurance scheme. Fish processors should also take necessary precautions during fish processing to avoid unnecessary hazards.

REFERENCES

- Akinneye, J. O., Amoo, I. A. and Arannilewa, S. T. (2007). Effect of drying methods on the nutritional composition of three species of *Bonga spp*, *Sardine asp* and *Heterotis niloticus*. *Journal of Fisheries International*. 2(1):99-109.
- Akinpelu, O. M., Ayeloja, A. A., George, F. O. A., Adebisi, G. L. and Jimoh, W.A.. (2013) Gender Analysis of Processing Activities among Commercial Catfish Processors within Ibadan Metropolis, Oyo State South-Western Nigeria. *Journal of Aquaculture Research and Development*. 4: 176 doi:10.4172/2155- 9546.1000176
- Asim, S., Anjali, N. and Pranab, K. N. (2006). Occupational injury proneness in Indian women: A survey in fish processing industries. *Journal of Occupational Medicine and Toxicology*. 1:23 doi:10.1186/1745-6673-1-23
- Cole, D. W. R. Cole, S. J., Gaydos, J. G., Hyl, M. L., Jacques, N., Powell-Dunford, C., and Sawhney W. W .A. (2009). Aquaculture: environmental, toxicological and health issues. *International Journal of Hygiene Environment and Health*. 212: 369-377.
- Ibrahim, H. I., Kigbu, A. A. and Mohammed, R. (2011). Women's experiences in small scale fish processing in Lake Feferuwa fishing community, Nasarawa State, Nigeria. *Livestock Research for Rural Development* 23: 1-11.
- Olaoye, O. J. Odebisi, O. C. and Abimbola, O. T. (2015). Occupational Hazards and Injuries Associated with Fish Processing in Nigeria. *Journal of Aquatic Science*. 3(1): 1-5.
- Oluwatoyin, D.K.; Stella, B. W. & Awujola, A. F. (2010). Indigenous fish processing and preservation practices amongst women in Southwestern Nigeria. *Indian Journal of Traditional Knowledge*. 9: 668-672.
- Paris, T. and Chi, T. T. (2005). The impact of row seeder technology on women labor: A case study in the Mekong Delta, Vietnam. *Gender Technology and Development*. 9: 158-183.
- Zakia, A. M., Ahmed, M. I., Dosoki, A. and Shaimaa, A. A. N. (2012). Review Article; Occupational Hazards in Fish Industry. *World Journal of Fish and Marine Sciences*. 4 (2): 201-210.



Table 1: Socio-economic Characteristics of Respondents

Variable	Frequency	%
Age		
21-30	25	25.0
31-40	59	59.0
41-50	16	16.0
Total	100	100.0
Mean	34	
Sex		
Male	23	23.0
Female	77	77.0
Total	100	100.0
Marital status		
Single	16	16.0
Married	74	74.0
Divorced	4	4.0
Widow/Widower	6	6.0
Total	100	100
Religion		
Islam	46	46.0
Christianity	53	53.0
Traditional	1	1.0
Total	100	100.0
Household size		
1-3	24	24.0
4-6	64	64.0
7-9	12	12.0
Total	100	100.0
Mean	5	
Education		
Primary	16	16.0
Secondary	35	35.0
Adult Education	4	4.0
Tertiary	29	29.0
Vocational	16	16.0
Total	100	100.0
Experience		
<1	5	5.0
1-4	44	44.0
5-8	33	33.0
9-12	9	9.0
12 and above	9	9.0
Total	100	100.0
Mean	5.6	
Duration/day		
≤ 5	16	16.0
6-10	49	49.0
11-15	35	35.0
Total	100	100.0
Mean	9	

Source: Field Survey, 2017



Table 2: Level of participation of the respondents in the various activities involved in fish smoking process

Job	Often		Seldom		Don't	
	Freq.	%	Freq.	%	Freq.	%
Weighing	70	70	9	9	21	21
Sorting	79	79	15	15	6	6
Stunning	49	49	27	27	24	24
De-scaling	24	24	42	42	34	34
Degutting	74	74	8	8	18	18
Washing	86	86	9	9	5	5
Brining	29	29	39	39	32	32
Folding	80	80	16	16	4	4
Smoking	95	95	1	1	4	4
Cooling	46	46	31	32	23	23
Packaging	71	71	13	13	16	16
Loading	53	53	26	26	21	21
Marketing	90	90	8	8	2	2

Source: Field Survey, 2017



Table 3: Hazards Associated with Fish Smoking

Responsiveness	MAH(%)	MIH(%)	NH(%)	Mean	Rank
Physical/Work Hazards					
Accidental knife cut during work	63	21	16	2.47	2nd
Physical stress due to work fatigue	52	46	2	2.50	1st
Vibration	22	47	31	1.91	7th
Excessive work load	25	55	20	2.05	5th
Prolong standing	46	34	20	2.26	3rd
Verbal abuse	48	24	28	2.2	4th
Excessive mental and visual demand	33	37	30	2.03	6th
Strenuous work	15	59	26	1.89	8th
Health Hazards					
Body pain	62	29	9	2.53	1st
Respiratory disease due to smoke	30	27	43	1.87	6th
High body temperature	42	33	25	2.17	3rd
Gastrointestinal problem	29	38	33	1.96	5th
Skin disease	14	49	37	1.77	9th
Headache	56	21	23	2.33	2nd
Swelling ankles	23	35	42	1.81	8th
Itchy eyes	42	28	30	2.12	4th
Hoarseness	22	40	38	1.84	7th
Environmental Hazards					
Noise	25	49	26	1.99	4th
Radiation	23	44	33	1.90	5th
Poor ventilation	44	38	18	2.26	1st
Poor illumination	26	49	25	2.01	3rd
Poor posture	42	29	29	2.13	2nd

Source: Field Survey, 2017.

Note: MAH–Major Hazards, MIH–Minor Hazards and NH–Not Hazards

Table 4: Employer's Responsiveness Towards Hazard

Responsiveness	Promptly (%)	Rarely (%)	Never (%)	Mean	Rank
Payment of hazard allowance	34	39	27	2.07	3rd
Payment of treatment bills	28	37	35	1.93	4th
Provision of protective equipment	83	13	4	2.79	1st
Regular hazard education	41	44	15	2.26	2nd
Worker's health surveillance prog.	28	26	46	1.82	5th
Worker's health insurance scheme	15	37	48	1.67	6th

Source: Field Survey, 2017



Table 5: Chi-Square Result of Hypothesis Testing

Jobs	χ^2 - value	P-value	Decision
Weighing	96.429	0.020	S
Sorting	92.346	0.038	S
Stunning	1.134	0.001	S
Descaling	1.070	0.003	S
Degutting	1.033	0.006	S
Washing	1.183	0.000	S
Brining	1.042	0.005	S
Folding	1.209	0.000	S
Smoking	1.805	0.000	S
Cooling	1.120	0.001	S
Packaging	1.126	0.001	S
Loading	1.102	0.002	S
Marketing	95.278	0.024	S

Source: Field Survey, 2017

Table 6: Pearson Correlation Matrix Result of Hypothesis Testing

Jobs		PH	HH	EH
Weighing	r	0.317	0.305	0.25
	Sig	0.001	0.002	0.004
Sorting	r	0.022	0.008	0.158
	Not sig	0.825	0.936	0.117
Stunning	r	0.369	0.350	0.276
	Sig	0.001	0.001	0.005
Descaling	r	0.418	0.463	0.330
	Sig	0.001	0.001	0.001
Degutting	r	0.329	0.236	0.280
	sig	0.001	0.018	0.005
Washing	r	0.011	0.058	-0.019
	Not sig	0.915	0.564	0.851
Brining	r	0.259	0.397	0.034
	sig	0.009	0.000	0.739
Folding	r	0.189	0.062	0.112
	Not sig	0.060	0.538	0.267
Smoking	r	0.289	0.186	0.100
	sig	0.004	0.063	0.178
Cooling	r	0.394	0.453	0.271
	sig	0.001	0.001	0.006
Packaging	r	0.103	0.074	0.016
	Not sig	0.306	0.464	0.878
Loading	r	0.207	0.273	0.225
	sig	0.039	0.006	0.025
Marketing	r	0.111	0.138	0.005
	Not sig	0.269	0.171	0.962

Source: Field Survey, 2017.

Note: PH- physical hazard, HH- health hazard, EH- environmental hazard, r- pearson correlation and sig- significant value



ASSESSMENT OF THE ATTITUDE OF RURAL HOUSEHOLD ON FEMALE CHILD IN SURELERE LOCAL GOVERNMENT, OYO STATE NIGERIA

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Abstract

Preference for a particular gender is derived from the supposed values of that particular gender to the parents and to the society. This study analyzed the attitude of Rural Farm Family on the female child in Surulere Local Government Area (LGA), Oyo State. The specific objectives were to: identify the roles of female children among rural farm families, examine the attitude of rural farm families towards female children and to investigate the challenges facing the female children among rural farm-families. Multistage sampling technique was used to select 80 respondents on whom a structured interview schedule was administered. Descriptive statistics (frequency count, percentages, mean, weighted mean score) and inferential statistics (Chi-square) were used for data analysis. The mean age of respondents was found to be 46 years. Major challenges faced by female children were too much house chores, cultural beliefs of male superiority over the female, most parents prefer the male child to the female. The society's preference for female children were female children are helpful in domestic chores, female children are symbol of honor in marriage, they are seen as a second citizen in the family and society and a female child is a property of another family. A positive and significant relationship exists between the preparation of food ($X^2 = 29.600$), hawking of farm produce ($X^2 = 69.700$), doing house chores ($X^2 = 70.375$), being used as sales representative ($X^2 = 54.600$), planting of crops ($X^2 = 22.625$) and the perception of rural farm families. Based on the findings, the study concludes that the perception of the rural family on the female child is being restricted to some extent based on the biological status. Therefore, concerted efforts should be made through the media and continuous education to change this social malady so as to allow both sexes to make effective use of their potentials since both genders are crucial factors in the development of the society irrespective of their biological differences.

Key words: Female, Attitude, Child, Rural, Farm-families

INTRODUCTION

The preference for a male child cuts across caste and class lines, and this is so obvious that even before the girls were born, they are being discriminated by the society. The United Nation Children's Fund states that with the availability of new technologies, suffering of female gender is extended from womb to tomb. Today with technological advancement in medical diagnosis, technology has put into practice to identify the sex of the child before birth and selective abortion is done if found to

be female (Badia (2004). Edowor (2011) reported that the preference for a particular sex is derived from value or benefits of that particular sex to the parents. In many parts of Nigeria, male children are valued for their roles in retaining or perpetuating family name, staying permanently in or near family compound or residence, provision of old-age security and serving as a source of defense and social prestige to parents while on the other hand, female children particularly assist their mothers in a range of household chores including



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cooking, washing plates and clothes, sweeping and cleaning of the house as well as baby minding. It was also confirms that craving for sons causes parents to have many children in the bid to have at least a son to perpetuate their family name and also to inherit family property Parent's perceptions of these benefits of male and female children influence their attitudes towards the male and female children. However, the discrimination against the female continues as the child grows older - first in the form of smaller rations of food and nutrition (especially for higher-order females) and later in the form of fewer schooling opportunities relative to boys (Sharma, 2015). In some cases, the desire for male child in the society is so apparent that parent even terminates pregnancy before it is born due to sex Focus (2004).

It is worth noting that perception of parents toward female child is triggered by traditional beliefs and practices which are often at the root of "gender gap" Muller (2000).

However, education, which has been described as an eye opener by Amaele (2011) has brought changes in the attitude of parents on the female child. Even though the traditional roles of female children and women still persists in several spheres, changes are beginning to occur in parents perception on the value of daughters and the status of women in some parts of the world due to their educational status. These changing perception are altering the attitudinal disposition of parents towards girl children in general and girls' education in particular. Despite this advancement, in many developing countries, daughters are been withdrawn from schools at puberty, for fear of unwanted pregnancy, and are married off early to husbands they do not readily want Muller (2004).

Furthermore, Parveen (2007) confirms that rural areas are supposed to be the root cause for gender discrimination. It is obvious that among rural families, attitude towards female child education are directly

associated with cultural beliefs and values such as believing the female child is another person's property. Girls' education continues to lag behind boys' education in most developing countries, with estimates of 93 million children out of school and approximately 80% of these children living in South Asia or sub-Saharan DFID (2005) and UNICEF (2006). The society consider the female child to be unequal with the male child based on her biological status. The female child is seen as inferior and a liability to the rural families. It is therefore important to ascertain rural farm families' perception on female child in Surulere Local Government Area, Oyo state, Nigeria.

The study therefore (i) describes the socio-economic characteristics of the respondents; (ii) identify the roles of female children among rural farm families; (iii) examine the attitude of rural farm families towards female children; (iv) investigate the challenges facing the female children among rural farm families and (v) examine the relationship between roles of female children and the perception of rural families toward female children.

METHODOLOGY

The study was carried out in Surulere Local Government Area of Oyo state, Surulere local government is one of the 33 local government Area in Oyo state, Its lies in the savannah zone of the country , in the North west zone of Oyo state Oyo State (Ayanwuyi et al 2007) . The Population of the study Comprises all rural household in Surulere local government of Oyo State. A two-stage sampling technique was used for the study. 8 rural communities were purposively selected based on their rurality which includes Onikeke, Bale-Oba, Ijado, Baasa , Ayetoro, Idi-opele, Maya and Okiti. The second stage involve random selection of 10 respondents from each community. Thus a total of 80 respondents were selected for the study. Data were collected through structured questionnaire and interview guide. Descriptive statistics



were used to describe the socio-economic characteristics of the respondents and roles performed by female children. Attitude of the rural families toward female children was measured by asking the respondents to indicate their response out of a listed attitudinal statement by a four point Likert scale of Strongly agree, Agree, Disagree and Strongly disagree.

RESULTS AND DISCUSSION

Socio- economic characteristics of the Respondents

The results in table 1 shows that about 61.3 percent of the respondents was male while 38.7 percent were female. The mean age of the respondents is 46 implying that the respondents were in their active age, this concur with the findings of Oladosu and Okunade (2006) in a study in Oyo-state which stated that only the involvement of agile and vibrant middle age who are energetic, creative, innovative, productive and committed can bring about the desired result in agricultural development through the involvement of female child. About 65 percent of the respondents were married with 11 as mean years spent in school by the respondents. The mean house hold size was found to be six persons with the female children having a mean of four persons among rural families in the study area. This implies most rural families have female children in their household who uses the female child as a house chores workers. From early morning to late night girls are busy in house hold work like cleaning the floor, bringing water from well/hand pump, washing clothes, making food & animal rearing etc. These practices shows that the girl child face discrimination in her home. Also about 67.5percent of the respondents practice farming as primary occupation which implies that Agriculture is a mainstay

Roles of Female Children among Rural Farm Families

The results on table 2 shows that all (100%) the respondents believe that

sweeping, cleaning of the house, fetching of water and washing of clothes respectively are roles of female children. About 98.8 percent each of the respondents indicated preparation of food, taking care of the family members and feeding the domestic animals respectively are roles of female children in the home. Carrying harvested produce from farms and hawking of farm produce respectively was 95.0 percent while 90.0 percent of the respondents indicated used as sales representative and 51.3 percent of the respondents revealed planting of crops as a role of the female child among rural farm families. This result conform to the study of Hemraj and Abdul Azeez (2017) who states that in African Majority of parents (including mothers), believes that house hold work is primarily the responsibility of girls, so they have to do it first. From early morning to late night girls are busy in house hold work like cleaning the floor, bringing water from well/hand pump, washing clothes, making food & animal rearing etc.

Attitude of rural farm families towards female children

Table 3 shows the ranking order of the attitude of rural families towards female children. Respondents believe female children shows love and care in the home and society ranked first with weighted mean score of 3.74, followed closely by respondents claim female children are helpful in domestic use and also female children are symbol of honor in marriage with wms of 3.61 respectively. Next to it is female children will later change their names with wms of 3.43 Other are in the following order; female children are easier to raise as children than male children (wms=3.05), female are socially seen as second in command in the society and family (wms=2.79), female children are properties of another family (wms=1.38), female children are not recognized within the society(wms=0.91) while the female children cannot compete with a male in



any social activity or administrative position ranked least with 0.61. This results implies that even though culture still holds its place with regards to the female child, changes in the attitude of the rural household on the female child is seen even though it is not in the geometric rate but it is not as it used to be years back, This may be due to education and socialization

This results is in agreement with the findings of Navtej and Naimatullah (2014) that in terms of women's participation in public life, the presence of women in the public sphere is limited, with little evidence of participation in formal political activities Muller (2000) also confirm that changing perception are altering the altitudinal disposition of parents towards female child in general and girl's education in particular , keeping girls at home to supplement family welfare by working and caring for siblings and household.

Challenges facing Female Children among Rural Household

Table 4 shows that 100 percent of the respondents reported that the house chores are more on the female child as a challenge, next to it is 95.0 percent of the respondents claimed culture belief male children are socially important than female children followed is 92.3 percent of the respondents who claimed the education of the female child is always at stake compared to their male counterparts others are female children are expose to sex abuse which is 86.3 percent, 68.8 percent respondent claimed parent prefer male children to female children especially fathers, female children are exposed to early marriage with 41.3 percent respondents, Female children have low self-esteem with 33.8 percent respondents, female children are seen as second citizen compared to their male counterpart with 22.5 percent respondents.

The above results indicate that majority of the respondents have one challenges or the other that militate against perception of female child among rural families and this

is in support of the findings of Sharma, (2015) which stated that this hierarchy of inequality male and female children is reinforced by norms, values, culture, caste, class, and religion in our society.

Relationship between roles performed female children and Attitude of female children by Rural household

The results in table 5 indicates that there is a significant relationship between some roles perform by the female children such as preparation of food ($X^2 = 29.600$) hawking of farm produce ($X^2 = 69.700$) house chores ($X^2 = 70.375$) sales representative ($X^2 = 54.600$) planting of crops ($X^2 = 22,625$, Fetching of water ($X^2 = 44.800$) and perception of female children by rural farm families. This result implies that the roles perform by the female children are been influenced by the attitude of rural households on female children.

