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# Involvement of Women in Oil Palm Processing in Ile-Oluji / Oke-Igbo Local Government Area of Ondo State, Nigeria

**Abstract:** This study assessed the involvement of women in oil palm processing in Ile-Oluji/Oke-Igbo Local Government Area of Ondo State where 120 women palm oil processors were sampled. Interview schedule was used and the data were analyzed with descriptive statistics and Chi- square analysis. Results revealed that respondents were still in their active age, 69.5%were below 40years of age, majority(85.8%)were married, while majority (60/7% were Christians, 60.0%were farmers, 35.8% were traders while 2.5% were hair-dressers. The results indicated that about 52.5% of respondents had 1-5 household members. Furthermore 35.0% of the respondents had14-19 years of farming experience. Chi-square analysis revealed that there is significant relationship between involvement of women in oil palm processing and some socio-economic characteristic like marital status ($x^2$ = 6.066); education ($x^2$ = 10.007) and income ($x^2$ = 43.008).Only digestion was significant among the processing methods. Advisory services to the women palm oil processors by agricultural extension agency to enhance adoption of modern integrated technology to reduce stress and increase productivity was recommended;

**Keywords:** Involvement, palm oil processors, women, productivity, integrated technology

## INTRODUCTION

Rural women play a vital role in food production and processing in Nigeria. Women in the rural villages are responsible for the processing and sale of farm produce.(Adenekan, *et. al.,* 2002), Policies to increase food supply in Nigeria need to recognize this fact and make efforts to raise women`s productivity. It is therefore important to identify the constraints of rural women in agriculture if their contribution to agriculture is to be enhanced (Ekong, 2003).

Agro-processing holds the key to rural poverty reduction and the prolific oil palm tree is a great source of raw materials for rural industries. In recent times, women oil palm processors appreciate the value of using machines and seek for more sophisticated ones. The current demand for palm oil mills is shifting from simple stand-alone unit operational machines to a more integrated system which is easy to operate and maintain. Machinery manufacturers have responded with machines that combine several operations into one operational unit. The complete range of operational machines, covering bunch stripping, fruit sterilization, digestion, pressing, clarification, oil drying and storage have been developed for processing applications (Daramola *et al,* 2002).

According to World Rain-Forest Movement (2001), oil palm is indigenous to the Nigerian coastal plains though it has migrated in-land as a staple crop. The crop cultivation serves as a means of livelihood for rural families. Indeed it is in the farming culture of millions of people in the country. The often referral of oil palm as a crop of multiple value underscores

its economic importance. All its ornamental components namely; the fronds, leaves, trunk and root are used for several purposes ranging from palm oil, palm kernel oil, palm wine, broom and palm kernel cake(Daramola, *et.al,* 2002). Laying credence to the economic value of oil palm, World Rain-Forest Movement (2001) identified the principal products of oil palm to be the palm fruit, which is processed to obtain three commercial products; namely palm oil, palm kernel oil and palm kernel cake.

Women processors can change or combine equipment to suit their purchasing power. Modern processing of oil palm fruit bunches into edible oil is practised using various methods, which may be grouped into four categories according to their throughput and degree of complexity (Ekong, 2003). These are the traditional methods; small scale mechanical units; medium scale mills and large industrial mills. Generally, processing units handling up to 2 tonnes of fresh fruits bunches (FFB) per hour are considered to be small-scale. Installations that process between 3 to 8 tonnes (FFB) per hour are termed medium-scale, while large-scale refers to mills that process more than10 tonnes (FFB) per hour (Fakayode, et.al, 2008).

Machinery manufacturing is a recent development in the West African sub-region and until recently it has not been possible to develop the sophisticated machines required to improve on traditional methods. Machinery manufacture in Africa must be carefully considered if progress is to be made in joining the rest of the industrialized world. Even now it is difficult to manufacture and sell bolts and coiled springs in the Central and West African sub-region (Oke,2002).

Palm oil is the principal source of much of the edible oil consumed in Nigeria and the rest of the West African region.A by-product of palm oil extraction is the palm nut which, when cracked, yields a kernel, containing a completely different kind of oil which can be used as a valuable substitute for cocoa butter. It is more usual that a completely different group undertakes palm kernel extraction. (Adenekan, *et. al,* 2002). Extracted oil can be used in the manufacture of soaps, margarines and candles. Other uses of palm oil include its use in the manufacture of baking fats, tin plate and sheet steel material.(Agwu, 2006)