CONCLUSION AND RECOMMENDATIONS

This study concludes that gender equality among the male and female children may seems difficult but with socialization process which has to do with the consent, mindset and the involvement of the people in the society, this can be achieved. Also rural households perceived female children as useful in household chores and also seen as a symbol of honor in marriage. It was also revealed that the attitude of the rural house hold on the female child is gradually changing even though it is not at the geometric rate. This implies that both male and female youths in Agriculture are important factors for the sustainability of the sector

The study therefore recommends that socialization on gender mainstreaming should be put in place at household level through continuous education. This will enable the female child to utilize her potentials for the development of the society without being discriminated



REFERENCES

- Amaele, S. (2011): *History of Education: from Ancient to Contemporary Era: The Global and Nigerian Perspectives*. Port Harcourt: Henry Publications Coy, p. 6 and 7.
- Ayanwuyi, E., Akinboye, O.A and Olaniyi, O.A(2007): Youth Participation in Rural Development Project in Surulere Local Government Area of Oyo State Nigeria, *Medwell Journals 2(3) 312-317*
- Bardia A, Paul E, Kapoor SK, Anand K. (2004) Declining sex ratio: Role of society, technology and government regulation in Faridabad district, Haryana. *National Medical Journal India 17:207 -11.*
- Edowor W. (2001): The impact of development strategies on the rural poor: *Trends in applied science research 2(3): 241-245*
- Focus (2004) Population Environment Development: A Bulletin of Population Foundation of India : 2004 7.
- Muller N.K (2000): Changing Perception and attitudinal disposition of parents towards girl children in general and particular. *Oxford world view Publishing 18(2-5)*
- Oladosu I.O and Okunade E.O (2004): Attitude of undergraduate students towards Agriculture as a future career:: A case study of Two Nigerian Universities :*International Journal of African culture and ideas Vol 4. No 1pg 82-9*
- Parveen, S. (2007). Gender awareness of rural women in Bangladesh. *Journal of International Women's Studies, 9(1-3).*
- Sharma, S. (2015). Gender equality and women empowerment. *Kurukshetra A Journal on Rural Development, 63(5-7)*

Table 1: Socioeconomic Characteristics of the respondents. N=80

Characteristics	Percentage	Mean
Gender		
Male	61.3	
Female	38.7	
Age		
≤ 30	18.7	
31-40	27.5	46
41-50	23.7	
51-60	10.0	
Above 60	20.0	
Marital status		
Married	65.0	
Widow	17.5	
Separated	2.5	
Divorce	15.0	
House hold size		
1-5	21.3	
6-10	76.4	6
Above 10	2.5	
Number of Female children		
1-3	68.8	
3-6	21.3	4
Above 6	9.9	
Primary occupation		
Farming	67.5	
Trading	20.0.	
Civil servant	6.3	
Artisan	6.3	

Source: Field survey, 2017



Table 2: Distribution of the Respondents by Roles of Female Children among Rural Farm Families

Roles of female children	Percentage
Preparation of food	98.8
Sweeping and cleaning of the house	100
Taking care of the family members	98.8
Carrying harvested produce from farms	95.0
Hawking of farm produce	95.0
Used as sales representative	90.0
Feeding domestic animals	98.8
Fetching of water	100
Planting of crops	51.3
Washing of clothes	100

Source: Field survey, 2017

* Multiple responses

Table 3: Rank order of Attitude of rural households towards female children

Attitudinal statement	WMS	Ranking
Female children shows love and care in the home and society	3.74	1 st
Female children are symbol of honor in marriage	3.61	2 nd
Female children are helpful in domestic use	3.61	2 nd
Female children will later change their names with	3.43	4 th
Female children are easier to raise as children than male children	3.05	5 th
Female are seen as second in command in the society and family	2.79	6 th
Female children are properties of another family,	1.38	7 th
Female children are not recognized within the society	0.91	8 th
Female children cannot compete with a male in any social activity or administrative position	0.61	9 th

Source: Field survey, 2017

WMS=Weighted Mean Score

Table 4: Rank order of Challenges facing female children among rural household

Challenges	Percentage
House chores are more on the female child ,	100
Culture belief male children are socially important than female children	95
Education of the female child is always at stake compared to their male	92.3
Female children are expose to sex abuse	86.3
Parent prefer male children to female children especially fathers	68.8
female children are exposed to early marriage	41.3
Female children have low self-esteem	33.8
Female children are seen as second citizen	22.5

Source: Field survey, 2017



Table 5: Results of Chi-Square Analysis Showing the Relationship between Roles Performed By Female Children and the Attitude of Rural Household

Roles of female children	X²-value	P – value	Df
Preparation of food	29.600	0.000	31
House chores	70.375	0.000	3
Taking care of the family members	67.56	0.000	14
Carrying harvested produce from farms	0.050	0.823	1
Hawking of farm produce	69.700	0.742	7
Used as sales representative	54.600	0.000	2
Fetching of water	44.800	0.000	3
Planting of crops	22.625	0.000	2

Source: Field survey, 2017



ECONOMICS OF UNPREDICTABLE FOOD PRICES AND YOUTH UNEMPLOYMENT: EVIDENCE FROM VOLATILITY IN CEREAL AND OIL PRICES IN NIGERIA

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Abstract

Five years average of youth unemployment rate, after the 2008 global financial crisis, increased by 4.3% above five years average before the crisis. After the crisis, more people became trapped in hunger and poverty in the developing countries. The consensus among scholars is that persistent food price volatility (FPV) hurts food producers, discourages and distorts production. Young agripreneurs caught up in this web have been discouraged from further investment especially due to difficult hedging and consumption smoothing. Experts are of the opinion that FPV varies across countries hence, mitigating strategies are also different. In Nigeria, various policy strategies adopted to address predictable changes in food prices have not bridged the gap between domestic food production and demand. The resulting effect is the unrestricted transmission of unpredictable price signals along agricultural supply chain hence, risk averse investors are skeptical of either investing or increasing investment. Therefore, an adequate understanding of both predictable and unpredictable price dynamics can help in developing appropriate policy and coping strategies to mitigate against transmission of risk along the food value chain. Using the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) variants and Granger Causality, the paper presents volatility behavior in cereals and oil prices, the relationship between price returns and risk, welfare cost of price volatility, bi-causality among food price volatility, agricultural growth and youth unemployment rate. Data on deflated monthly producer price indexes of cereals and oil, agricultural growth and youth unemployment rate from 2007M1 to 2016M10 is selected for the study.

Key words: Cereals and oil price volatility, Agricultural growth, Youth unemployment, GARCH variants and Granger Causality.

INTRODUCTION

In the last two decades, the effect of food price volatility (FPV) has been hotly debated (Piot-Lepetit, 2011; FAO et al., 2011; FAO, 2011; GHI/IFPRI, 2011; Rabobank, 2011; Assefa, Meuwissen and Lansik, 2014; Serra and Zilberman, 2013; Kalkuhl, Braun and Torero, 2016). The discourse on FPV became pronounced again after the global financial crises in 2008 and 2011. According to statistics obtained from World Development Indicators (WDI), five years average of youth unemployment rate, after the 2008

global financial crisis, increased by 4.3% above five years average before the crisis. After the crisis, more people became trapped in hunger and poverty in the developing countries (Elver, 2015). The consensus among scholars is that persistent food price volatility (FPV) hurts food producers, discourages and distorts production (Timmer, 1989; Aksoy and Hoekmann, 2011; and Sehkar, Roy and Bhatt, 2017). The effect is phenomenal across all economic sectors but that of food



and agricultural sector is of serious concern in Nigeria and other low income countries because of the centrality of food in household economy. Bellemare (2014) opines that beyond the effect it has on both consumers and producers, price volatility predisposes the economy to social crises. On the other hand, when food price volatility results in rising food prices (inflation rate), it threatens food security more in sub-Saharan Africa (HLPE, 2011; Minot, 2014; and Sehkar et al., 2017). According to Morales-Opazo, Garrido, Demeke, and Bardají (2014) persistent FPV transfers income from the net food buyers (especially the middle class and the poor farmers) to the net food sellers (wholesaler and producers). Similarly, Lee and Ndulo (2011) highlight the effects of price spikes and volatility on investment and unemployment. Several studies have remarked the culpability of unstable demand and supply for food as a factor influencing frequent changes in food price movement (Rezitis, and Stavropoulos, 2009; and Rezitis and Sassi, 2013). It implies in the absence adequate stabilization policy strategies, FPV may further complicate investment climate. Consequently, increased unemployment as a result of low investment has further deepened the scourge of poverty and hunger in sub-Saharan Africa –SSA (Lee and Ndulo, 2011).

Besides the fact that food price volatility affects food security, its effects on general welfare of the most vulnerable groups has raised concern in many fora where poverty and food economy have been discussed (FAO, 2010; Coyle, 1992; Haile et al., 2014). FPV induces market instability discourages investors and makes planning generally difficult (Coyle, 1992). In order words, it causes inefficient market system which promotes low productivity and poor allocation of productive resources. Martins-Filho (2011) corroborates that with a validated empirical opinion, input allocation creates losses that rise with price

uncertainty. Recent studies have shown that both the effect and those factors that predispose food market to price instability are properly understood if appropriate coping strategies are to be developed. According to United Nations of Economic and Social Affairs – UN-DESA (2015), it about a profound way to manage the effect of the growing global population. Findings have revealed that food demand may averagely grow by 3.6 percent per annum till 2050 (UN-DESA (2015)). This means that if uncertainty in the food market is not well managed, the shocks in food supply may be too frequent and meeting household food demand will remain a tough challenge.

In Nigeria, agriculture provide direct and indirect jobs for over 70% of her population (Mafimisebi, 2012; Fatuase et al., 2016) and many of this farming population operate at the subsistence level (Apata, Folayan Apata and Akinlua, 2011). The sector is considered strategic for many reasons including its contribution to Gross Domestic Product (GDP), employment generation, wealth creation, social stability, food security, food self-sufficiency and poverty alleviation. Despite the widely acclaimed inherent potentials in agriculture to help address the problems of food insecurity and unemployment in Nigeria, the country is still menaced with food price instability and increasing youth unemployment. According to World Development Indicator (2018), employment in Nigerian agricultural sector has declined from 58% in 1991 to 37% in 2017. It may be possible to assume that this decline is as result of migration of labour from agriculture to the industrial sector but that is difficult to prove where the industrial sector has not expanded commensurably. In fact, the increasing rate of unemployment punctures that thought. Other reasons alluded to the to the increasing migration away from farming are: drudgery, low returns on investment and the high risk embedded in food and



agricultural commodity market (Haile, Kalkuhl and von Braun, 2014). It is expected that such scenario would create shortfall in productivity and supply. National bureau of Statistics reveals the trend in contribution of agricultural sector to national economy thus: it declines from a little above 40% in 2010 to less than 24% in 2018. Agricultural raw materials exports and food exports of total merchandise exports also decline from 7.2% and 5.3% to 0.4% and 1.9% respectively.

Despite the discouraging trend as shown above, the situation is more disturbing with the increasing rate of youth unemployment. Between the period, 2010 -2017, the proportion of unemployed youth in total labour force has fluctuated between 10.9% and 8.5%. During the same period, total employment in agriculture has declined from 44.6% to 27.9% at a period that is more rewarding to deploy all available resources to optimize production both in agricultural and non-agricultural activities. Policies and programmer directed towards promoting the sector to meet its mandate on food security, employment generation, supply of agricultural raw materials to the industries and contributions to GDP have yet to yield the desired results. Available evidences are available to show that if risk in agriculture are not properly managed using risk diversifying techniques and management tools, it may escalate the current tight production and agribusiness in low income countries (FAO et al., 2011; and Assefa et al., 2014). This risk, measured by the degree of food price volatility, has also caused dwindling economic growth (Prakash, 2011); social, economic and political consequences (Pierre, Morale-Opazo, Demeke, 2014); and negative externalities (Timmer and Dawe, 2007). These effects percolate down to alter employment dynamics in agriculture and even change the consumption behavior of especially the pro poor households (Pierre et al., 2014). However, Coyle (1992) finds that high

price volatility reduces production and supply. It can therefore be extrapolated that once output declines, more jobs are likely to be lost as investors will find it difficult to invest where there is persistent price volatility (Coyle, 1992).

Therefore, this study attempt to investigate (1) the trade-offs between price returns and risk; (2) imported rice spillover effect on the price volatility of local rice; (3) welfare effect of local rice price volatility; and (4) the causality among price volatility of rice and oil; agricultural growth and unemployment rate.

Conceptual Framework and Methodological Issues in Measuring Volatility

Rice is one of the highly consumed staple food across the globe including Africa and Nigeria. For the purpose of this study, we classified rice into imported (parboiled) rice and local (Ofada rice, Abakaliki rice and other locally produced paddy rice). In Nigeria, the popularity of rice as a widely acceptable food item to most households irrespective of their socio-economic divide is not unconnected to the rapid urbanization and ease of preparing it for food (Agunbiade, 2013; Akanji, 1995; Akpokodje et al., 2001). The dynamic nature of rice market in Nigeria calls for caution. The rice market in Nigeria is dominated by local producers and importers. Local production is largely driven by smallholder farmers still farming using obsolete mills in addition to application of traditional agronomic practices. Most households in Nigeria spend more on imported (parboiled) rice than the locally produced rice. Between 1995 and 2015, the volume of local rice production and imported rice has averaged 2.1 tonnes and 6.2 tons respectively (Federal Ministry of Agriculture and Water Resources [FMAWR], 2008; and United States Department of Agriculture [USDA], 2016). According to Ogundele and Okoruwa (2006), average per capita consumption of rice is 22kg between the



period, 1995 – 2000, and it has consistently grown well above 7.3% since then. This scenario presents the view that the demand for rice has continued to outweigh supply (domestic and import) until 2015 when concrete policy intervention became inevitable. Rice, more than other cash crops, gives higher income to farmers in Nigeria (FAO, 2018) yet the country is ranked among the highest importer of rice. This exposes the domestic market to spillover from international rice markets. Government policy to restrict importation of rice has been implicated as one of the causes of spike of imported rice from about ₦12,000 (\$24) to about ₦18,000 (\$36) per 50-kg in 2017 (Global Agricultural Information Network [GAIN], 2017). In 2017/2018, consumption is estimated to fall from 5.0 million tons in 2016/2017 to 4.8 million tons due to decline in purchasing power (GAIN, 2017). The aggregate of demand and supply dynamics and other production subtleties are the basis for price volatility of rice in Nigeria.

However, theory suggest that the presence of stylized properties such as volatility in financial time series (Cont, 2000), modeling such behaviour with OLS will always give a spurious conclusion. Some food price series exhibit complex dynamic system with visible volatility and amplified noise - non-constant variance (Tsay, 2005). In the literature, various methods have been used to measure price volatility including standard deviation and Coefficient of Variation (CV) but these do not explicitly reveal the volatility clustering typically exhibited by financial time series data (Kim *et al.*, 2003; Kellard & Wohar, 2006). To achieve that therefore, a model that accommodates a judgmental trade-off between attributes of variability to the trend itself and to variation about the trend.

This study premised its investigation on how farmers and traders form market expectations. Evidences abound in the

literature how market participants rationalize expectations on historical trends of past realizations in the market (Moledina, Roe and Shane, 2014). The intuition therefore is that, a good understanding of the price movements will help prepare farmers, traders and even policy makers to take appropriate adaptive strategies required to cope with anticipated risk in the market

Therefore, Engle (1982) suggested the Autoregressive conditional heteroscedasticity (ARCH) model as an alternative to the standard time series treatments. ARCH model exposes the relationship that can exist between conditional variance of residuals and the addition of all the squared residuals in the recent past, and because many parameters are required, large lag length is also required (Rydberg and Shephard, 2000). Bollerslev (1986) and Taylor (1986) at different times extended the ARCH model into a generalized ARCH (GARCH) model. This is simply to achieve parsimony of the model. GARCH model defines the conditional variance as a function of its own lagged realizations of the residuals and lagged variance. In view of these challenges, other variants of GARCH model specifically designed to include asymmetric and leverage effects of estimated parameters. EGARCH has proved reliable enough to address some of the challenges confronting GARCH model. For instance, to achieve non-negative conditional volatility through the logarithmic transformation of the model specification.

Economists have curiously questioned the relationship that exists between risk (market uncertainty) and expected returns. Arising from this intellectual debates are arrays of findings validating the usefulness and high performance of GARCH in Mean (GARCH-M) in confirming the correlation between volatility and expected returns (Tudor, 2008), Contrary to the established



theory, Panit (2012) study failed to establish that increase in conditional volatility lead to rise in future returns for seven Romanian companies traded on Bucharest Stock Exchange and three market indices, during 1997-2012. Literature on uncertainty in food price movement and future returns is very scarce. To the best of the knowledge of the authors, no information is available on how unpredictable cereal price movement correlates with future returns.

Increasing efforts have been made to unravel the implication of persistent volatility in price process. According to Poterba and Summer (1986), the persistence scale is $0 < x < 1$ where $x < 0.5$, it implies that persistence is low but $x > 0.5$, it implies volatility persistence is high. At high persistence, it means that the shocks to price movement will decay off very slowly. That is, it will take pretty long time before the price returns back to the mean price value after the sudden spike. A high degree of price volatility persistence in shocks to conditional variance is an indication that the perception about low return will linger for a longer period (McAleer et al., 2007). Interpreting that in another way, it means that higher degree of shocks increases persistence in volatility and the higher the potential increase in food price inflation rate (Sehkar, Roy and Bhatt, 2017). The rising food inflation in Nigeria is troubling especially that of rice being the most important staple food among the rural households. According to Elis and Manda (2012), there has been tremendous increase in the consumption of cereals in sub-Saharan Africa and the fast growing population will continue to put pressure on production. Therefore, to achieve steady growth in cereal production (supply), there is need to create a relatively more predictable market where economic agents are more comfortable at operating. Understanding the rice price volatility dynamics will help increase the policy options required by government to stabilize

price with a view to enhancing the welfare of market participants.

Price volatility dynamics (persistence and leverage effects) have been further influenced by dynamics from exogenous markets. This spillover effects along value chains and across markets have been subject of intellectual debates (Assefa et al., 2015). Previous studies have attempted to assess the volatility transmission effect of oil and exchange rate on food/agricultural commodity markets have been investigated using various methods mentioned above (OECD, 2009; Gardebreek and Hernadez, 2012; Kafle and Kennedy, 2015; Baumeister and Kilian, 2016; Nwoko, Aye and Asogwa, 2016;). Interestingly, among several empirical methods that have been deployed to examine the volatility transmission effects between markets, the family of GARCH and MGARCH model are usually preferred because of its flexibility and strength to separate predictable components of price before measuring its volatility (Engle, 2001 Jordan et al., 2007; and Morales-Porazo et al., (2014). The totality of these effects sum up to alter the household welfare balance negatively. That is, increase in food price volatility leads to rising inflation rate which reduces access to sufficient household food needs. Consequently, a compromised has to be reached by trading off food and nutritional needs to achieve stability.

It is in this interest that welfare effects of price volatility have been investigated and the findings are well documented in the literature. Sassi (2014) investigated the conditional and unconditional maize price volatility in Malawi domestic economy market levels and its related welfare costs. The empirical analysis applied an ARCH/GARCH approach using monthly data from January 1991 to March 2013. The welfare cost was also estimated via the Lucas formula. Results from the study underscores the importance of the domestic factors in explaining maize price volatility



and of seasonality in affecting the unconditional variance and welfare cost. Using data obtained on international prices of some selected series (1960 – 2001) from International Monetary Fund’s Financial Statistics, Moledina et al., (2004) justified inconsequential benefits of eliminating low food price volatility in developed countries. Contrary to the findings of Moledina et al., (2004), Bellemare et al., (2013) using data collected on rural Ethiopian households, it was established that eliminating price volatility has welfare benefits. The study concluded that the welfare gains from eliminating price volatility are increasing in household income. However, the study suggested that food price stabilization deployed to achieve the welfare gain is a regressive policy.

Lucas (2003) defines welfare cost of volatility (λ) as the amount that the consumer must be compensated against risk in consumption. It is the utility level where consumer is indifferent to both deterministic and risky stream adjusted by compensation. However, evidences have shown that risk averse consumers usually show preference for a deterministic consumption stream over a risky stream with the same mean. According to Moledina et al., (2004) and Lucas (2003), consumers in food markets across developing countries are risk averse.

Similarly, there are concerns that beyond the correlational relationship that exists Granger Causality test is usually deployed to ascertain the causal direction among the selected variables (Granger, 1998). This test is carried out using VAR framework such that the multivariate model is extended in order to test for simultaneity of all included variables.

Data and Econometric Procedure

The study was carried out in Nigeria. Secondary and time series data were obtained from the websites of National Bureau of Statistics -NBS, World Bank

(World Development Indicators) - WDI and Energy Intelligence Group-EIG/Organization of Petroleum Exporting Countries - OPEC. Data were obtained on monthly price index of imported rice (IMPRI) and monthly price index of local rice (LOCRI) cover between the period, 2007M1 – 2017M11 from NBS, monthly crude (Brent) oil price (BOP) spans over the period from, 1993M1 – 2017M12 from EIG/OPEC. In addition to the above, data were also sourced on annual agricultural growth (Agriculture, Value Added, at constant 2010 US\$) - AGDP and unemployment rate (%) in Nigeria from WDI.

Model Estimation and Empirical Analysis

In investigating the volatility behavior in the price series, we generate returns for the price series as follows: Returns (R) = $\log(P_t/P_{t-1}) * 100$ where P_t represents price value at month (t) and P_{t-1} represents the price value at (t-1). The procedural tests are divided into pre-diagnostic and post-diagnostic tests. The pre-diagnostic test started with a unit root test to ascertain the stationarity or otherwise of the returns series. Upon successful rejection of null hypothesis, we confirm the stationarity of the returns series. This is followed up with ARCH-LM test to diagnose the presence of volatility in the returns series. Upon successful rejection of null (there is no ARCH effect in the series), we proceeded to model the volatility behavior in the price returns series using GARCH and EGARCH. Each of these is a two-stage in one equation (mean and variance equations). These equations are posted below:

$$R_{it} = c + \theta_1 R_{it-q} + \varepsilon_{it}, \dots \dots \dots (1)$$

$$R_{it} = c + \theta_1 R_{it-q} + \theta_2 D_i + \varepsilon_{it} \dots \dots \dots (2)$$

$$R_{it} = c + \theta_1 R_{it-q} + \theta_2 D_i + \theta_3 \sigma_{it}^2 + \varepsilon_{it} \dots \dots \dots (3)$$

$$\varepsilon_t \sim (0, \sigma_t^2)$$

α_0 is a constant (average of returns over the period), α_1 and α_2 are coefficients of



one period lagged return series and the dummy variable (D) respectively. The dummy variable captures the structural break in returns series. Post and pre structural break dates are coded 1 and 0 respectively.

Model Selection

The study estimated the data using the three distributions (Gaussian normal distribution, t-distribution and Generalized error distribution). At this stage, each of the returns series is modelled with recourse to structural break at the level of mean equation. Selection of the best model for each series is based on the pre-tests suggested by Engle (1982). The major selection criteria are Akaike Info Criterion (AIC), Schwarz Criterion (SC) and Hannan-Quinn Criterion (HQC) as well as maximum Log likelihood ratio (LLR). The rule is that the most efficient model has the least AIC, SC and HQC values. Premised on this, normal distribution is selected to model GARCH in Mean Equation for Brent Oil Price returns while GED is selected for imported and local rice returns series. Furthermore, EGARCH model is considered ahead of GARCH model to obtain model efficiency. Similarly, normal and generalized error distributions are selected to model EGARCH for Brent Oil Price returns and imported rice price returns respectively. Conditional Variance obtained from each of the models (σ_{oprv}^2 and σ_{imprv}^2 for Brent Oil Price and Imported Rice respectively) is considered as exogenous (dependent) variables in the attempt to analyze the spillover effects of Brent oil price and imported rice price returns series.

GARCH in Mean (GARCH-M)

The GARCH-M modelled to capture the trade-off between risk and local rice price returns is expressed thus: The mean equation is as expressed in equation (3) and the GARCH equation is expressed as:

$$\sigma_{it}^2 = \alpha_0 + \alpha_1 \varepsilon_{it-1}^2 + \beta_1 \sigma_{it-1}^2 \dots \dots (4)$$

Spillover between Foreign Exchange Market and Food Markets

This study adapts the EGARCH univariate approach to achieve objective 3. After accounting for both the correlation and volatility clustering properties, the conditional price volatility of imported rice (σ_{imprv}^2) and oil (σ_{oprv}^2) models earlier saved are later fed into EGARCH (1,1) model with a view to estimating the transmission effect of imported price and oil price volatility on price volatility of local rice.

EGARCH conditional variance equation for the exchange rate spillover to food market is stated thus:

$$\log \sigma_{it}^2 = \omega_i + \beta \log(\sigma_{it-1}^2) + \gamma \frac{\varepsilon_{it-1}}{\sqrt{\sigma_{it-1}^2}} + \alpha \left[\frac{|\varepsilon_{it-1}|}{\sqrt{\sigma_{it-1}^2}} - \sqrt{\frac{2}{\pi}} \right] + \delta_1 \sigma_{\text{imprv}}^2 + \delta_2 \sigma_{\text{oprv}}^2 \dots \dots \dots (4)$$

Where ω , β , γ and α are parameters to be estimated. These parameters are defined as follows:

- γ = captures leverage effect;
- $\gamma < 0$ means conditional volatility of i responds to -ve shock more than +ve shock;
- $\gamma > 0$ means conditional volatility of i responds to +ve shocks more than -ve shocks;
- α = captures magnitude of conditional shocks on the conditional variance
- β = Persistence
- $H_0 = \beta_1 = 0$ (No persistence); and $H_1 = \beta_1 \neq 0$
- $H_0 = \gamma = 0$ (No leverage); and $H_1 = \gamma \neq 0$

Welfare Cost of Volatility

Lucas (2003) define the amount that the consumer must be compensated (λ) to be indifferent between the risky and deterministic stream as:

$$\lambda = \frac{1}{2} \gamma \sigma_{it}^2 \dots \dots \dots (5)$$



where the compensation parameter (λ)- the welfare gain from eliminating consumption risk - depends naturally enough, on the amount of risk that is present, σ_{it}^2 and the aversion people have for risk, γ .

To estimate the welfare cost of food price volatility, the mean, maximum and minimum values of the conditional volatility forecast was integrated into the welfare framework designed by Lucas (1987) to gauge and measure the welfare cost of risk behaviour in food prices. According to the literature on this work, the decision threshold is 1, below which the effect of food price volatility is negligible but above the threshold, the effect of food price volatility calls for appropriate price stabilization policy measure to cushion the effects on household welfare.

Expectation: Efficient market proposes no opportunity for risk adjusted profit. Therefore, risk behavior in price is eliminated. That is, the lower the food price volatility, the higher the efficiency of the food market and vice versa.

On the implication of that on welfare: at low price volatility, the welfare impact (cost = λ) of price volatility as estimated from equation (5) is expected to be below the Lucas threshold (1). However, if it is more than 1 then it is sufficiently high enough to alter household welfare and appropriate price stabilization policy will bring social benefits.

Test for Granger Causality

Drawing from Mahdavi and Sohrabian (1989), the equations to estimate the casual relationship among the selected variable (imported rice, oil price and local rice price volatility; agricultural growth and unemployment rate) are specified as follows:

$$R_{it} = \alpha_0 + \sum_{i=1}^m \alpha_1 R_{i(t-1)} + \sum_{j=1}^n \alpha_2 R_{j(t-1)} + \varepsilon_t \dots (6)$$

$$R_{jt} = \alpha + \sum_{i=1}^p \beta_1 R_{j(t-1)} + \sum_{j=1}^q \beta_2 R_{i(t-1)} + \mu_t \dots (7)$$

For each pair of variables considered in the above equations, four hypotheses are set:

- i) $\sum_{j=1}^n \alpha_2 \neq 0$ and $\sum_{j=1}^q \beta_2 = 0$
 (unidirectional granger-causality from R_{jt} to R_{it})
- ii) $\sum_{j=1}^n \alpha_2 = 0$ and $\sum_{j=1}^q \beta_2 \neq 0$
 (unidirectional granger-causality from R_{it} to R_{jt})
- iii) $\sum_{j=1}^n \alpha_2 \neq 0$ and $\sum_{j=1}^q \beta_2 \neq 0$ (bi-directional granger-causality between R_{it} and R_{jt})
- iv) $\sum_{j=1}^n \alpha_2 = 0$ and $\sum_{j=1}^q \beta_2 = 0$ (no causality between R_{it} and R_{jt})

RESULTS AND DISCUSSION

Relationship between Risk and Price Returns Series (Local Rice, Import Rice and Brent Oil Price

The result is presented on Table 1 below. Evidences from the results show that risk (volatility) has significant effects on the future returns on prices of local and imported rice. The positive relationship further proves the apriori expectation that higher risk implies higher returns and vice versa. The import of the findings is that anticipated higher return is expected to create the incentives for risk takers to participate in the production and distribution of both local and imported rice. However, this may not be true for the risk averse producers who may want to consider the opportunity cost of whatever investment they want to make. This result is not sufficiently convenient to conclude that the anticipated future returns will induce increase in unemployment rate. Further investigation is required here to know the proportion of the economic agents in rice market are risk takers and those that are risk averse.



Imported rice spillover effect on the price volatility of local rice;

The output of the price volatility transmission from oil and imported price to that of local rice price is shown on Table 2. The result shows that fluctuations to price imported rice significantly influence price volatility of local rice. This is expected because of the dominant market for imported rice in Nigeria consequently, the price movement of imported rice as espoused by mainly supply dynamics has strong influence in the market dynamics for local rice. Local rice has not been able to compete favourably with the imported rice in terms of finesse of output and the consumers taste is influenced by this. Hence, this is reflected in the price differentials. However, contrary to the findings of Nwoko et al., (2016), the influence of oil price volatility is not significant on the price volatility of local rice. It is only recently local production of rice is gaining momentum. Before now, production of local rice is devoid of modern innovations that allows the use of oil and its derivatives directly or indirectly to such as extent that instability in local rice market can be strongly linked to instability in oil market. It is also striking to note that both the leverage effect and persistence volatility are significantly after the introduction of the conditional volatilities of the prices of oil and imported rice.

Welfare Cost of Food Price Volatility

Table 3 states the result of welfare cost of food price productivity. When the average price volatility is put in the Lucas deterministic formula (adopting the highest level of consumer's risk aversion, $\gamma = 4$), the welfare cost of not eliminating food price volatility in Nigeria is that consumers will, on monthly basis, trade off average of 15.8% and 5.4% consumption of imported and local rice. Since the welfare cost (mean) is higher than Lucas threshold it is reasonable to agree that programmes and

policy targeted at stabilizing the price of rice will be socially beneficial.

The causality among price volatility of rice and oil; agricultural growth and unemployment rate.

Evidences from Appendix 1 show that causality exists in some of the variables considered in the study. Notably, price volatility of imported rice granger cause price volatility of local rice (1% level of significance). At 5% significant level, the trend in Agriculture growth (AGDP) granger cause sudden and frequent change in the price of local rice and youth unemployment rate. At 1% level of significance, risk in imported rice market granger cause youth unemployment rate. The result shows that AGDP and high volatility in imported rice granger cause unemployment rate.

CONCLUSION

The recent debate on food price volatility has further drawn attention of researchers to investigate how such phenomenon affects agricultural growth and youth unemployment rate. The study became imperative in view of the fact that rice production has not been adequately courted by investors during the period under investigation for wide range of reasons. Prominent among the reasons is the influx of imported rice into the country. We suspected that such could predispose the local rice market to some level of price volatility transmitted from exporting countries. Rice is about the most important staple food in Nigeria. It is consumed across all social strata. It is considered that the competitiveness and predictable local rice market can add value to agriculture's contribution to Gross Domestic Product (GDP), creates jobs and fetches some foreign earnings to Nigeria. Above all, it can further enhance the welfare of all participating economic agents in the rice market (consumers and traders). On the other hand, oil price movement has been known to influence global cereal markets



in great deal. Therefore, this study investigates the rice price return and risk trade off, the transmission effects of price volatility of oil and imported rice to local rice market in Nigeria. Furthermore, we also investigated the causality among the above mentioned variables as well as Agricultural growth as measured by agricultural valued added at constant 2010 US\$ and youth unemployment rate. Findings from the study reveal that anticipated risk increases future returns of both local and imported rice. Also, price volatility of imported rice has significant influence on the unpredictable changes in the price of local rice in Nigeria. The study concludes that the welfare cost of not eliminating volatility in the price of both local and imported rice is too high to bear for households hence the advocacy to embrace policy strategies that will enhance higher production of quality local rice and such can guarantee competitive price. As this production horizon increases so thus opportunities for more employment is created. On the causality among the selected variables, the study finds that agricultural growth granger cause youth unemployment and frequent changes in the price of local rice at 5% significant level. Similarly, price volatility of local rice granger cause imported rice at 5% significant level while price volatility of imported rice granger cause youth unemployment at 1% significant level. However, further studies are required to know the direction of relationship and the extent of causality among these causal variables.

REFERENCES

- Adam Prakash, (2011). Safeguarding food security in volatile global markets. Rome: FAO.
- Agunbiade B.O, (2013). Price Co-integration of Imported and Local Rice Markets in Southwest, Nigeria. Unpublished M. Tech. Dissertation, Department of Agricultural and Resource Economics, The Federal University of Technology, Akure, Nigeria. Pp.87.
- Agunbiade B.O., Mafimisebi T.E., and Ikuemonisan E.S., 2015, Pricing Contacts and Price Leadership in the Market For Imported Rice In Southwest Nigeria, Rice Genomics and Genetics, Vol.6, No.5 1-5 (doi: 10.5376/rgg.2015.06.0005)
- Akanji B.O, (1995), Hedonic Price Analysis of the Demand for Grain Crops in Nigeria: The Case of Rice and Cowpea. Ph.D.Thesis, University of Ibadan, Ibadan, Nigeria. Pp. 213
- Akpokodje G., Lancon F. and Erenstein, O, (2001). Nigeria's Rice Economy: State of the Art. A Paper presented at the WARDANISER Nigerian Rice Economy Workshop, Ibadan, Nigeria. pp.4-9.
- Alom, F., Ward, B., & Hu, B. (2011). Spillover effects of World oil prices on food prices: evidence for Asia and Pacific countries. 29, 1-29
- Apata, T.G., Folayan, A, Apata, O.M. and Akinlua, J (2011). The Economic Role of Nigeria's Subsistence Agriculture in the Transition Process: Implications for Rural Development. 85th Annual Conference of the Agricultural Economics Society Warwick University 18 - 20 April 2011.
- C. Peter Timmer and David Dawe, 2007. Managing Food Price Instability in Asia: A Macro Food Security Perspective. Asian Economic Journal. Journal of the East Asian Economic Association Volume 21, Issue 1 Pages 1-18. <https://doi.org/10.1111/j.1467-8381.2007.00244.x>
- Cornelis Gardebreek and Manuel A. Hernandez (2012): Examining volatility transmission between US oil, ethanol and corn markets. Selected Paper prepared for presentation at the Agricultural & Applied



- Economics Association's 2012 AAEA Annual Meeting, Seattle, Washington, August 12-14, 2012)
- Coyle, B. T. (1992). Risk aversion and price risk in duality models of production: A linear mean – variance approach. *American Journal of Agricultural Economics*, 74(4):849-859.
- Cont R. (2000). Empirical properties of asset returns: stylized facts and statistical issues. *Quantitative Finance Volume 1* (2001) 223–236. Institute of Physics Publishing
- Cristian Morales-Opazo, Alberto Garrido, Mulat Demeke, Isabel Bardají (2013). Literature review of impacts of food price volatility on consumers in developed and developing countries Sol García-Germán I, Working Paper No. 2 ULYSSES “Understanding and coping with food markets Volatility towards more Stable World and EU food Systems” Seventh Framework Program Project 312182 KBBE.2012.1.4-05 www.fp7-ulysses.eu
- David R. Lee and Muna Ndulo (2011). *The Food and Financial Crises in Sub-Saharan Africa: Origin, Impacts and Policy Implications*. Printed and Bound in the UK by CPI Group (UK) Ltd, Croydon. CRO 4YY. ISBN – 13: 978 1 84593 828 4
- Elver, H. (2015). Why are there still so many hungry people in the world. *The Guardian*. Available online at www.theguardian.com/global-development/2015/feb.
- Engle, Robert. (1982): “Autoregressive Conditional Heteroskedasticity with Estimates of the Variance of United Kingdom Inflation.” *Econometrica*, July, 51(4), pp. 987-1008.
- Engle, R.F. and A.J. Patton (2001): “What good is a volatility model?” *Quantitative Finance*, 1, 237-245.
- Fatuase, A.I., Ehinmowo, O.O., Oparinde, L.O. and Omonijo, G.A. (2016). Effect of Agriculture and Health Expenditures on the Economic Growth in Nigeria. *Journal of Biology, Agriculture and Healthcare*, 6(7): 48 – 57.
- Federal Ministry of Agriculture and Water Resources (FMAWR). 2008. National Food Security Programme, Federal Republic of Nigeria. www.ifpri.org/publication/2011globalhung erindex.
- FAO, OCED, IFAD, IFPRI, IMF, UNCTAD, WFP, World Bank, WTO, and UN-HLTF (2011). Price volatility in food and agricultural markets: Policy responses. Technical report.
- FAO (2017): FAO in Nigeria at a glance. www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en
- FAO. (2010). “Price Volatility in Agricultural Markets.” Economic and Social Perspectives Policy Brief #12, Rome: Food and Agriculture Organization of the United Nations.
- FAO. 2011. *The State of Food Insecurity in the World*” How does international price volatility affect Domestic Economies and Food Security? Rome: Food and Agriculture Organization of the United Nations.
- Global Agricultural Information Network (GAIN). 2017. Nigerian Grain and Feed Annual Report. Retrieved online from <http://www.gain.fas.usda.gov>.
- Global Hunger Index; International Food Policy Research Institute (GHI/IFPRI) 2011: *Global Hunger Index - 2011*, viewed 22 August 2012. Retrieved on line at www.ifpri.org/publication/2011globalhung erindex.



- Granger, C.W.J. (1998). "Comonotonicity." Lecture to the Econometrics and Financial Time Series Workshop, Isaac Newton Institute for Mathematical Sciences, Cambridge University.
- High Level Panel of Experts on Food Security and Nutrition (HLPE). 2011. "Price Volatility and Food Security." The High Level Panel of Experts on Food Security and Nutrition, Committee on World Food Security, Report 1. <http://www.fao.org/cfs/cfs-hlpe/en/>.
- Haile, M. G., Kalkuhl, M., & von Braun, J. (2014). Inter-and intra-seasonal crop acreage response to international food prices and implications of volatility. *Agricultural Economics*, 45(6), 693-710.
- International Food Policy Research Institute. (2017). 2017 Global Food Policy Report. Washington, DC: International Food Policy Research Institute. <https://doi.org.10.2499/9780896292529>
- Ijeoma C. Nwoko, Goodness C. Aye and Benjamin C. Asogwa (2016): Effect of oil price on Nigeria's food price volatility. *Cogent Food & Agriculture*, 2: 1146057 <http://dx.doi.org/10.1080/23311932.2016.1146057>
- Kafle, Kashi Ram, (2011): Exchange rate volatility and bilateral agricultural trade flows: the case of the United States and OECD countries. *LSU Master's Theses*. 3713. http://digitalcommons.lsu.edu/gradschool_theses/3713
- Kellard, N., and S. Wohar. (2006). "On the prevalence of trends in commodity prices." *Journal of Development Economics* 79:146–167.
- Kim, T-H., N.E. Pfaffenzeller, A. Rayner, and P. Newbold. (2003). "Testing for linear trend with application to relative primary commodity prices." *Journal of Time Series Analysis* 24:539–551.
- Marc F. Bellemare (2014). Rising food prices, food price volatility, and Social unrest. *Amer. J. Agr. Econ.* 97(1): 1–21; doi: 10.1093/ajae/aau038. Published online June 26, 2014). Published by Oxford University Press
- M Kalkuhl, J Von Braun, M Torero, (2016). Food price volatility and its implications for food security and policy. Springer Open. Online at <https://mpra.ub.uni-muenchen.de/72164/> MPRA Paper No. 72164, posted 23 June 2016 08:03 UTC
- Martins-Filho, C. & Yao, F. & Torero, M., 2010. "Two-step conditional-quantile estimation via additive models of location and scale," *International Food Policy Research Institute (IFPRI)*, www.foodsecurityportal.org/sites/default/files/MartinsFilhoToreroYao2010.pdf
- Minot, N. (2013). Food price volatility in sub-Saharan Africa: Has it really increased? *Food Policy*, 45:45 {56}.
- McAleer, M., Chan, F. and Marinova, D. (2007). An econometric analysis of asymmetric volatility: theory and application to patents. *Journal of Econometrics*. 139: 259-284.
- Baumeister, C. and Kilian, L. 2013. Do Oil price increase cause higher food volatility? Preliminary version of a paper prepared for the 59th Panel Meeting of Economic Policy, April 2014.
- Ogundele, A. O. and V. O. Okoruwa, 2006. Technical Efficiency Differentials in Rice Production Technology in Nigeria. African Economic Consortium, Research Paper No. 154.



- Taylor, S. J. (1986). *Modelling Financial Time Series*. Chichester: John Wiley & Sons.
- Piot-Lepetit, I. (2011). Price volatility and price leadership in the EU beef and pork meat market (Piot- Lepetit, I. and M'Barek, R., Eds.). In *Methods to Analyse Agricultural Commodity Price Volatility* (pp.85-106). New York: Springer Science+Business Media
- Rabobank (2011). Rethinking the food and agribusiness supply chain; impact of agricultural price volatility on sourcing strategies. Retrieved in September 2012 from <http://hugin.info/133178/R/1549493/476482.pdf>
- Rezitis, A. and Stavropoulos, K. (2009). Modelling pork supply response and price volatility: The case of Greece, *Journal of Agricultural and Applied Economics*, 41 (1), 145-162
- Rezitis, A.N. and Stavropoulos, K.S. (2011). Price transmission and volatility in the Greek broiler sector: A Threshold Cointegration analysis, *Journal of Agricultural and Industrial Organization*, 9(1), 1-35
- Tsion Taye Assefa, Miranda P.M. Meuwissen¹, Alfons G.J.M. Oude Lansink (2014): Literature review on price volatility transmission in food supply chains, the role of contextual factors, and the CAP's market measures
- Teresa Serra and David Zilberman(2013); Biofuel-related price transmission literature: a review. *Energy Economics*, 2013, vol. 37, issue C, 141-151
- Mafimisebi T.E, 2012, Spatial Equilibrium, Market Integration and Price Exogeneity in Dry Fish Marketing in Nigeria: A Vector Auto-regressive (VAR) Approach. *Journal of Economics, Finance and Administrative Sciences*, 17 (2012): 31-37.
- [http://dx.doi.org/10.1016/S2077-1886\(12\)70005-7](http://dx.doi.org/10.1016/S2077-1886(12)70005-7) Mafimisebi T.E. and Mafimisebi T.E., Agunbiade B.O. and Mafimisebi O.E., 2014, Price Variability, Co-integration and Exogeneity in the Market for Locally Produced Rice: A Case Study of Southwest Zone of Nigeria. *Journal of Rice Research*, 2: 1, <http://dx.doi.org/10.4172/jrr.10000118>
- Moledina, A.A., Roe, T.L. and Shane, M. (2004). Measuring commodity price volatility and the welfare consequences of eliminating volatility. Paper presented at the AAFA Annual meeting on August 1-4, 2004 Denver Colorado.
- Poterba and Summer (1986) has explained that if the variance equation gives a parameter estimate that indicates high volatility persistence such that the sum of α_i and β_i close to unity, then it implies
- Tsay L.S., (2005) *Analysis of Financial Time Series*, 2nd ed., Hoboken, N.J: Wiley
- United States Department of Agriculture (2016). *Agricultural Research Service 2016 Annual Report on Science*
- OECD (2009), *Managing risk in agriculture. A holistic approach*, Paris, OECD
- Rezitis, Anthony N. and Sassi, Maria, (2013).) *Commodity Food Prices: Review and Empirics Economics Research International*, Dražen Derado University of Split - Economics, Vol. 2013, Article ID 694507, 15 pages, 2013. doi:10.1155/2013/694507. Available at SSRN: <https://ssrn.com/abstract=2238646>
- Rydberg, T. H. and N. Shephard (2000). A modelling framework for the prices and times of trades made on the NYSE. In W. J. Fitzgerald, R. L. Smith, A. T. Walden, and P. C. Young (Eds.), *Nonlinear and Nonstationary Signal Processing*, pp. 217–



246. Cambridge: Isaac Newton Institute and Cambridge University Press.

World development Indicators (2017).
 Regional Highlights World Development Indicators.

Tudor, C. (2008). “Modeling time series volatilities using symmetrical GARCH models”, *The Romanian Economic Journal*, no. 30, 2008, pp. 183-208

United Nations, Department of Economic and Social Affairs – UN DESA, Population Division (2015). *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables*. Working Paper No. ESA/P/WP.241.

Table 1: Output of GARCH in Mean Model

Dependent Variable	c	Conditional Mean Equation				Conditional Variance Equation				ARCH LM Test		
		θ_1	θ_2	θ_3	α_0	α_1	β	AIC	SIC	LLR	F Stat	P-value
Local Rice	6.693*	-0.320*	0.4302*	-2.1125*	4.3619*	0.1191*	0.547*	3.988	4.1774	-223.3	1.2721	0.2618
Imported Rice	2.151**	-0.196*	-0.073*	-0.393**	5.801**	0.3332*	0.494*	4.5273	4.7172	-254.6	0.000	0.989
Brent Oil	-0.4078	0.168**	0.04581	0.1740	0.7615	0.2114*	0.754*	5.465	5.557	-741.7	1.1600	0.2826

Source: Data Analysis, 2018. *, **, *** statistically significant at 1%, 5%, and 10% respectively

Table 2. Spillover from Oil Price and Price of Imported Rice to Price of Local Rice

Dependent Variable	Conditional Mean Equation				Conditional Variance Equation					ARCH LM Test		
	c	θ_1	θ_2	ω_1	α	γ	β	δ_1	δ_2	LLR	F Stat	P-value
Local Rice	0.2** *	-0.063	0.21** *	-0.398	1.434*	-0.274*	0.94*	-0.5**	0.0024	-206.3	0.427	0.515

Source: Data Analysis, 2018. *, **, *** statistically significant at 1%, 5%, and 10% respectively



Table 3: Output of Welfare Cost Implications of Food Price Volatility

	Welfare Cost of Price Volatility			Welfare
	Maximum Volatility	Minimum Volatility	Average Volatility	Remarks on Average Volatility
Local Rice				Effect of Price Stabilization Policy/Programmes on consumption
Rural Food Price Returns	18.882	0.0574	5.392	It significantly affects consumption
Imported Rice	51.713	0.8896	15.817	It significantly affects consumption

Source: Data Analysis, 2018.

Appendix 1

Pairwise Granger Causality Tests
Date: 05/09/18 Time: 01:40
Sample: 2007 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
MRICE does not Granger Cause LRICE	8	4.51895	0.0044
LRICE does not Granger Cause MRICE		7.01086	0.0740
OPV does not Granger Cause LRICE	8	1.53433	0.3476
LRICE does not Granger Cause OPV		1.18769	0.4169
YOUTHUNEMPLOYMENT does not Granger Cause LRICE	8	1.89255	0.2940
LRICE does not Granger Cause YOUTHUNEMPLOYMENT		1.55490	0.3441
AGDP does not Granger Cause LRICE	7	18.7466	0.0406
LRICE does not Granger Cause AGDP		1.83474	0.3528
OPV does not Granger Cause MRICE	8	3.68917	0.1554
MRICE does not Granger Cause OPV		8.96037	0.0543
YOUTHUNEMPLOYMENT does not Granger Cause MRICE	8	2.18883	0.2593
MRICE does not Granger Cause YOUTHUNEMPLOYMENT		57.9960	0.0040
AGDP does not Granger Cause MRICE	7	3.41562	0.2265
MRICE does not Granger Cause AGDP		0.02445	0.9761
YOUTHUNEMPLOYMENT does not Granger Cause OPV	8	4.23102	0.1339
OPV does not Granger Cause YOUTHUNEMPLOYMENT		0.16612	0.8542
AGDP does not Granger Cause OPV	7	0.07679	0.9287
OPV does not Granger Cause AGDP		0.92167	0.5204
AGDP does not Granger Cause YOUTHUNEMPLOYMENT	9	13.7130	0.0162
YOUTHUNEMPLOYMENT does not Granger Cause AGDP		0.41529	0.6857



GENDER DIFFERENTIALS AND PRODUCTIVITY OF AGRICULTURAL SCIENCE TEACHERS IN SECONDARY SCHOOLS IN OGUN STATE

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Abstracts

The study examined the gender differentials and productivity of Agricultural Science teachers in selected secondary schools in Ogun State. In carrying out the study, three research questions and one hypotheses were formulated, all derived from the literature review. The study was carried out in five local government areas of Ogun central in Nigeria. The population of the study consisted of all agricultural science teachers in the study area and from this, one hundred and twenty two Agricultural Science teachers were used. Data were collected using a modified Likert 4-point questionnaire validated by experts. The questionnaires were distributed personally by the researcher to the respondents for their responses. The data collected were coded and analyzed and independent sample t-test statistical tool at 0.05 level of significance was used to test for the formulated hypotheses. The results indicated that the factors which include the physical working conditions and condition of service in teaching Agricultural science had positive effects on teachers' productivity. Furthermore, the variables on gender differentials showed that male Agricultural Science teachers spent more time on practical than the female teachers. Based on the findings of the study, recommendations were made that government should help provide relevant, sufficient instructional materials, well equipped Agricultural science laboratory, Agricultural inputs and facilities for both theoretical and practical courses in Agriculture. Prompt payment of salaries as well as promotion to staff as at when due will motivate teachers for better productivity.

Key words: Gender, Productivity, Agricultural science

INTRODUCTION

The goal of secondary education in Nigeria as indicated in the National Policy in Education (Federal Government of Nigeria (FGN), 2004) is to train children for useful living in the society. In other words, secondary schools are established and maintained to help in ensuring a productive and competent citizenry. Agriculture is the foundation of economic growth and development of many developing countries including Nigeria. Agriculture is important for the development of the nation because of its primary role in food production; and food is one of the basic needs of man.

Livinus (2008) defined Agriculture as the human activity of cultivating crops and

plantations for production of food and goods such as fibers, biofuels and animal feed. Osinem (2008) viewed agriculture as a science and systems which involve the cultivation of crops and rearing of animals for man's use. The science and systems of crop cultivations can be achieved through agricultural education. The National Curriculum Council (NCC), specified that Agricultural Science should be taught in secondary schools in order to create and sustain students interest in agriculture, and to serve as a foundation for future advancement in the study of Agricultural Science (NCC, 2009).



Agriculture in junior Secondary School level, is referred to as Practical Agriculture and is offered as a pre-vocational subject while in Senior Secondary School, it is referred to as Agricultural Science and is one of the compulsory elective vocational subjects. Teaching and learning Agriculture at junior secondary school level may be more demanding than at senior secondary school because Agricultural science is a core subject while it is an optional subject at the senior secondary schools. The Federal Republic of Nigeria outlines major objectives of teaching and learning agriculture science in schools:

To stimulate student's interest in agriculture,

To enable students acquire basic knowledge of agriculture,

To develop basic agricultural skills in students,

To enable students integrate knowledge with skills in Agriculture.

To expose students to opportunities in the field of agriculture,

To prepare students for occupation in Agriculture.

The attainment of the above objectives depends on teacher factors and pedagogical approaches. It is therefore the duties of teacher to stimulate students in agriculture, enable them acquire basic knowledge and practical skills in agriculture, prepare and expose students for occupation. In defining the major roles of Agricultural science teachers in schools and college, Olaitan (2011) posited that a teacher of Agriculture is not only a "common teacher" but also a technician in Agriculture. According to him, the roles of a teacher of Agricultural Science differ to some extent from that of the other teachers in the school system because they are expected to deal with cognitive, psychomotor and affective outcomes of teaching learning process. The teacher of Agricultural Science are supposed to give all round education to their students as well as helping them to acquire definite skills that are necessary for

efficient performance in all aspects of agriculture where the learner may wish to specialize. Teachers of Agricultural Science are expected to link the theory in the classroom with practical aspects of the curriculum for a worthwhile learning outcomes, and effective transfer of learning experiences. It has been observed that teacher's experience plays a big role in the effectiveness of every teaching and learning process. Teachers with more years of experience had been observed to be able to teach more effectively than the beginning teachers.

This exposition is an attempt to produce an overview of socio-cultural, educational, economic, biological and religious factors that are responsible for gender differences in the teaching of agricultural science. Gender as a concept, is socially and culturally determined. This means that people's perception, ideas, values and expectation about masculinity and feminism are created, influenced and determined by culture and socialization. Thus gender is an analytic concept which projects or stresses the cultural responsibilities of men and women (masculine and feminine) in a given society. Agarwal, (1994), refers to gender as relations of power between men and women, which are revealed in a range of practices, ideas, and representations including division of labor, roles and resources between men and women and then ascribing to them different abilities, attitude, personality, traits, behavioral patterns.

UNESCO (1999) refers to gender as those characteristics of men and women that are socially determined, and are always distinguished from those that are generally or biologically determined (sex). Gender differentiated performances implied that there are some activities or tasks in which male students excel more than female students and vice versa. For instance, in activities or tasks involving preparation of dishes in a home economics class, the female students are likely to excel more



than male students, while in an introductory technology class involving construction exercises, the male students are more likely to excel than the females. Gender differences are social constructs inculcated on the basis of specific society's particular perception of the physical difference and the assured tastes, tendencies and capabilities of men and women. Societies determine what resources men and women will access jointly or separately, what work men and women shall perform and for what rewards, what types of knowledge are appropriate for men and for women and how and where this knowledge is acquired. Gender is about relationships and these relationships change over time, space and circumstances. Gender relationships are different because cultures, religions, ethnicities and classes that men and women belong to are different. Each institution has its own gender culture, that is relationships between women and men, for example who holds the more powerful positions, has access to more resources, has stronger networks which they can appropriate to their own ends. Differences in gender roles and behaviors often create inequalities whereby one gender becomes empowered to the disadvantages of the other (World Health Organization, WHO, 2009). White Law *et al* (2000) stated that teacher's sex is an important variable related to performance. Gender traits in males and females have shown in their attitude towards Agricultural Science. There is a bias that majority of females still choose not to opt for Agricultural science. The differences in the persistence of males and females studying Agricultural Science had been a topic of concern to researchers in Agricultural Science Education for years. Similarly, it has been observed that male teachers have more positive attitudes towards the teaching of Agricultural Science, achieve better and have higher preferences for Agricultural practical than female teachers. Gender in this case is the behavioural, cultural or psychological traits

associated with ones' sex. Thomas (2010) in his study found that learning from a teacher of opposite gender had a detrimental effect on student academic progress and their engagement in schools. Teachers stand in as the interface of the transmission of knowledge, values and skills in the learning process. If the teacher is ineffective, students under the teacher's tutelage will achieve inadequate progress academically.

Productivity refers to the overall effectiveness and efficiency of getting things done. It is the ratio to measure the value of an organization output to the cost of input. It implies how efficient an organization or employee converts its resources into goods and services. In the school, teacher's productivity may be measured in terms of teacher's performance which may be evaluated in terms of what the teachers control and actually do in the classroom such as teaching effectiveness and classroom performance. In a typical secondary school, what constitutes the productivity of teachers is the total task assigned to them. Oluchukwu (2008) opined that productivity occurs when organizational climate which he described as the 3 M's which include man, money and materials are introduced therefore, understanding human behavior and channeling it positively can enhance productivity.

Teaching secondary agriculture is a very complex job with various facets that must be measured. There is more to teaching agriculture than content and pedagogical processes. Being an agricultural science teacher is both demanding and challenging. Agriculture teachers draw upon physical, emotional and rational capacity in order to be effective in the classroom. There is also the contention that the strains and potential sources of dissatisfaction could be different between the two genders. Agriculture curriculum in secondary schools has a broad range of subject matter which includes theory coupled with practical.



More so, Agricultural science is relevant to both males and females in the society; it becomes necessary that the subject is studied by both sexes. Both male and female Agricultural science teachers suffer as they perform multiple physical tasks associated with teaching agriculture, for example, working with livestock and crops outside the classroom. In schools, most male Agricultural science teachers performed better than females, this is because male teachers are biologically, physically, stronger than female teachers in activities involving exercises like practical agricultural science. This is in agreement with UNESCO (1999) that gender are those characteristics of men and women that are socially determined and are always distinguished from those that are generally or biologically determined called sex. Gender differentiated performance have implied that there are some activities or tasks which male teachers excel more than female teachers.

Ben (2001) in a related study revealed that agricultural science teachers in secondary schools in Nigeria seem no longer efficient and productive. Their output has been observed to be low. This does not only pose a serious problem to the school administrators but the entire education system. Agricultural science teachers do not seem to make optimal use of the time available for them to impart necessary skills, knowledge and attitudes to students. Many serving teachers engage in other businesses such as part time farming, trading, event management, and fashion designing to earn a living while giving spatial commitment to their primary teaching job. Studies by Oluchukwu (2008) revealed that besides negative attitude exhibited by students towards academic works in schools, lack of commitment as well as nonchalant attitude to work by agricultural science teachers' result in low productivity. To make ends meet, teachers are involved in other business ventures. When this happens, teachers of agriculture in such role run into conflicts and divided

loyalty in their primary and professional practice as teachers. This puts teachers' productivity on the decline due to competing demands from other sectors. This adversely affects the productivity and consequently contributes to the fall in the standard of education.

Harrap (2006) in a related study found out that poor or inadequate morale is caused by inadequate salaries, large classes, poor administration, poor accommodation, lack of teaching materials and equipment for practical Agriculture, lack of co-operation between Board of Education and public, improvised social facilities, over loading of democratic leadership, unwillingness to support the school system and unwillingness to pay. He pointed out that provision of adequate instructional materials, adequate and qualified teachers, less work load, democratic leadership style, high salaries to mention but a few can raise the morale of teachers and increase teachers' productivity.

Location also influences the productivity of male and female agriculture teachers, in the rural school setting, opportunities for enrichment and personal advancement are often more limited in the rural areas as compared to those available in towns and cities. Male teachers are more productive than female teachers in the rural areas, this is because female teachers do not want to leave their family, and they tend to seek for transfer to the urban areas where they can be closer to their family, only few female are in the rural areas because of some female attitudinal disposition to teaching in the rural areas. Male teachers give more time to practical than females who do not fully demonstrate well on the farm. Male agricultural science teachers also have the ability to take risk, they can stay and work extra hours on school farm after the school time working and monitoring the students work on the farm.

The gender differentials in teaching agriculture entails the different ways that male and female agricultural teacher carried out or discharge the teaching



process. More male teachers tend to have an advantage in term of career advancement and additional qualifications than the female teachers who also go for additional studies but they take more time off work than men due to pregnancy and childcare-related barriers. Another issue is that male Agriculture teachers devote more time to lesson planning and deliver than female teacher who are sometimes too tired to be able to plan and deliver lesson effectively due to household chores and childcare. There are also cases, where female teachers are found asleep in schools due to exhaustion from their domestic work and other personal responsibilities. This shows that men are more productive than the women. This study assessed the gender differentials and productivity of Agricultural Science teachers in Nigerian secondary schools.

RESEARCH OBJECTIVES

- i. describe the socio-economic background of the respondents
- ii. identify the gender differentials of Agricultural science teachers in secondary schools.
- iii. examine the level of the productivity of Agricultural science teachers in secondary schools.

RESEARCH HYPOTHESIS

Ho: There is no significant difference in the mean responses of secondary schools agricultural science teachers on their level of productivity in schools.

METHODOLOGY

The study adopted a descriptive survey research design; the study population consisted of Agricultural science teachers in secondary schools in Ogun state Nigeria. The study sample of 122 Agricultural science teachers which are 51 males and 71 females from 25 secondary schools randomly selected from five local governments namely: Abeokuta south (31 teachers), Abeokuta north (28 teachers), Ewekoro (24 teachers), Obafemi- owode

(16 teachers) and Odeda (23 teachers) on the basis of 5 schools selected from each local governments. A simple random sampling technique was used to select the sample. Data was collected using questionnaire; 3 experts in the field of Agricultural Education established the validity of the questionnaires. The instrument for collecting data was analyzed using descriptive statistical techniques and simple percentages while independent sample t-test at 0.05 level of significance was used to test the formulated hypotheses.

RESULTS AND DISCUSSION

Table 1 reveals that 41.8% of the respondents were males while 58.2% were females. General conclusion was that there are more female teachers than male Agricultural Science teachers in Secondary Schools in Ogun State Nigeria. In table 2, there was no participant below 30 years of age, 43.4% of the total respondents were aged between 31 and 39 years, 41.8% were between 40 and 49, and 14.8% aged above 50 years. The statistical data indicates that the majority of the Agricultural Science teachers in the study were aged between 31-39 years with mean age of 18.6.

The sample consisted of married, divorced and widowed; descriptive statistics indicated that there were no single or unmarried teachers, 92.6% were married, 2.5% divorced and 4.9% were widowed. This shows that the majority of the secondary school teachers of Agriculture were married. The academic qualifications of the respondents were revealed as follows: 3.3% of the respondents had Ph.D, 8.2% had a Master's Degree, 71.3% had Bachelor's Degree in Education, 9.8% had N.C.E, and 7.4% had P.G.D.E. The teachers with Bachelor's Degree in Education constituted the majority in the study sampled. This is due to the fact that the minimum qualification for secondary school teachers in Nigeria is to have a Bachelor's Degree in Education.

Table 5 consisted of teachers with teaching experience ranging from 5 years to 35



years. 15.6% of the respondent had a work experience of 5 to 10 years, 49.2% had 11 to 20 years of experience, 30.3% had 21 to 30 years of teaching experience while 4.9% had teaching experience between 31 to 40 years. Out of the 25 Secondary schools that were selected in this study, 18 were located in the urban areas and 7 were located in the rural areas; 93.4% of the teachers were from urban Secondary schools whereas 6.6% of the teachers were from rural areas. This implies that urban Secondary schools had higher representation than rural Secondary schools.

SUMMARY OF FINDINGS

The most important findings of this study with regard to the two research questions are as follows: In the first research question, that identified the gender differentials of Agricultural Science teachers in Secondary schools; the study revealed that the respondents were in agreement with four out of the seven items in this section and disagreed with the remaining three revealing that male teachers are not stronger than their female counterparts. The results indicated that male teachers are good at practical as well as the females. Respondents also disagreed that female teachers take time off duty than males. This is in line with Afrooz & AbduRahim (2010) that there is no significant influence of sex on productivity.

The second research question showed that there is statistically significant difference in the effects of some factors on the productivity of Agricultural Science teachers in Secondary schools in Nigeria. The finding shows that teachers are well motivated in schools because most of the respondents agreed that the factors like good salary, good working environment, adequate instructional materials, prompt promotion, in-service training, and demonstration farm etc. could improve their teaching productivity effectively. Here, the findings of the study agreed with the two factor theories that satisfied

employees are better motivated and achieve their targets efficiently as compared to dissatisfied employees. The result is also in line with Woods (2002) findings that teachers strongly desire interaction with their colleagues, support of the principal, appropriate workload consistent with their competency, a stable work environment and access to teaching materials required.

Table 7 in the survey instrument was measured by 7 items which include the indices of gender differentials in teaching Agricultural Science in Secondary Schools in Nigeria. The descriptive statistical method revealed that majority of the Agriculture teachers agreed with the items except item 7, 8 and 9 disagreeing that female teachers are equally stronger in performing some tasks in Agricultural activities; respondents also disagreed that female teachers were good at practical. This reveals that male Agriculture teachers spend more time on practical with students than the females; they go extra miles during practical lesson by staying behind after school time hours to supervise students' portions

The items on table 8 show how to determine or improve the productivity Agricultural Science teachers in Secondary schools. The descriptive statistics revealed that all the Agriculture teachers agreed with all the items; which signified that the factors are very helpful and have motivational effects on the productivity of Agricultural science teachers in Secondary schools in Nigeria.

Table 9 shows how the null hypothesis for gender i.e. male and female Secondary school Agricultural science teachers was tested, using the t-test at 0.05 level of significance and degree of freedom of 122. The t calculated for the two variables were less than the t- critical value and this indicates that there is no significant difference in the mean rating of the two variables. The null hypothesis was therefore accepted.



CONCLUSION AND RECOMMENDATIONS

Based on the findings from the study, the following recommendations were made:

1. In order to improve the productivity of Agricultural science teachers, there is need for the school principals and policy makers to recognize the factors that motivate teachers.
2. Prompt payment of salary, promotion at when due, accessibility to instructional materials, conducive environment, all these and more will further increase teaching productivity.
3. School environment should be stimulating enough to facilitate teaching and learning. Government should provide relevant, sufficient instructional materials, well equipped agricultural science laboratories, agricultural input and facilities for both theoretical and practical agriculture.
4. Government should make adequate provision for people teaching Agricultural science in the rural area.
5. Government should give recognition to Ph.D holders teaching Agricultural science in secondary schools.

REFERENCES

- Afroz, A. & Abdurahim, K. B. (2010). A review of effects of gender, age and education on wage and productivity. *International Research Journal of Finance and Economics*. 46: 71—79.
- Agarwal, B. (1994). *A field of one's own: Gender and Land Rights in South Asia*. Cambridge. Cambridge University press.
- Ben, C. B. (2001). Leadership among secondary school Agricultural Science teachers and their job Performance in Akwa Ibom State. *World Journal of Education* 2:133-141
- Harrap, H. (2006). Factors that affects teachers' morale, Nations Schools, 65.
- Livinus, O. (2008). Definition of agriculture, *International Journal of Scientific Research in Education, Agricultural Land Reserve*. DOAG Retrieved on January 18, 2012 from http://www.a/c.gov.bc.ca/alr/what_is_ag_land.html
- National Curriculum Council, NCC (2009). Abuja: Federal Ministry of Education,
- Oluchukwu, (2008). Organizational climate and teacher's productivity in secondary schools in Jos-North Local Government Area of Plateau state. In Education and productivity in Nigeria Illorin: NAEAP. National Curriculum Council, NCC (2009). Abuja: Federal Ministry of Education,
- Olaitan, S.O. (2011): The potentials of vocational and technical education for empowering youths and vulnerable adults with work skills for poverty reduction in Nigeria. *Akoka Journal of Vocational Education* 7 (122), 1-8.
- Osinem, E. C. (2008). *Environmental Education in Agriculture*. Enugu. Cheston Publishers
- Thomas S. D (2010). Teachers and the Gender gaps in Students achievement. New York: National Bureau of Economic Research. www.nber.org/papers/w11660 . Retrieved on 27/06/2013 at 3.00pm.
- United Educational Scientific and Cultural Organization (UNESCO) (1999). Gender Sensitivity module 5 training Manual for workshop on Gender sensitivity approach to audience and counseling for school age girls in Nigeria, Abuja.



Woods A. M & Weasmer J. (2002) 20, 2011, from
"Maintaining job satisfaction: Engaging professionals as active participants". *The Clearing House Journal*, 75(4), 186-189. http://whqlibdoc.who.int/publications/2009/9789241597883_eng.pdf

World Health Organization. (2009). Violence Prevention: The evidence, promoting gender equality to prevent violence against women. Geneva: WHO. Retrieved on July

Whitelaw, S., Milosevic, L., Daniel, S. (2000): Gender behaviour and achievement: A preliminary study of pupil's perception and attitudes. *Gender and Education*. 12 (1) 87-113.

Table 1: Distribution of respondents according to their socio-conomic characteristics

	Frequency	Percentages		
Gender				
Male	51	41.8		
Female	71	58.2		
Total	122	100		
Age (years)				
31-39	53	43.4	15.2	1.79
40-49	51	41.8	18.6	2.34
Above 50	18	14.8	8.1	4.25
Total	122	100	18.6	
Marital status				
Single	0	0		
Married	113	92.6		
Divorced	3	2.5		
Widowed	6	4.9		
Academic qualification				
Ph.D.	4	3.3		
M.Sc./M.Ed.	10	8.2		
B.Sc./B.Ed.	87	71.3		
N.C.E.	12	9.8		
P.G.D.E.	9	7.4		
Total	122	100		
Teaching experience (years)				
5 – 10	19	15.6	0.16	1.17
11 – 20	60	49.2	0.98	10.78
21 – 30	37	30.3	0.91	9.97
31 – 40	6	4.9	0.96	2.09
Total	122	100	3.01	
Location				
Urban	114	93.4		
Rural	8	6.6		
Total	122	100		

Source: Field survey, 2015



Table 7 Indices of gender differentials of Agricultural science teachers in secondary schools

S/N	The following are the indices of gender differentials of Agricultural Science teachers in Secondary Schools	Mean of Agric. Teachers	SD	Remarks
1.	Male Agricultural teachers are physically stronger than female teachers	2.39	0.22	Disagree
2.	Female Agriculture teachers are good at practical than male	2.28	0.21	Disagree
3.	Female Agriculture teachers take time off duty than men	2.39	0.22	Disagree
4.	Male Agriculture teachers perform well in rural area than Female Agriculture teachers	2.50	0.23	Agree
5.	Male Agriculture teachers participate more in career advancement than female teachers	2.54	0.23	Agree
6.	Male Agriculture teachers spend extra hours in schools to monitor students farm work	2.87	0.26	Agree
7.	Female Agriculture teachers do go on maternity leave	3.25	0.29	Agree

Cut off point: 2.5 and above= Agreed, less than 2.5= Disagreed

Source: Field survey, 2015

Table 8: The productivity of Agricultural science teachers in secondary schools

S/N	The following can help determine or improve the productivity of Agricultural Science teachers in Secondary Schools	Mean of Agric. Teachers	SD	Remarks
1.	Provision of a motivating remuneration and salary boost my teaching productivity in Agriculture	3.48	0.31	Agree
2.	Prompt promotion enhances my productivity in teaching Agricultural science	3.48	0.31	Agree
3.	School environment stimulate my teaching productivity in Agricultural science	3.68	0.33	Agree
4.	Adequate instructional materials for teaching Agriculture increases my productivity	3.39	0.31	Agree
5.	Periodic in-service training and development improve the productivity of Agriculture teachers	3.26	0.29	Agree
6.	Agriculture teacher academic advancement increases their productivity	2.94	0.27	Agree
7.	Availability of school demonstration farm influences teaching productivity of Agriculture teachers	3.77	0.34	Agree
8.	Accessibility of farm machines and implement enhances productivity in teaching Agriculture	3.57	0.32	Agree

Cut off point: 2.5 and above= Agreed, less than 2.5= Disagreed

Source: Field survey, 2015

Table 9: t-test showing the differences in the productivity of male and female Agricultural Science teachers Secondary Schools

Gender	Frequency	Mean of Agric. Teachers X	SD	t critical	t cal.	Decision
Male	51	0.42	4.58	1.657	-0.16	Accept Ho
Female	71	0.58	6.38			

t cal = -0.16 < t critical = 1.657, p value = 0.05, df = 122

Source: Field survey, 2015



FACTORS INFLUENCING YOUTH PARTICIPATION IN FARM AND NON-FARM ACTIVITIES IN ONDO STATE, NIGERIA

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Abstract

The study investigated factors influencing youth participation in farm and non-farm activities in Ondo State, Nigeria. The multi-stage sampling technique was used to select one hundred and twenty-eight respondents for the study. Structured questionnaire with oral interview schedule were used to gather the primary data for the study. Data collected were analysed using descriptive statistics (frequency distribution, percentage, mean and standard deviation) and logistic regression model was used to determine factors influencing youth participation in farm and non-farm activities in the study area. The results of the socio-economic characteristics revealed that the mean age of respondents was 28.4±5.6 years, 56.8% were male, 50.2% were married; mean household size was 5±1 members per household, 54.4% of the respondents had secondary education with 8.2±2.4 mean years of experience in their various occupation. The results of the logistic regression revealed that, age, years of formal schooling, farm income, distance to market/urban centre, wage earn from non-farm activities were the variables influencing youth participation in farm and non-farm activities in the study area. Farm and non-farm activities contribute to household income, absorb labour, and alleviate poverty among youth. It was recommended based on the findings of the study that policies and programmes that will stimulate the youth in the rural areas should be encouraged to check rural-urban migration of youth. Moreover, youth should be motivated with collateral free credit and inputs to develop agricultural production. Furthermore provision of infrastructure should be made a priority to enhance non-farm productivity.

Key words: Youth participation, Logit model, Non-farm activities, Youth unemployment.

INTRODUCTION

Youth in rural areas of sub-Saharan African countries have increasingly been searching for ways to escape from the detrimental effects of unemployment and poverty by diversifying their activities within and outside farm sector. This is done to address income, poverty, youth restiveness and ensure food security shortfalls in their households (Kimaro *et al.*, 2015). Nigeria is an agrarian nation and agriculture forms dominant means of livelihoods for majority of the population in the rural areas. The supply of labour and its shortage for agricultural production has been a major concern of policy makers and other stakeholders in the agricultural sector. Studies have shown that there is decreasing availability of energetic working population or youth that can cope with the

task of farm operations (Eze, 1993). This assertion does not just underscore the importance of absence of youth in agriculture, but it goes further to elicit concern and research interest on issues that affect youth participation in farm and non-farm employment in rural areas of Nigeria. Youth comprised people aged between 15 and 24 years old (Kimaro *et al.*, 2015). The age bracket for youth varies according to scholars for instance, according to African Youth Charter youth ranges from 15 to 35 years and the Nigeria National Youth Development Policy (Olaito, 2016) encapsulates youth as comprising of all young person between 18 and 30 years. This study adopted the African Youth Charter definition of youth. Globally, the population of youth between 15 and 24 years is more than 1 billion and about 85%



live in developing countries (World Program of Action for Youth (WPAY), 2012). Youth are characterized by innovative behaviour, minimal risk aversion, fearless, less conservativeness, greater physical strength and greater knowledge acquisition propensity (Umeh and Odom, 2011). The increasing absence of young people within the active working age on the farm has been attributed to farm drudgery, absence of social infrastructure in the rural areas, poor farm incomes and the apathy towards agriculture in our societies (Akanni and Dada, 2012). This trend has not helped rural productivity as it has left farming in the hands of the old/aged and non-literate farmers. In most countries of the world, youth integration in agricultural activities is critical in increasing food production.

Youth have the potential to overcome some of the major constraints in agricultural development because they are more open and receptive to ideas, innovations and practices than their adult farmers (Daudu, 2009). However, Banski (2003) opined that, young people living in rural areas across Africa migrate from rural areas to urban areas for non-farm activities. The role of non-farm activities in promoting growth of the rural economy and reducing poverty is well documented (Roslan and Siti 2011). Nigeria with agriculture as the dominant means of livelihoods for the rural farming households, participation in non-farm activities also play significant role in employment creation, income generation and enhance farm production (Woldehanna, 2000; Amsalu *et al.*, 2013; Beyene, 2008). Non-farm activities entails the activities or employment opportunities outside agriculture or farming such as barbing, food processing, transport business, tailoring, other service provision, among others. According to Haggblade *et al.* (2010), rural nonfarm activities refer to all rural business activities outside of farming which includes; restaurants, GSM repairs, business services, food processing and petty trading, rural crafts among

others. In rural areas, many households are pushed into non-farm activities, when farming became less profitable and more risky due to population growth, scarcity of cultivable land and market failures.

Several empirical studies have documented labour movement among youth out of the farm or agriculture to non-farm activities (Amsalu *et al.*, 2013, Zahonogo, 2011), and youth participation in agriculture (Kimaro *et al.*, 2015; Akinwumi, 2017; Akpan *et al.*, 2015; Nnadi and Akwiwu, 2008 and Akpabio, 2012). However, there is dearth of information or little empirical studies on youth participation in farm and non-farm activities and evidence to understand factors that drive youth participation in farm and non-farm employment activities particularly in Ondo State, Nigeria. This study is expected to give a better insight in addressing rural youth unemployment, stabilizing incomes and alleviating rural poverty and curb youth restiveness in our society. Moreover, it will help policy makers in formulating effective policies aimed at achieving rural development. From the foregoing, the following questions are pertinent in addressing factors which drive youth participation in farm and non-farm activities particularly in Ondo State, Nigeria.

RESEARCH QUESTIONS

1. What are the socio-economic characteristics of the respondents?
2. What are the farm and non-farm activities engaged in by the youth?
3. What are the factors influencing youth participation in farm and non-farm activities?

OBJECTIVES OF THE STUDY:

The specific objectives of the study are to

- i. profile the socio-economic characteristics of the respondents in the study area;



- ii. identify the farm and non-farm activities engaged in by the youth; and
- iii. determine factor influencing youth participation in farm and non-farm activities.

METHODOLOGY

The study was conducted in Ondo State of Nigeria. Ondo State has a population of 3,441,024 people (National Population Commission (NPC, 2006) with agriculture as the dominant occupation. The study area lies between latitude 5° 45' and 8° 15' North and longitude 4° 45' and 6° East of the Greenwich meridian (Ibidapo, 2017). The State falls into the tropical rainforest zone with temperature ranges between 24°C and 33°C and is characterized with two distinct seasons; the rainy and dry seasons, respectively. The average rainfall is between 100cm and 220cm per annum (Ayeni, 2009). Crops produced in the study area are yam, maize, cocoyam, cassava, plantain, cocoa, oil palm and kola among others. The multi-stage sampling technique was used to select respondents for the study. Stage one consisted of the random selection of four (4) Local Government Areas (LGAs) (Akoko-North-West, Ondo-West, Owo, and Okitipupa) from the four agricultural zones in the State. This was based on the selection of one LGA from each zone of the state. The second stage involved random selection of five (5) communities from each LGA. Stage three entailed the random selection of eight (8) youth from each community. A total of one hundred and twenty-eight (128) respondents from the total one hundred and sixty (160) sampled respondents were selected for the purpose of analysis. The study used the primary data collected with the aid of structured questionnaire and interview schedule. Information was collected on socio-economic characteristics, farm and non-farm activities and among others that will help to address the objectives of the study. Data collected were analyzed using descriptive statistics such as frequency

distribution counts, percentage, means and standard deviation were used to analyse respondents' socio-economic characteristics and other variables. The logistic regression analysis was used to analyse factors influencing youth participation in farm and non-farm activities in the study area.

LOGISTIC REGRESSION MODEL

The logit regression model is a binary dependent model. The binary logistic regression model estimates the influence of various factors on the dichotomous outcome of an event and it estimates the probability of event occurrence (Greene, 2003). The logit model does this by examining the relationship between one or more independent variables and the log odds of the binary outcome by calculating changes in the log odds of the dependent as opposed to the dependent variable itself (Adepoju and Obayelu, 2013). The log odds ratio is the ratio of the two odds and it is a summary measure of the relationship between two variables. The logit model is expressed as:

$$P = \frac{\exp(x)}{1 + \exp(z)} \dots\dots\dots 1$$

Where P is the proportion of occurrence,

$$z = \beta_0 + \beta_1 X_1 \dots\dots\dots + \beta_n X_n \dots\dots\dots 2$$

Where X₁.....X_n are the explanatory variables. Then the inverse relation of the equation 1 above is;

$$z = \ln \frac{P}{(1-P)} \dots\dots\dots 3$$

This implies that the natural logarithm of the odds ratio known as the logit. This is transformed the P which is restricted to the range of {0, 1} to a range of [- ∞ to ∞]

Y = Probability of participation in farm or non-farm activities (1 = Non-farm activity; 0 = farm activity) while the explanatory variables (X) are:

- X₁ = Age of respondents (years);
- X₂ = Gender of respondents (1 = male; 0 = female);
- X₃ = Marital status of respondents (1 = married; 0 = otherwise);



X₄ = Household size (numbers);
X₅ = Years of formal schooling (in years);
X₆ = Employment activities (1 = non-farm, 0 = farm);
X₇ = Non-farm wage (₦);
X₈ = Years of experience (years);
X₉ = Farm size (hectares);
X₁₀ = Farm income (₦);
X₁₁ = Distance to farm/labour market centre (km.).

RESULTS AND DISCUSSION

The results on Table 1 showed the socio-economic characteristics of the respondents. On age which is a determinant of decision making and involvement in activities, 59.4% of the respondents were between 25 and 29 years while 18.8%, 14.8% and 7.0% were greater than 29 years, between 20 and 24 years and less than 20 years, respectively. The mean age of respondents was 28.4±5.6 years. This finding is in line with Oladele and Kareem (2013) who reported the age as the active segment in production activities in rural areas of a country. The sex of the respondents revealed that 56.8% were male while 43.2% were female. This shows that more male youth were involved in the employment activities. This may not be unconnected with the need to alleviate poverty and be engaged in employment opportunities, hence generate more income for the family. On marital status, 50.2% were married while 30.5% and 19.3% were single and either divorced or widowed respectively in the study area. The finding that majority of the respondents were married is in agreement with Ugwoke and Ibe (2005) submission that majority of youth in the rural areas of Nigeria were married. Furthermore, Akinwumi (2017) also reported that majority (56.5%) of youth in the rural areas of Odigbo LGA in Ondo State were married. The study also showed that 56.3% of the respondents had between 4 and 9 members per household. The average household size as revealed by the study was 5 members which is in line with the national average household size of

5 members per household. On the educational attainment of respondents, the result indicated that 54.4% had secondary education while 20.0%, 13.5% and 12.1% had tertiary, no formal education and primary education respectively. This is in line with Akinwumi (2017) report that 64.0% of youth in Odigbo LGA of Ondo State had secondary education, but contrary to the finding by Ugwoke and Ibe (2005) who reported that 42.5% of youth with high school education. The year of experience in farm and non-farm activities showed that 60.9% of the respondents had between 5 and 10 years while 20.3% had between 10 and 16 years of experience. However, the mean year of experience of the youth in both activities was 8.2± 2.4 years.

The result of the farm and non-farm activities engaged in by the youth revealed that, for farm activities, 21.2% were into planting of crops while 19.2% percent engaged in farm weeding activities and 17.3% actively participate in vegetable production. Heap making accounted for 9.6%, spraying activities 7.7%; while harvesting, processing and poultry production accounted for 9.6%, 11.6% and 3.8%, respectively. This showed that the youth were actively involved in most all farm activities. On non-farm activities, the result showed that 29.0% of the respondents were into barbing while 15.8%, 13.2% and 10.5% were engaged in transport business, petty trading and carpentry respectively. Furthermore, those into GSM repairs, tailoring, hand craft and restaurants accounted for 9.2%, 10.6%, 4.0% and 7.9%, respectively. The findings is in line with Onwuemele (n.d) who reported that youth are involved in different non-farm activities such as GSM repairs, transport business, hair dressing, and barbing, mechanic works and servicing and bicycle repairing, among others in Niger Delta region of Nigeria. On income realised from farm and non-farm activities, the result showed that 69.2% of the respondents in farm activities earn between ₦60,000 and ₦150,000 per annum as against 73.7% in non-farm activities that earn between ₦160,000 and ₦250,000 per



annum. The mean income from non-farm activities (₦209,658 ± ₦67, 249) was greater than that of farm activities (₦102,115± ₦47, 057). This constituted one of the major reasons why youth and rural farmers were attracted to non-farm activities.

Table 3 showed the logistic regression on factors influencing youth participation in both farm and non-farm activities. On farm activities, the McFadden R² of 0.572 showed that 57.2% of the probability of youth participation in farm activities is explained by the explanatory variables included in the model and 42.8% was attributed to the error term. Log-likelihood statistics exhibited the appropriate signs. The result showed that age, education (years of formal schooling), years of experience, farm size and farm income were the significant variables influencing youth involvement in farming activities. The age, years of experience, farm size and farm income showed positive significant coefficient with youth participation at 5% level of significance. This implies that a year/unit increase in age, years of experience, farm size and farm income will increase the probability of youth (labour) supply to farm activities. This is in agreement with Echebiri and Nwaogu, (2016) and Effiong *et al.* (2016) who reported a positive significant coefficient of age, and farm income at 5% level of significance. However, education captured in term of years of formal schooling showed a negative significant coefficient at 5% level of significance. This conforms to *a priori* expectation which implies that a unit increase in years of formal schooling decreases youth (labour) supply to farm activities. This is in line with Anim, (2011) but contrary to the findings of Wandschneider (2003) who reported a positive significant coefficient between education and labour supply to farm activities.

On youth participation in non-farm activities, the McFadden R² of 0.635 showed that 63.5% of the probability of youth participation in farm activities is

explained by the explanatory variables included in the model and 36.5% was explained by the error term. The Log-likelihood statistics were significant at 5% level of significance. The result showed that, age, education, non-farm wage and distance had positive significant coefficient on youth participation in non-farm activities at 5% level of significance in the study area. This implies that a year/unit increase in age, years of formal schooling, non-farm income and a kilometer increase in distance increases the probability of youth supplying labour to non-farm activities. This is consistent with the findings of Wandschneider, (2003) and Amsalu *et al.* (2013). Moreover, gender and marital status showed positive significant coefficient with youth participation in non-farm activities at 5% level of significance. This implies that being male and married increases the probability of labour supply to non-farm activities in the study area.

CONCLUSION AND RECOMMENDATIONS

The study showed that youth participation in farm and non-farm activities could help in promoting youth employment, generating income and enhancing rural economic development, since farm activities alone is unable to provide the needed employment and income for the teeming youth. Participation of youth in non-farm activities helps to supplement household income and improve the welfare of the rural households. Based on the findings of the study youth should be encouraged into agriculture through effective policies and programmes, education and training in non-farm activities should be provided for the youth. Moreover, infrastructure and cottage industries should be provided in the rural areas to enhance more employment opportunities for the youth.



REFERENCES

- Adepoju, A. O. and Obayelu, O. A. (2013). Livelihood diversification and welfare of rural households in Ondo State, Nigeria *Journal of Development and Agricultural Economics*, 5(12): 482-489.
- Akanni, K. A. and Dada, A. D. (2012). Analysis of Labour-Use Patterns among Small-Holder Cocoa Farmers in South Western Nigeria *Journal of Agricultural Science and Technology*, 2: 107-113.
- Akinwumi, S. (2017). Determinants of youth participation in agricultural production in Odigbo Local Government Area of Ondo State, Nigeria. Unpublished Nigeria Certificate in Education (NCE) Project Submitted to the Department of Agricultural Science, Adeyemi College of Education, Ondo.
- Akpabio, I. A. (2012). Youth employment and agricultural Development: the inextricable Siamese twins. 34th Inaugural lecture Series of the University of Uyo, Nigeria.
- Akpan, S. B., Inimfon, V. P., Samuel, U. J. and Damian, I. A. (2015). Determinants of Decision and Participation of Rural Youth in Agricultural Production: A Case Study of Youth in Southern Region of Nigeria. *Russian Journal of Agricultural and Socio-economic Sciences*. 7(43): 35-48
- Amsalu, B. Getnet, K., Kassa, B. and Chaurasia, S. P. R. (2013). Off-farm Labour Supply Decision of Adults in Rural Ethiopia: Double Hurdle Approach. *Journal of Agricultural Economics and Development*, 2(4): 154-165.
- Anim, F. D. K. (2011). Factors Affecting Rural Household Farm Labour Supply in Farming Communities of South Africa. *Journal of Human Ecology*, 34(1): 23-28.
- Banski, J. (2003). Transforming the functional structure of Poland's rural areas, Alternatives for European Rural Areas: Warsaw
- Beyene, A. D. (2008). Determinants of off-farm participation decision of farm households in Ethiopia *Agricultural Economics Research, Policy and Practice in Southern Africa*, 47(1): 140-161.
- Daudu, S., (2009). Roles of Youths in Agricultural Development in Makurdi local Government Area of Benue State in Nigeria: *Journal of Agricultural Extension* 13(2): 107-109
- Echibiri, R. N. and Nwaogu, D. C. (2016). Determinants of credit access by rural farmers in Abia State, Nigeria. Proceedings of the 17th Annual National Conference of the National Association of Agricultural Economists held in FUT Owerri, Imo State, Nigeria
- Effiong, E., Obot, O., Dominic, A. and Edem, O. F. (2016). Analysis of Youth Participation in Selected Food Crop Production in Ibeskpo Asutan Local Government Area of Akwa Ibom State, Nigeria. Proceedings of the 17th Annual National Conference of the National Association of Agricultural Economists held in FUT Owerri, Imo State, Nigeria
- Eze, N. O. A. (1993). Labour Use and Productivity in Yam Based Household Farms of South-Eastern Nigeria, Unpublished Ph.D Dissertation. University of Port-Harcourt, Nigeria.
- Green, W. H. (2003). *Econometric Analysis*. London: Prentice Hall International, Upper Saddle River, New Jersey. ISBN: 0-13-066189-9 685- 899
- Haggblade, S., Hazell, P. and Reardon, T. (2010). The Rural Non-farm Economy: Prospects for Growth and Poverty Reduction. *World Development*, 38 (10): 1429–1441.



- Kimaro, P. J., Towo, N. N. and Moshi, B. H. (2015). Determinants of Rural Youth's Participation in Agricultural Activities: The Case of Kahe East Ward in Moshi Rural District, Tanzania *International Journal of Economics, Commerce and Management*, 3 (2): 2-35
- National Population Commission (NPC) (2006). Population Census Data Ondo State, Nigeria. Federal Republic of Nigeria Official Gazette, National and State Provisional Totals Census. Federal Government Printer, Lagos, Nigeria. 94 (21): 175 – 198.
- Nnadi, F. N. and Akwiwu, C. D. (2008). Determinants of Youth Participation in Rural Agriculture in Imo State, Nigeria *Journal of Applied Science*, 8: 328 – 333.
- Oladele, I. O. and Kareem A. I. (2013). Adoption Rate and Continued use of selected arable Crop Technologies among Farmers in Oyo State, Nigeria 291-294.
- Olaito, H. (2016). Factors influencing of youth participation in agricultural production in Ondo-West Local Government Area of Ondo State, Nigeria. Unpublished Nigeria Bachelor of Education Degree (B. Ed.) Project Submitted to the Department of Agricultural Science, Adeyemi Colege of Education, Ondo.
- Onwuebele, A (n.d). The non-farm sector as a catalyst for poverty reduction in the Niger-Delta region, Nigeria Nigerian Institute of Social and Economic Research (NISER) Social and Governance Policy Research Department
- Roslan, A. and Siti, H. (2011). Does Farmer's Diversification into Non-Farm Employment Reduce their Likelihood of Poverty? Evidence from Malaysia. *Journal of Business Policy and Research*, 6(1): 145-155.
- Ugwoke, F. O. and Ibe, F. C. (2005). Youth Participation in Farming Activities in Rural Areas of Imo State, Nigeria. *Journal of Agricultural Extension* 8 (2): 136 -141.
- Umeh, G. N. and Odom, C. N., (2011). Roles and Constraints of youths' associations in agricultural and rural development, IDOSI Publications: Nigeria
- Wandschneider, T. (2003). Determinants of Access to Rural Non-farm Employment: Evidence from Africa, South Asia and Transition Economy Repot V NRI Report No: 2758
- Woldehanna, T. (2000). Economic Analysis and Policy Implications of Farm and Non-farm Employment: A Case Study in the Tigray region of Northern Ethiopia. Unpublished PhD Thesis University of Wageningen. 1- 80
- Zahonogo, P. (2011). Determinants of non-farm activities participation decisions of farm households in Burkina Faso *Journal of Development and Agricultural Economics*, 3(4): 174-182,
- World Program of Action for Youth (2012). Available at www.un.org/youth visited on 18th September, 2014



Table 1: Distribution of respondents by socio-economic characteristics n = 128

Variables	Frequency	Percentage (%)
Age (yrs)		
<20	9	7.0
20-24	19	14.8
25-29	76	59.4
>29	24	18.8
Mean(SD)		28.4±5.6
Sex		
Female	55	43.2
Male	73	56.8
Marital Status		
Single	39	30.5
Married	64	50.2
Divorced/Widowed	25	19.3
Household Size		
<4	36	28.1
4-9	72	56.3
>9	20	15.6
Mean(SD)		4.5±1.2
Level of Education		
Primary education	15	12.1
Secondary education	70	54.4
Tertiary education	26	20.0
No formal education	17	13.5
Years of experience (yrs)		
<5	14	10.9
5-10	78	60.9
11-16	26	20.3
>16	10	7.8
Mean(SD)		8.2±2.4

Source: Field Survey, 2017



Table 2: Distribution of respondents by farm and non-farm activities engaged in

Farm activities	n = 52		Non-Farm activities n = 76		
	Frequency	Percentage (%)	Frequency	Percentage (%)	
Heap making	5	9.6	GSM repairs	7	9.2
Planting	11	21.2	Tailoring	8	10.6
Weeding	10	19.2	Petty trading	10	13.2
Vegetable production	9	17.3	Transport business	12	15.8
Spraying	4	7.7	Hand crafts	3	4.0
Harvesting	5	9.6	Carpentry	8	10.5
Processing	6	11.6	Barbing	22	29.0
Poultry production	2	3.8	Restaurants	6	7.9
Heap making	5	9.6	GSM repairs	7	9.2
Income (₦)			Income (₦)		
<60,000	6	11.5	<60,000	4	5.3
60,000 – 150,000	36	69.2	60,000 – 150,000	6	11.8
160,000 - 250,000	7	13.5	160,000 - 250,000	56	73.7
>250,000	3	5.8	>250,000	10	9.2
Mean (SD)	₦102,115±47, 057		Mean (SD)	₦209,658±67, 249	

Source: Field survey, 2017

Table 3: Result of Logistic regression on factors influencing youth participation in farm and non-farm activities

Variables	Farm Activities			Non-farm Activities		
	Coeff.	Wald	Sig.	Coeff.	Wald	Sig.
Age X ₁	0.0061	0.859	0.0221**	0.0839	6.470	0.0001*
Gender X ₂	-0.0054	0.375	0.5205	0.6291	2.823	0.0191**
Marital status X ₃	0.5785	3.248	0.2643	0.0328	5.703	0.0157**
Household size X ₄	0.0382	0.131	0.3281	0.0045	0.192	0.8661
Education X ₅	-0.0100	1.391	0.0113**	0.0534	9.335	0.0282**
Non-farm wage X ₆	-0.0716	1.298	0.5137	0.0857	3.622	0.0416**
Yrs experience X ₇	0.0227	0.291	0.0325**	-0.6542	2.492	0.1141
Farm size X ₈	0.0138	0.897	0.0321**	-1.0419	1.991	0.1585
Farm income X ₉	0.0722	4.900	0.0415**	0.0084	4.027	0.2614
Distance X ₁₀	-0.0351	0.005	0.4974	0.2976	7.497	0.0063*
Constant	1.005	0.164	0.5638	4.1986	0.429	0.5212
McFaden R ²			0.5721			0.6435
Log-likelihood			-138.467			-154.355

Source: Author's Computation, 2017



EFFECTS OF JOB HARZARDS ON OIL PALM PROCESSORS IN OSUN STATE, NIGERIA: IMPLICATION FOR YOUNG FARMERS

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Abstract

The study was carried out in Osun State, Nigeria; a multistage sampling technique was used to select five political wards from three Local Governments Areas using snow balling technique, to select 120 respondents for the study. The study revealed that majority of the respondents were female, married with age range of 35 to 45 years. Majority were primary school certificate holders, with 6-8 years of experience. Majority of the respondents find few tasks tedious, and are exposed to flying objects, sharp objects, hot objects and soothe inhalation during processing. Processors encountered breathing problem, headache, fatigue and general body pain due to long stretch of work over a period of time. Processors were exposed to various harzards with little or no precautionary measures.. An appropriate combination of social and environmental assessments to effectively address the constraints identified, environmental and health needs of the processors should be conducted by the Community members committee or Non-governmental agencies. It is recommended that an educational campaign be launched for oil Palm processors for enforcement of safety regulatory measures to control the occupational hazards in the industry and among farmers.

Key words: Harzard, Job, Oil Palm Processors, Osun

INTRODUCTION

Palm oil is used for food ingredients such as margarine, shortening, bakedgoods, and candies. Palm fruit is naturally reddish in colour because of a high beta-carotene content gotten from the mesocarp and palm kernel oil derived from the kernel of the same fruit (Omobuwajo *et al.*, 1997). Processing of oil palm fruits to palm oil involves the reception of fresh fruit bunches from the plantations, sterilizing and threshing of bunches to free the palm fruit, mashing the fruit and pressing out the crude palm oil (Edem, 2002). The crude oil extracted is further treated to purify for storage or export. Palm oil processors of all categories go through these unit operational stages but may differ in the level of mechanization of each unit operation. Also, the scale of operations differs at the level of processing and product quality control that may be achieved by the method of mechanization adopted, (Kuwar, 2001).

Hazards are general elements capable of causing or inflicting injuries on an individual, it may cut short the life span of the concerned individual. Occupational hazards can be said to be the working conditions that can lead to illness or death (Arungwa, 2015). People who engage in occupations which pose a high level of risk such as oil palm processing should be well paid and compensated for the dangers involved. Processing industries in Nigeria are mostly small scale businesses, where most proprietors are struggling to survive without taking into the account the risk involved or not using the best precautionary methods. Palm oil processing industries in the study area are wide spread, and serve as one of the income-generating activities of the people. Each stage of oil palm processing, involves hazards which local processors do not pay attention to. Such hazards are detrimental to safety or health of

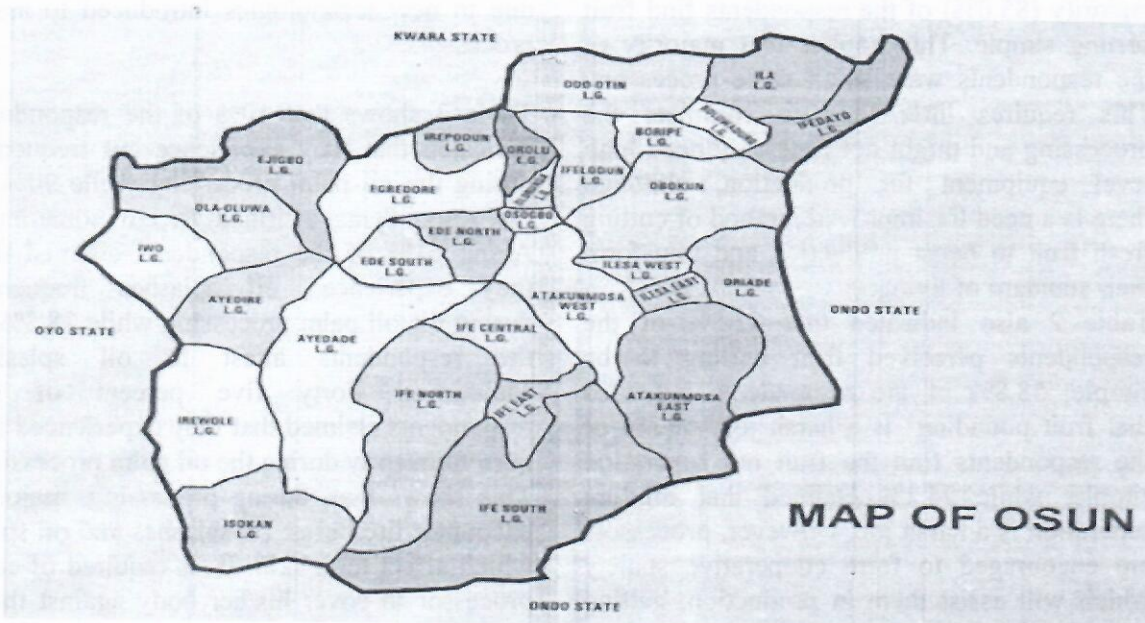
processors. In view of the foregoing, this study intended to

- (a) examine socio-economic characteristics of the respondents in the study area,
- (b) investigate tediousness of the oil palm processing,
- (c) examine job hazards exposed to during oil palm processing, and
- (d) determine the effect of job hazard on oil palm.

METHODOLOGY

The study was carried out in Osun State, Nigeria; a multi stage sampling technique was used. Stage one, three Local Governments were selected from 30 Local Government areas in Osun State. Stage two, Five political wards were purposively

selected in each of the three local Governments namely Ibode Ose, Obokun and Ilesa, which were known for oil palm production. Stage three, a snow balling technique was used to select 150 respondents for the study (30 per local government). However, 120 questionnaires were correctly filled. The survey was carried out by administering questionnaires which sought to capture respondents' personal data, knowledge on processing and occupational hazards. The secondary data include information from published literatures, conference proceedings, journals, articles, bulletins, newspapers, and other relevant texts. The data gathered from this study were subjected to both descriptive and inferential statistical tools.



RESULTS AND DISCUSSION

Table 1 revealed that there were more female involved in oil palm processing than their male counterparts. Male oil palm processors made up 36.7% of the respondents, while 63.3% were females. Majority (51.7%) of the processors were between ages 36 and 45 years. Also, there were more married respondents (71%) than singles (16%). This implies that processors were young, active and female dominated, which agreed with Oyegbami *et al.*

(2010) finding that majority of cassava processors were women in Southwestern Nigeria. Table 1 indicated further that 61% of the respondents had primary education, Work experience of the respondents indicates that 53% engaged in palm oil processing for 6-8 years. This implies that the low level of education of respondents will relatively have effect on adoption of innovation in processing, although their work experience at the oil palm



processing may have contributed to the ability to produce more.

Also, many 64.2% of the respondents earned between ₦5,000 and ₦10,001 monthly. This implies that the monthly income may adversely affect their standard of living considering the economic situation of the country at this time, when inflation rate is high.

Table 2 shows that majority (90.0%) of the respondents claimed that cutting of fresh fruit bunch is tedious, 90.1% of the respondents find the post-harvest transportation of bunches simple, 68.3 % of the respondents find the detaching of fruits from spikes simple and majority (85.0%) of the respondents find fruit sorting simple. This implies that majority of the respondents were small scale processors. This requires little time to complete the processing and might not necessary need high level equipment for production, although there is a need for improved method of cutting fresh fruit to boost production and transform their standard of living.

Table 2 also indicated that 82.5% of the respondents perceived fruit boiling to be simple, 58.8% of the respondents indicated that fruit pounding is a harsh job, 68.3% of the respondents find the fruit nut separation simple, while 74.1% claimed that mixture separation is a harsh job. However, processors are encouraged to form cooperative society which will assist them in production, getting new equipment and accessing credit from financial institution.

Table 2 furthermore indicates that majority (41.6 %) of the respondents claimed that the clarification (boiling and mixture) was tedious whereas 79.2% of the respondents found packaging to be simple. However, interaction with the processors showed that new technologies may be introduced to assist them in packaging their products. Majority (68.3%) of the respondents perceived detaching of fruits from spikes was simple, on the other hand 85% of the respondents find the fruit sorting simple while 82.5% of the respondents find the fruit boiling simple. This might be due to the level of production which requires little

efforts and traditional methods to complete the task.

Also, 68.3% of the respondents perceived fruit nut separation as simple and 11.9% of the respondents claimed fruit nut separation was tedious. Furthermore, 61.7 % of the respondents claimed that clarification (boiling and mixture) was harsh and 44.2% of the respondents found that decanting oil is simple. This might be due to the level of production, equipment and type of technology used by the processors. Table 2 indicated that majority of the respondents claimed that second boiling (79.2%), reheating (81.7), Fiber nut disposal (58.3%), packaging (79.2) and storage container (75.0%) were simple. This may be due to new technologies introduced to assist processors.

Table 3 shows that 10% of the respondents indicated that they experience cut frequently during the oil palm processing while 90% of the respondents affirmed to cut sometimes. About 61% of the respondents claimed that they experienced oil splashes frequently during the oil palm processing while 38.3% of the respondents attest to oil splashes sometimes. Forty five percent of the respondents claimed that they experienced fire burn frequently during the oil palm processing. This shows that, during processing, majority encounter fire burns, oil splashes and oil spills which affect their skin. It is required of each processor to cover his/her body against these hazards. Table 3 shows that 15% of the respondents agreed that they experienced cut from sharp objects frequently during the oil palm processing, while 45% of the respondents attest to cut from sharp objects sometimes. This shows that during processing majority of the processors were exposed to flying and sharp objects. This may have been affecting their eyes, legs and heads and cost much to be treated in the hospital.

Table 3 shows that 50% of the respondents claimed that they experienced burns from hot objects frequently during the oil palm processing, 87.0% of the respondents attest to inhalation of sooth sometimes. This shows that during processing majority of the processors



were exposed to hot objects and soothes inhalation. This might affect the health of processors. About, 78.0% of the respondents claimed that they experienced noise pollution frequently during oil palm processing whereas 94.2% of the respondents attest to standing and working for a very long time in the sun frequently during the oil palm processing. This shows that processors were exposed to noise which might have effect on their ear drum and most of them complain of back pain, ache, among others, due to the duration of the job. Environmental effects on processors were bad odour, smoke during the oil palm processing, outlets blockage and oil palm particulate. Respondents were affected by the bad odour from the staled oil after the processing, inhaling of the smoke which affects their lungs.

Table 4 revealed that 88% of the respondents experienced abdominal pain once in a while as a result of stress in processing, 65.8% of the respondents experienced eye problem once in a while as a result of splashes and dusts and 84% of the respondents answered negatively to coughing although some do have it seldomly. Majority (68%) of the processors experienced breathing problem once in a while, 36.7 % seldomly experienced headache, 91.7% experienced fatigue frequently and 93% claimed to have general body pain frequently. This shows that processors encounter breathing problem, headache, fatigue and general body pain because they are involved in a long stretch of work over a period of time. This will adversely affect their performance at work resulting in ill health and eventually leading to low productivity. Oyegbami et al. (2010) in a study on cassava processing noted that cassava processing has led to various pathologies ranging from general body aches, pains, fatigue, to high body temperature due to inhalation of smoke in the roasting environment.

Implication for young farmers

Oil palm is one of the important food crops for Nigeria because of its important products such as palm oil, palm kernel oil, palm kernel cake, palm wine and broom.

However, the study shows that young farmers (majority who are married women) were involved in oil palm processing, with low level of education, implying low level of adoption and utilization of improved technologies. Also, each stage of oil palm processing involves hazards that are detrimental to safety or health of processors, therefore modern technologies should be introduced to reduce hazards and increase participations of young farmers. Farmers need skillful pruning techniques, skillful cutting for detachment of spikes from bunch, personal hygiene and clean environment, among others to ensure food safety and product quality culminating in more income from the value added to their products. Therefore, Young farmers need training on handling of newly introduced technologies and at affordable price which will trickle down to reducing poverty and gender empowerment

CONCLUSION AND RECOMMENDATIONS

Finding from the study shows that Frequent trainings of young farmers to ensure food safety and product quality culminating in more income from the value addition on their products are needed. Majority of respondents suffering from job related health problems which may or may not be connected to their work. Therefore an appropriate combination of social and environmental assessments to effectively address the constraints identified, environmental and health needs of the processors should be conducted by the Community members committee or Non-governmental agencies. It is recommended that an educational campaign be launched for oil Palm processors for enforcement of safety regulatory measures to control the occupational hazards in the industry and among farmers.

REFERENCES

Arungwa, O.S. (2015): Effects of Job hazard on Oil Palm processing in Ibokun Local Government Area in Osun State,



Nigeria Unpublished Bachelor of Agriculture thesis submitted to the Department of Agricultural Economics and Extension, Bowen University, Iwo, Osun State, Nigeria. Pp 7

Edem, D.O. (2002): Pam Oil; Biochemical, Physiological, Nutritional, Hematological and Toxicological aspects. *A Review of Plant Foods.Human Nutrition*. 57: 319-341.

Kuwar, R.N. (2001): Tensile properties of oil palm empty fruit bunch-polyurethane Composites. *Eur. Polymer Journal*.,37(9):1759-1765.

Omobuwajo, T.O., Ige M.T., and Ajayi O.A. (1997): Heat transfer between the processing chamber and the Oil cake streams during screw expeller processing of Palm kernel seeds. *Journal.of Food Engine* 31(1): 1-7.

Oyegbami, A., G. Oboh, and O. Omueti.(2010): Cassava processors' awareness of occupational and environmental hazards associated with cassava processing in South-western Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*. 10(2): 2176–2186.



Table 1: Distribution of respondents according to their Socio Economic Characteristics

Sex	Frequency	Percentage (%)
Male	44	36.7
Female	76	63.3
Age		
26-35	45	37.5
36-45	62	51.7
46-55	13	10.8
Marital Status		
Single	19	16
Married	85	71
Divorced	4	3
Widowed	12	10
Educational level		
Primary	61	51
Secondary	49	41
Post-secondary	10	8
Working Experience		
2 years	6	5
3-5 years	41	34
6-8 years	63	53
9-11 years	10	8
Average monthly income ₦		
5,000-10,000	77	64.2
10,001-15,000	15	12.5
15,001-20,000	14	11.7
20,001-25,000	4	9.3
Above 25,000	10	3.3
Price on Medication ₦		
20,000	68	56.7
40,000	12	10
50,000	40	33.3



Table 2: Perceived tediousness of oil palm processing

SN	Oil palm processing stages	Simple (%)	Difficult (%)	Harsh(%)
1	Fresh fruit bunch, harvesting technique	0	12(10.0)	108(90.0)
2	Post –harvest transport	110(91.7)	2(1.7)	8(6.6)
3	Detaching of fruits from spikes	82 (68.3)	6(5.0)	32(26.7)
4	Fruit sorting	102(85.0)	6(5.0)	12(10.0)
5	Fruit boiling	99(82.5)	10(8.3)	11(9.2)
6	Fruit pounding	18(15.0)	67(55.8)	35(29.2)
7	Fruit washing	92(76.7)	16(13.3)	12(10.0)
8	Fiber –nut separation	82(68.3)	12(10.0)	26(21.7)
9	Mixture sieving	2(1.7)	29(24.2)	89(74.1)
10	Clarification (boiling & mixture)	5(4.1)	41(34.2)	74(61.7)
11	Decanting oil	40(33.3)	53(44.2)	27(22.5)
12	Second boiling	95(79.2)	15(12.5)	10 (8.3)
13	Reheating	98(81.7)	15(12.5)	7(5.8)
14	Fiber nut disposal	70(58.3)	23(19.2)	27(22.5)
15	Packaging	95(79.2)	15(12.5)	10(8.3)
16	Storage containers	90(75.0)	11(9.2)	19(15.8)

Table 3 Distribution of respondents based on job hazards exposed to during oil palm processing

Variables	Never Frequency(%)	Sometimes Frequency(%)	Frequently Frequency(%)
cutting fresh fruit bunches	-	108 (90)	12 (10)
Oil Splashes	-	46 (38.3)	74 (61.7)
Oil Spills	-	80 (66.7)	40 (33.3)
Fires Burns	21(17.5)	45(37.5)	54 (45)
Flying Objects	46 (38.3)	56 (46.7)	18 (15)
Sharp Objects	48 (40)	54 (45)	18 (15)
Use of Hot Objects	-	60 (50)	60 (50)
Soothes Inhalation	23 (19.2)	87(72.5)	10(8.3)
Noise Pollution	21 (17.5)	21(17.5)	78 (65)
Hand-mixing of clay bath	68 (56.6)	26 (21.7)	26 (21.7)
Standing and Working for long periods in sun	-	7 (5.8)	113 (94.2)

Table 4: Distribution of Respondents on effect of job hazards Oil Palm Processors

Related illness	Never (%)	Once in a while (%)	Seldomly (%)	Frequently (%)
Abdominal pain	14(11.67)	106(88.33)	0	0
Coughing	101(84.2)	19(15.8)	0	0
Eye problem	41(34.2)	79(65.8)	0	0
Breathing problem	38(32)	82(68)	0	0
Headache	19(15.8)	27(22.5)	44(36.7)	30(25)
Fatigue	0	3(2.5)	7(5.8)	110(91.7)
Sore throat	12(10.0)	74(61.7)	30(25)	4(3.3)
General(Body pain)	0	8(7.0)	0	112(93)
Malaria	67(55.8)	27(22.5)	0	26(21.7)



ECONOMICS OF SWEET ORANGE POST-HARVEST LOSSES AMONG YOUTHS AT MARKET LEVEL IN OSUN STATE, NIGERIA

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Abstract

The study analyzed the channels by which the youths in sweet orange marketing reduce post-harvest losses in Osun State. Multi-stage sampling technique was used to select 107 youths in sweet orange marketing. Data were gathered through well-structured interview schedule and analyzed using descriptive statistics, mean, standard deviation and diagram. The results showed that majority (93.46%) of the respondents were females, 91.59 percent were married and 80.37 percent of the respondents were within the age bracket of 31 - 40 years with a mean age of 21 ± 19.08 years. Results further revealed that majority (92.52%) had a household size range of 1 to 10 members; almost half (35.51%) had secondary school education. Four marketing channels were identified – local assembler (21.43%), farm-gate buyers (29.41%), wholesalers (97.62%) and retailers (50%). The study concluded that youth obtained sweet orange mostly from the wholesaler in order to reduce the losses. The study recommended that youth should minimize the length of channels in order to reduce losses in sweet orange marketing.

Keywords: Channels, Sweet orange, Marketers, Youths, Losses

INTRODUCTION

Fruits are natural staple food of man that contains all the necessary nutrients in sufficient proportion such as vitamins, sugars, essential minerals, fibers, antioxidants, little hormone precursors in addition to protein and energy in human daily diet that can help to keep a good and normal health (Raiyemo, 2014).

Sweet orange (*Citrus sinensis*) is the most common citrus fruit grown around the world. This is as a result of its sweet taste, importance in nutrition and medicinal attributes (Ezejiofor, Eke and Okechukwu, 2011). Global production of citrus as reported by Food and Agriculture Organization (FAO, 2014) is put at 3.9 million metric tonnes but 1.53 million tonnes of citrus product is lost annually as waste (UNCTAD, 2010). Nigeria is the world's 9th highest producer of citrus, providing 3 percent of the world's total production. Sweet orange is cultivated in 15 states of Nigeria: Benue, Nassarawa, Osun, Anambra, Ekiti, Imo, Kogi, Ebonyi,

Edo, Delta, Oyo, Kwara, Ogun, Taraba and Kaduna. Osun State is the third largest producer of orange in Nigeria as asserted by Olife, Ibeagha and Onwualu. (2015). While postharvest statistics are lacking and inconclusive due to the dearth of research; Federal Ministry of Agriculture and Rural Development (FMARD, 2013) affirmed that citrus fruits is one of the fruits affected most by post-harvest losses (PHLs) in Nigeria, recording about 40 –50 percent losses. This is reported by Jolaoso (2011) who asserted that more than fifty percent are lost in transit between the distance travelled from farm to the market in Nigeria. The short shelf life of fruit in general is a germane factor that has adverse effect on the economic value which makes their handling during distribution, transportation and marketing a special problem particularly in the tropics.

Post-harvest losses (PHLs) of perishable produce are however not easy to quantify. In some instances the marketer are forced to sell at a ridiculous amount and losses depending on the type of fruits, period of



harvesting and post-harvest handling activities.

PHL of fruit is the quantitative and qualitative loss at any stage along the commodity value chain which includes the change in the edibility and wholesomeness which prevents its final consumption (Adeoye, Odeleye, Babalola and Afolayan, 2009; Buyukbay, Uzunoz and Sibel Gulse Bal, 2011). PHLs tend to hinder sufficient distribution of and accessibility to fresh agricultural produce, thereby leading to a rise in the price of such produce. Post-harvest losses of perishable fruits occurring during handling, transport, storage, distribution and marketing are the major problems in agrarian economy. Besides resulting in low per capita and huge monetary losses, it also increases transportation fees hence marketing costs which serve as double loss to farmers and traders (marketers).

Not only are losses clearly waste of money, they also result to wastage of human effort, farm inputs, livelihoods, investments and other scarce resources. The most important aim of post-harvest handling is to preserve the products freshness by preventing loss of moisture, slowing down unwanted chemical changes and to avoid physical damage such as bruising.

FAO-World Bank, (2010) revealed that PHLs are high - thirty percent in cereals, fifty percent in roots and tubers and up to seventy percent in fruits and vegetables. From this statistics it can be seen that, post-harvest losses are higher for fruits and vegetables than for cereals and other root and tuber crops. This can be attributed to the highly perishable nature of fruits coupled with its short shelf life. This loss tends to make farmers poorer (Ahmed, 2013). Fruit marketers are faced with a major problem of losses which reduces their revenue. In Nigeria, losses in fruits such as banana, plantain, citrus (sweet orange) and pineapple are very huge due to the marketing system of fruits, the burden of about 75 percent of these losses is placed on the fruit marketers as reported by

Ahmed (2013). These losses are caused by a lot of factors like poor storage facilities of fruit, poor infrastructural facilities like good roads which affect transportation cost of the fruits and certain environmental factors such as temperature, humidity, and solar radiation (Buyukbay *et al.* 2011; Busari *et al.* 2015). This loss is currently posing a great challenge to the marketers who are constrained to offer it for sale at ridiculous price to avoid further spoilage.

Yusuf, Ukoje and Orire (2012) asserted that at the market, the seller is faced with problems of loss as the fruits have to be sold within the shortest time possible before they get spoilt.

The pattern of marketing channels for sweet orange in Nigeria (Osun State) evolved in response to the food production pattern characterized by a large number of peasant farmers with small, often less than one hectare, non-contiguous holdings. After harvest, marketers are faced with the problem of storage on the farm, market and transporting from farm to the nearby markets.

OBJECTIVES OF THE STUDY

The general objective of the study was to assess economics of post-harvest losses among sweet orange young marketers in Osun State, Nigeria. Specifically,

- i. describe the socio- economic characteristics of sweet orange marketers and
- ii. appraise the channels involved in marketing of sweet orange to reduce post-harvest losses in the study area.

METHODOLOGY

The study was conducted in Osun State, Nigeria. The state was created on 27th August, 1991, situated in the Southwestern region of the country and lies within the co-ordinates of latitude 7°30'N of the equator and longitude 4°30'E of the Greenwich meridian. It is bounded by Ogun State in the South, Kwara State in the North, Ondo and Ekiti States in the East



and Oyo State in the West. The State has 30 Local Government Areas (LGAs) which spread across the six administrative zones. Prominent fruits produced in the state include sweet oranges, grape, lemon, tangerine, plantain, banana, mango, pineapple, pawpaw, walnut, *albidium* (agbalumo), *chrysophyllum*, *Invingia gabonensis*. The choice of Osun State was premised on the high number of fruits marketers in the state (Durodola, Wahab and Ibikunle, 2017). The selection of sweet prange was based on the importance of the fruit in the study area.

Data were gathered through well-structured interview schedule administered on 211 young fruit marketers' age 20 to 40 years. A multi-stage sampling technique was employed to select the young marketers sampled for this study. The first stage was the purposive selection of one LGA from each of the six administrative zones of Osun State Agricultural Development Programme (OSADEP) based on high concentration of community markets where fruits are prominently sold, making a total of six LGAs. The second stage involved a random selection of three community markets from each of the LGAs where there was availability of many fruit marketers, making a total of eighteen (18) community markets. At the last stage, 12 retailers were randomly selected from the community markets, giving an overall sample size of 360 fruit marketers. Out of these fruits marketers, 107 youths that were sweet orange marketers representing 49.54 percent of the total population. Descriptive statistics such as frequency counts, percentages, mean and standard deviation

Results and Discussion

Socioeconomic characteristics of the respondents

Results of analysis in Table 1a showed that majority (93.46%) of the young sweet orange marketers interviewed were females. This indicated that fruit marketing and post-harvesting handling is in the domain of female gender. The dominance of the females in fruit marketing activities might be because it requires small capital

to start. This affirms Adekanye (1988) and Wahab *et al.* (2017) findings that women dominate food stuff marketing in Osun State. The mean age of the youth marketers was 20.87 ± 19.08 years. Majority (80.37%) were within the age of 31 and 40 years. This implies that marketers whose age range between 31 and 40 years are more involved in fruit marketing among the fruits marketers interviewed. The import of this finding is that the marketers are in their active age and they can do their business with youthful strength. This is when they are likely to be more energetic and willing to take risks that are related with marketing with the hope of improving their socio-economic status conditions. This is in agreement with Wahab *et al.* (2017) findings that majority of fruits marketers are middle aged.

The results in Table 1a also indicated that majority (91.59%) were married. The import of this finding is that most of the marketers have responsibilities and fruit marketing serve as source of earnings for the running of the family. This is in line with Wahab *et al.* (2017) which states that majority of fruits marketers in Osun State were married. Results on religious affiliation showed that 59.81 percent practice Islamic religion compared with 40.19 percent of adherents of Christian religion. The household size distribution revealed that majority (92.52%) had between 1 and 10 persons living with them with a mean household size of 6.09 ± 2.90 . The finding showed that the marketers have larger household size. This supports the findings of Mbuk *et al.* (2011) who state that fruit marketers had a large household size in Nigeria (Osun state inclusive). The results in Table 1a further showed that majority (35.51%) spent between 7 to 12 years schooling. This result asserted that most of the fruit traders had secondary school education. This finding is in agreements with Mulualem *et al.* (2015) that reported that fruit marketers have secondary level of education meaning that literate traders find it relatively easier



in their dealing with people, more especially, in the exchange process.

Results in Table 1b revealed that the mean years of sweet orange marketing experience was 2.49 ± 1.03 years. Majority (56.07%) has been in sweet orange business for more than 6 years implying that they have practical marketing experience on the different fruit crops handled. The more experienced the sweet orange retailers are, the lesser the losses and the more profit returned would be when compared to the less experienced ones since they can utilize the acquired experience to make important handling decisions as well as make quick contacts with customers to ensure that fruits are sold quickly. This finding agrees with Adewumi *et al.* (2009) and Busari *et al.* (2015) that revealed marketing experience of fruit marketers range from 7 to 11 years.

The Table also revealed that the mean annual income was $\text{₦}7,690.23 \pm 1,207.34$. More than fifty percent (55.14%) earned the range of $\text{₦}50,000 - \text{₦}200,000$ per annum. This implies that sweet orange retailing among the youths gives good returns. In Table 2, the mean distance travelled by retailers was 2.23 ± 4.35 Km. Majority (86.92%) travelled less 6 Km. It implies that the retailers travelled shorter distance to purchase fruits and bring to the market. This supports the findings of Ayandiji, Adeniyi and Omodiji (2011) that reported that the shorter the distance of the farm/source to the market, the longer the time it will take the produce to get to the market and this would increase postharvest losses and reduces the returns to marketers. This is due to the congestion of the produce when overloaded in vehicle will build-up heat which causes physical injury such as vibration, compression and this conversely affect the quality of the fruit.

Marketing channel for sweet orange to reduce PHLs

Channels of distribution or marketing channel is a set of individuals which facilitate the transfer of good title (sweet

orange) from producer to the final consumer. The analysis of sweet orange marketing channel was meant to provide systematic knowledge of how sweet orange flows its place of production to the final consumers. The producer and the final consumer both perform some activities they are also part of every channel but are not under study for this paper. Four marketing channels were identified for sweet orange at the retail stage. Channel comparison for sweet orange was done based on the percentages of the products that passed through each channel. However, it should also be well-known that each of the percentage shows the amount of sweet orange (in %). sold; they move through each of the channels from the producers to consumers (Figure 1).

The channel of Producer \Rightarrow Wholesaler \Rightarrow Retailer \Rightarrow Consumer measured 97.62% as the highest, followed by Producer \Rightarrow Retailer \Rightarrow Consumer which measured 50% in that order.

CONCLUSIONS

Sweet orange is a prominent fruit marketed by youths in Osun State. They adopt the method of buying from wholesalers and producers in order to reduce losses, bring good returns which improve their welfare. Government's should build and repair worn out roads, and also construct new ones, which will in turn bring about reduction in the cost of transportation and minimization of fruit loss.

REFERENCES

- Adekanye, T. O. (1988). The Markets for Foodstuffs in Western Nigerai, Readings in Agricultural Marketing In: Adekanye, T. O. (ed.), 12 – 22.
- Adeoye, I.B., Odeleye, O.M.O., Babalola, S.O. and Afolayan, S.O. (2009). Economic analysis of Tomato Losses in Ibadan Metropolis, Oyo State, Nigeria, *African Journal of Basic and Applied Sciences* 1(5-6): 87-92.



- Adewumi, M. O., Ayinde, O. E. Falana, O. I. and Olatunji, G. B. (2009). Economic Analysis of Post-harvest Losses among Plantain/banana Marketers in Lagos State, Nigeria, *Nigerian Journal of Agriculture, Food and Environment (NJAFE)*, 5(2-4), 35 – 38.
- Ahmed, D. A. (2013). Post-harvest Losses: Making Nigerians Farmers Poorer. 21st November 2013, Hits 530 post harvest losses.
- Ayandiji, A, O.R. Adeniyi and D. Omidiji (2011). Determinant Post-harvest Losses among Tomato Farmers in Imeko-Afon Local Government Area of Ogun State, Nigeria, *Global Journal of Science Frontier Research*. 11(5):23-27.
- Busari Ahmed O., Idris-Adeniyi K.M. and Lawal A.O. (2015). Food Security and Post-Harvest Losses in Fruit Marketing in Lagos Metropolis, Nigeria. *Discourse Journal of Agriculture and Food Sciences*. www.resjournals.org/JAFS. 3(3): 52-58.
- Buyukbay, E. O., Uzunoz, M. and Sibel Gulse Bal, H. (2011). Post-harvest losses in tomato and fresh bean production in Tokat Province of Turkey. *Scientific Research and Essays*. 6(7): 1656-1666.
- Durodola, O. S., Wahab, M. J. and Ibikunle, D. R. (2017). Assessment of Post-harvest Losses of Fruits during Marketing in Osogbo Metropolis, Osun State, Nigeria. 1(1): 1 – 5.
- Ezejiofor, T., V. Eke and R. Okechukwu (2011). Waste to wealth: Industrial raw materials potential of peels of Nigerian sweet orange (*Citrus sinensis*). *African Journal of Biotechnology*. 10: 6257-6264.FAO (2014)
- FAO–World Bank (2010). Reducing post-harvest losses in grain supply chains in Africa. Report of FAO–World Bank Workshop held from 18–19th March, 2010 in Rome, Italy. 120p.Ahmed, 2013
- Federal Ministry of Agriculture and Rural Development (FMARD) (2013). Nigeria’s Horticulture industry set for A Leap. http://www.fmard.gov.ng/news_inside/36. Accessed 10th April 2015.Jolaoso (2011)
- Jolaoso, M. A., Onwuala, A. P., Ode, F. K. and Bamikole, G. B. (2011). Citrus Production and Processing in Nigeria in Nigeria, RMRDC Monography Series No. 003, ISBN 078-978-915-003-8.
- Mbuk, E. M., Bassey, N. E., Udoh, E. S. and Udoh, E. J. (2011). Factors Influencing Post-harvest Losses of Tomatoes in Urban Market in Uyo, Nigeria, *Nigeria Journal of Agriculture, Food and Environment*, 7(2), 40 – 46.
- Mulualem Azene Mebratie, Jema haji, Kebede Woldetsadik and Amare Ayalew (2015). Determinants of Post-harvest of Banana Loss in the Marketing Chain of Central Ethiopia. *Food Science and quality Management*, 37, 52 - 64
- Olife, I. C.,O.A. Ibeagha & A.P. Onwualu (2015). Citrus Fruits Value Chain Development in Nigeria. *Journal of Biology, Agriculture and Healthcare*. 5(4): 36-48.
- Raiyemo, D. (2014). Production of citrus fruits in Nigeria: Problems and Prospects accessed on Eduresoure



World
 (<http://www.Eduresoureworld.com/2013/08/fruits-are-natural-staple-...>) on 12/4/2014

Invention of Scientific Journal,
 1(1), 1 – 5.

UNCTAD. 2010. Citrus fruit: characteristics Agriucultural Products. United Nations

Yusuf, O.R., J.A. Ukoje and I.O. Orire (2012). The Dynamics of Rural-urban Interaction in Sustainable Access to Fruits and Vegetables in Zaria, Nigeria being a paper presented during the 54th Annual Conference on the Association of Nigerian Geographers held at the Kano State University of Science and Technology, Wudil, Kano State between 19th – 24th November 2012

Wahab, M. J., Durodola, O. S., Ibikunle, D. R. (2017). Comparative Study of Fruits' Post-harvest Losses and the Socio-economic Level of Fruits' Marketers in Osogbo Metropolis of Osun State, Nigeria, *International*

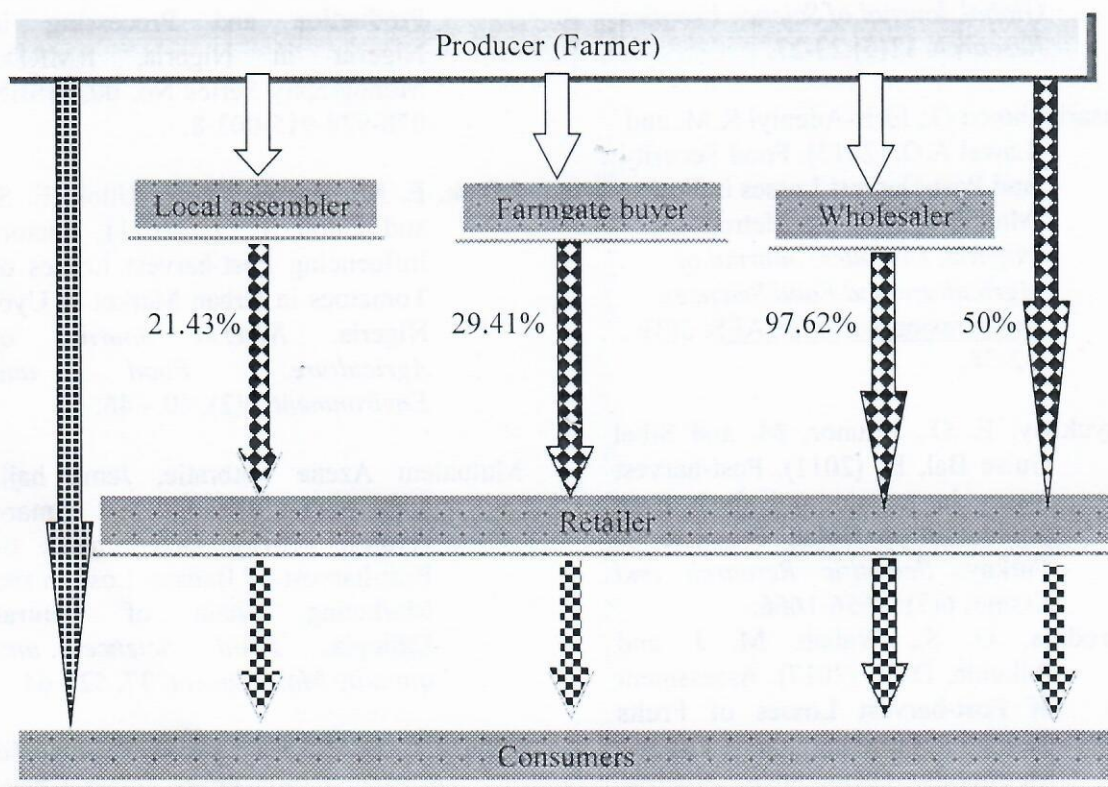


Figure 1: Marketing channel for sweet orange at the retail stage in Osun State, Nigeria

Source: Field survey, 2018

Note: The arrow Wholesaler Retailer Consumers



**Table 1a: Distribution of socio-economic characteristics of young fruit marketers
 (n = 107)**

Variables	Youths	
	Frequency	Percentage
Gender		
Male	7	6.54
Female	100	93.46
Age (years)		
20 – 25	3	2.80
26 – 30	18	16.82
31 – 35	24	22.43
36 – 40	62	57.95
Mean	20.87	
Standard deviation	19.08	
Marital Status		
Single	6	5.61
Married	98	91.59
Widowed	-	-
Divorced	3	2.80
Religion affiliation		
Christianity	43	40.19
Islam	64	59.81
Household size		
< 5	42	39.25
5 – 10	57	53.27
11 – 15	6	5.81
> =16	2	1.87
Mean	6.09	
Standard deviation	2.90	
Years of formal education		
None	24	22.43
1 – 6	34	31.78
7 – 12	38	35.51
13 – 18	11	10.28
Mean	7.53	
Standard deviation	5.12	

Source: Field survey, 2018



Table 1b: Distribution of socio-economic characteristics of fruit marketers (contd.)
 (n = 107)

Variables	Frequency	Percentage
Years of marketing experience		
≤ 6	19	17.76
7 – 11	60	56.07
12 – 16	15	14.02
≥ 16	13	12.15
Mean	2.49	
SD	1.03	
Annual Income from fruit marketing (₦)		
≤ 50,000	29	27.10
50,000 – 200,000	30	28.04
201,000 – 250,000	4	3.74
≥ 251,000	44	41.12
Mean	7690.23	
SD	1207.34	
Distance of farms or sources of fruits to the market (Km)		
≤ 6	93	86.92
6 – 10	7	6.54
11 – 15	5	4.68
16 – 20	1	0.93
> 20	1	0.93
Mean	2.23	
Standard deviation	4.35	

Source: Field survey, 2018



BROOMS FOR GIRLS, CUTLASSES FOR BOYS: GENDER ROLES STEREOTYPES AND IMPLICATIONS ON THE FEMALE CHILD PARTICIPATION IN AGRICULTURAL PROGRAMMES.

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Abstract

All over the world, gender discourses and advocacies have continue to raise the awareness on the impact gender equity/equality has on every facet of human life stating over reaching implication a gender blind or gender biased stance portends. Agriculture as a field of human discipline has a significant role in the sustainability and development of societies; but gender role stereotyping where the farmer is always visualize as a man with opportunities and prospects in the discipline wrapped around the males or the boy child leaving the girl child in askance and without convictions on the prospects in the field should she venture into it. Also, cultural beliefs and expectations like the land and farm inheritances issues; and agricultural programmes without intentionally creating platforms for equitable participation that serves as leverage for the female citizen's are major concerns. This paper therefore takes a look at gender; and critique relevant societal perceptions and means of socialization that projects male child preferences and disadvantages the girl child which inadvertently affects their participation in agricultural programmes. In conclusion, gender roles stereotyping was discouraged; adopting appropriate child socialization means; and providing opportunities for intentional equitable access to agricultural programmes were discussed.

Key words: Gender, Socialization, Gender roles stereotypes, Female child, Agricultural programmes.

THEORETICAL AND CONCEPTUAL FRAMEWORKS OF GENDER AND GENDER ROLES STEREOTYPES

Gender issues and related topics have continued to take vantage positions in development parlance. This is undeniably traced to the growing realization in societies around the world of its deliverables to sustainable development which local, national and international agencies; governmental and non-governmental and organization has continued to advocate, negotiate and put in place intervention programmes for addressing it. Often there has been misconception on the concept of gender and sex but these two have distinctive explanations. Gender refers to socially constructed roles for male and female while sex is biological differences that are universal and attained at birth. Sex is a biological categorization based primarily

on reproductive potential, whereas gender is the social elaboration of biological sex. WHO views Gender as the socially constructed characteristics of women and men – such as norms, roles and relationships of and between groups of women and men. It varies from society to society and can be changed. UNESCO baseline definition of key concepts states that gender refers to the roles and responsibilities of men and women that are created in our families, our societies and our cultures. The concept of gender also includes the expectations held about the characteristics, aptitudes, and likely behaviours of both women and men (femininity and masculinity). Onyeonoru (2005) defines gender as the differentiation in roles between men and women which is different from sex but construed by society through socialization. While sex is a biological distinction and an anatomical



characteristic to distinguish males from females, gender is a social and cultural construct, found in meanings, beliefs and practices associated with masculinity and femininity. He argues further that Gender roles and expectations are learned; they can change over time and they vary within and between cultures. In Nwosu (2012), he states that historically, in the typical traditional African Society such as Nigeria, women are not only perceived as inferior to men but are marginalized and denied equal opportunities as the men; and women are treated as „lower gender“ or „weaker sex“. According to Chime (1998), the general belief is that the role of women starts and ends with running of the home and nothing more. Ani (2004), also explained that women constitute the group at the bottom of the ladder in many developing countries, especially in Africa, in respect of employment, poverty, education, training and status.

According to Nwosu (2012), despite the relative success that has been recorded in the enhancement of the status of women and the attendant significant role performance of women in Nigeria, the gender role gap between the male and female is still a far cry from being filled. The World Health Organization (WHO) gender policy (2002) defines gender roles as socially constructed roles, behaviors, activities and attributes that a given society considers appropriate for men and women. It implies cultural expectations and requirement for acceptability brought about by gender socialization. They are implicitly or explicitly nuanced and stated with rejection or punishment meted out overtly or covertly where deviance is suspected. *In fact, they are the* social and behavioral norms that are considered to be appropriate for people of a specific sex. Gender roles cut across every facet of human life with expectations laid down spanning clothing, food, association, relaxation, marital relationships, conjugal rights, thought pattern, inheritance rights to career choice among others. These roles are regarded as

social conventions to ensuring members of society have a clear view of expected attitude and behaviour of their societies however, the negative influence outweighs its positive contributions as a result of the aftermath effect of its rigidity. Although culture is dynamic, gender roles expectations in societies especially African societies have continued to maintain an unyielding and nonmalleable position over the years as it advantages the male while their female counterparts are disadvantaged. This situation persists despite the awareness, advocacies, consciousness raising and interventions to elevate the status of women and the girl child. Due to these culturally created, motivated and influenced expectations on roles stipulated for females and males; and what makes for femininity or masculinity, gender roles stereotypes occurs. Gender roles often determine the traditional responsibilities and tasks assigned to women, men, girls and boys. Gender roles reinforcement and preservation is sourced in its socialization and becomes problematic when stereotyped.

Gender stereotype is a generalized view or preconception about attributes or characteristics that are or ought to be possessed by, or the roles that are or should be performed by women and men. A gender stereotype is harmful when it limits women's and men's capacity to develop their personal abilities, pursue their professional careers and make choices about their lives and life plans. Harmful stereotypes can be both hostile/negative (e.g., women are irrational) or seemingly benign (e.g., women are nurturing). It is for example based on the stereotype that women are more nurturing that child rearing responsibilities often fall exclusively on them. Gender stereotypes have an influence on all of us – how we behave, what we wear, the interests we have, and how we relate to one another are all influenced by our society's ideas and norms about gender. Our families and friends, workplaces, communities, media,



advertising and other forms of popular culture all communicate messages, whether explicitly or subtly, about the roles men and women should play in relationships, communities, the world of work, their typical traits, and even how and when they should express emotions. They are culturally ingrained ideas about appropriate behaviours for males and females. Rigid gender stereotyping promotes inequity between the sexes and can set young people up to expect and accept power imbalances within relationships later in life even in life choices.

STEREOTYPES AND GENDERED SOCIALIZATION

Basow (2002) states that gender roles are constructed by every socializing agent and force in societies: parents, teachers, the media, religion, and so on. Socialization is an essential concept in societal development and cultural preservation. It is a process created for the acquisition and learning of attitudes, behaviors and knowledge required to be regarded as a member of a society. It is important for every society to ensure that children born into it learn the behaviour that makes them responsible members of the society and affords them to be exposed to the skills and aptitudes that makes for effective participation in its development. The family, school, peers and media are critical agents of socialization that shape the orientations and perceptions of the child either explicitly or subtly; consciously or unconsciously. However gendered socialization has become a concern. Whether we are aware or unaware of the impact of gender socialization on our attitudes, perceptions and sometimes aptitude; and our personality today, there is no mincing words on the influence it had; it is having; and the danger it portends. Gendered socialization serves as a major basis for show casing preferences among the sexes alongside the underlying patriarchal attitudes and behavior, as well as discriminatory gender norms and

structures. These forms the root causes of male child preference in human society.

Mussawar (2005) noted that numerous factors influencing son preference were socio-economic set-up of the society, cultural beliefs, literacy, lesser opportunities for women jobs, cultural restrictions on women, family size, male dominance and their perception as earning heads of the households and intact/shared relations with the family as compared to daughters who would otherwise leave their families soon after getting married. This preference has continued to disadvantaged women and the girl child in different areas; one of such is the land ownership and inheritance rights. In a household, the male or son is given or entrusted with the right to inheritance and where there are no sons, another male figure to the deceased steps in. The daughters are given little or no right to inheritance and where this is in place; restrictions and limitations are in place to disadvantage her. This situation is same in patrilineal or matrilineal community systems that even when some women own lands, they prefer to bequeath it to their sons; and when they do so for their daughters, it is usually with the condition that she owns it until she is married. *Estudillo et al (2001)*. This trend in male or son preference and the inheritance rights in families contribute to the gendered socialization in agriculture.

Women's participation in agricultural programmes cut across several forms and types of agricultural programmes. In *Ovwigho and Ifie (2014)* it is stated that in Africa and some developing countries, women play a significant role in production and processing of agricultural products. In sub-saharan Africa, agriculture sector which has women to be the highest persons involved will not be a gain saying that food security can be determined by women. Nigeria for example is largely dependent on women's involvement in agricultural activities such as land preparation for farming; planting of crops and vegetables; weeding, harvesting,



processing of harvested crops and storage; transportation of agricultural produce by head portage, fishing, fish processing and marketing of sea foods, processing and sale of dairy products and homestead livestock husbandry. However, due to the gendered issues in agriculture the efforts and roles of women are under played and underappreciated as they are largely regarded as invisible farmers and men as the visible farmers. This cannot be severed from gendered socialization which inadvertently promotes this in societies with relative prevalence.

Although gendered socialization cut across all disciplines and facets of human life, its impact in agriculture is our focus. Agriculture has always been a significant factor in the sustainability and development of human society. It wields an important power around the world so that its productivity can affect a nation's economy and lead to the attainment of sustainable development. Farming is an important activity in agriculture in different communities among other areas that it has often been synonymously regarded as agriculture. However, gendered identities remain unchanged in farming activities. Farming is presented and implied as a male occupation that when any male ventures into it, they are seen as unique individuals. Also, the presentation of the media of farming as a male preoccupation as seen in prints and visual representations. Shortall (2010) states that men continue to predominantly inherit land, despite national variations in how the legal transfer of agricultural land is regulated while agricultural media mainly features men; and Trauger *et.al* (2008) emphasized that extension training services are still predominantly orientated towards men. He argues further that the socially constructed identities of women as home makers and farmers' wives, means that they frequently do not obtain a knowledge transfer appropriate to their farming roles; resulting in women farmers being underserved in agricultural education and technical

assistance while prevalent, stereotyping of gender roles makes women themselves to often view training groups and programmes as being for men and feel unwelcome and conspicuous in this space. In essence, even agriculture extension workers do not always see women as 'authentic' farmers, because they do not occupy outdoor space and hence do not invite them to training initiatives or address programmes to their work (Barbercheck *et al.* 2009).

CONCLUSION

It is clear that gender stereotypes reinforced and preserved by gendered socialization can be a constant challenge to provide children with the opportunity to access a variety of interests free from the judgement of others. While children's understanding of gender is influenced by a wide range of sources; research shows that parents who are young children's first and primary source of information and learning are the most influential when it comes to gendered socialization. Children learn about gender from observing their parents and how they interact with each other and other adults. Hence, for the girl child who observes how women's contributions are perceived; studies how role stereotyping in the society views women as persons solely responsible for home making; she analyses how respectable identity is attached to a marital relationship especially in African societies; and who sees the unmasked show that the most important thing involved in agriculture- land, is solely inherited by the boy child irrespective of his position within the family while the media projects programmes of agriculture to be exclusively for men and her boy counterpart; the girl child is inadvertently unable to see herself fit for and successful in such a field. Sometimes there are a few who tries to be resilient and their stance is met with societal bias and unfounded perceptions that agriculture is the exclusive profession for male that only exceptional women requires males permission and



support to prosper in it. These discourage the girl and her resilience wane with time. In addition, the school as an agent of socialization has a way of reinforcing gendered socialization that disadvantages the girl child and incapacitates her to make informed choice about a career in agriculture or participation in its programmes. This happens by encouraging activities that projects women and girls to be home makers and good at house-keeping alone. Instances are giving responsibilities that involve the cleaning of classrooms to girls alone while such is seen to be inappropriate for boys. Also, discouraging girls' involvement in farm work activities; and the sexist curriculum in agricultural subjects evident in textbooks and the use of language of instructions in Agriculture based subject classes are just to mention but a few instances.

RECOMMENDATIONS

Viewing every aspect of human life from a gender perspective is imperative because a gender balance society is a wholesome society. Inequitable activities and actions that allow a particular sex to be advantaged to the detriment of the other sex is dangerous and cannot produce wholesome societies. Also, development in any field of human enterprise will be hampered by such. The case of the female child resonates this. Gender role socialization agents in the society must be willing to play their roles effectively without any colour of bias. Also, the government at all levels and non-governmental agents and partners for development have equal important role to play. Hence the recommendations below:

- Families should shun male child preference and address issues that promotes this perception such as the belief that female child do not bear or promote her father's name after marriage. Hence, girls or women who are willing to keep the name should be allowed and encouraged without stigmatization

- Land inheritance rights like other inheritance rights should not exclude women or the girl child in her family.
- Women and girls should not be projected as the only one suitable for household chores and home makers. Families should involve both the boy and girl child in household chores.
- Parents should encourage the girl child to participate in farming activities for sustained interest in the field; and encourage her to explore opportunities that makes for a viable career in it.
- Government agricultural policies, programmes, trainings and funding opportunities at local, national and international levels should intentionally make equitable platforms for women and girls to participate in and access it.
- Schools should encourage more girls to participate in Agriculture as a subject.
- Sexist curriculum portrayed in textbooks and language of instructions should be discouraged forthwith while those that are gender balanced be in circulation to encourage girls' participation.
- Media representation of farmers should be intentionally gender balanced.

REFERENCES

- Alston (1998) Financing agricultural R&D in rich countries: what's happening and why. <https://onlinelibrary.wiley.com/journal/14678489>.
- Ani, A.O. (2004) Women in agriculture and rural development. Maidugiri: Auilla Publishers, pp.158.
- Barbacheck, M, Braiser,K., Kiernan, N.E., Sachs, C., Trauger, A., Findies, J., Stone, A., and Moist, L. (2009). Meeting the extension needs of women farmers: a



perspective from Pennsylvania. *Journal of Extension* 47/3.

Chime, C.T (1998) "African Women International Magazine" Vol. 3, No. 1:9-15.

Estudillio J.P. et al (2001). *The Developing Economies*, XXXIX-4 (December 2001): 366–94.

Massawar (2005). Son Preference and Its Consequences (A Review). *African Journal Online* 3, 269-280. *PDF | Socio-cultural Factors and Male-Child Preference among Couples in Ilorin-West Local Government Area of Kwara-State, Nigeria.* Available from: https://www.researchgate.net/publication/308266212_Socio-cultural_Factors_and_Male-Child_Preference_among_Couples_in_Ilorin-West_Local_Government_Area_of_Kwara-State_Nigeria [accessed Jul 09 2018]

Owigho, B.O, Ifie, P.A (2014) *IOSR Journal of Agriculture and Veterinary Science (IOSRJAVS)* Volume 7, Issue 1 Ver. I, PP 50-54 www.iosrjournals.org

Trauger, A., Sachs, C., Barbercheck, M., Kiernan, N. E., Brasier, K., & Findeis, J. (2008). Agricultural education: Gender identity and knowledge exchange. DOI :10.1016/j.jrurstud.2008.03.007.

Shortall, S. (2010) *Women working on the farm: how to promote their contribution to the development of agriculture and rural areas in Europe.* European Parliament, Brussels. IP/B/AGRI/IC/2010_090

Trauger, A . (2008) Social agency and networked spatial relations in sustainable Agriculture. *Area* 41(2): 117-128.



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