**Statement of Problem**

Rural women in particular had been neglected by Extension service in the past, partly because of the erroneous belief that men are the farmers while women assist with the farm work especially during processing of agricultural products (Adenekan et.al, 2002). However there are variations in the nature and intensity of women's participation in agricultural activities between the various regions of Nigeria, depending on vegetation, religion and other socio-cultural practices. In 1985, the Nigerian Stored Products Research Institute estimated that between 30-50% of grains, roots and tubers and nearly 100% of the fruit and vegetables grown in Nigeria end up as waste because of poor processing and storage. Better processing can reduce these losses by making improved technology available in the rural areas. All over Nigeria, food processing and preservation activities are handled primarily by rural women, mainly using traditional methods which are tedious and often inefficient. (Agbelemoge, 2003; 2010)

Hitherto, in early 1960's, Nigeria's palm oil production accounted for 43% of the world production, but now only accounts for merely 7% of total global output. According to Agbelemoge, *et al.*,(2015)Nigeria lost her foremost place in oil palm exports to Zaire and regained it only temporarily in 1984 to 1985. As at today, the country has lost her place to Malaysia which is now the largest oil palm producer in the world. Beyond this problem, there has been a steady decline in the nation's domestic supply of palm oil. This has been attributed partly to the crude palm oil extraction method employed by palm fruit processors, which resulted into low quantity and poor quality oil.(Olagunju, 2008) The scarcity of palm oil at particular periods of the year leads to increase in the price because most women involved in the processing activities have the challenge of improved technology to increase their output. Also varying quality and drudgery involved in the processing of palm fruits are some of the important reasons responsible for the recurrent shortfall in domestic palm oil supply in the country. (Akangbe, *et.al*, 2011).

In the light of this it therefore becomes reasonable to assess the procedures evolved by women in palm oil processing in Ile-Oluji/Oke-Igbo Local

Government Area of Ondo state, Nigeria.

This study therefore described socio-economic characteristics of women oil palm processors and investigated methods of oil palm fruits processing in the study area; with this hypothesis that there is no significant relationship between the socio-economic characteristics of women oil palm processors and their involvement in oil palm processing.

## METHODOLOGY

**Area of Study.**
The study was carried out in Ile-Oluji/Oke-Igbo Local Government Area of Ondo State. The local government is made up of five major town namely Ile-oluji, Oke-Igbo, Bamikemo, Iyere and Lipanu. It is in the western part of Ondo state and is bounded in the East by the Ondo and Ifedore Local Government Areas and in the West by Osun state. The land mass is estimatedto be 500sqkm. The local government area is within the tropical rainforest but with luxuriant vegetation. It experiences high humidity and rainfall of about 1500 inches throughout the year. The inhabitants of the area are predominately Yoruba speaking people. They also speak their various dialects. Other inhabitants include the Hausas, Ebiras, Igbos, Urhobos, Ijaws etc.
The land is predominantly loamy soil which enhances large scale agricultural production of cash crops such as cocoa, oil palm and kola nutswhile other commercial crops grown in the area include cassava, maize, plantain, banana and fruits. Agro-allied industries such as sawmills, garri processing factory, weaving centre for traditionally-woven wears (aso-ofi) and dye stuff industries also thrive well in the area. The people of the area are mostly farmers and traders who engage in buying and selling of various agricultural products,

**Sampling Techniques and Sample size**
Multi-stage sampling technique was used for the study. The first stage involved purposive selection of two palm oil processing wards from the total of ten wards, that is,20% of the total ward. The second stage involved purposive sampling of six palm oil processing localities and the third stage involved random selection of twenty women involved in palm oil processing to give the total ofone hundred and twenty (120) respondents as the sample size.
Interview schedule was used to obtain information from the women oil palm processors. The interview schedule consists of information on socio-economic characteristics such as age, sex, marital status, religion, farming and processing experiences and processing activities practised in the study area. This interview schedule was administered on 120 randomly selected palm oil women processors in the study area. The descriptive statistics used included frequency tables, percentages and means while inferential statistic used was Chi-square.

## RESULTS AND DISCUSSIONS

**Socio-economic characteristics of respondents**
Majority of the respondents (88.3%)were less than 50 years of age while the remaining 11.7% were within the age of 50-59 years. This implies that young women that are agile and productive are involved in palm oil processing in the study area. The marital status of the respondents showed their larger percentage (85.8%) were married, 10% were single and 4.2% were divorced. This indicated that women involved in oil palm processing in the study area could be as a result of assisting their husband to meet the welfare need of the family as this is in line with Yemisi and Mukhtar (2009) that women are responsible for the bulk of food production as providers of food security and meaningful contributors to family income.
Mostof the respondents(69.2%)were Christians, 25% were Muslims while 5.8% were traditionalists. This implies that women involvement in oil palm processing were notreligion-biased.Majority of the respondents(60.0%)were into farming, 35.8% were traders, 1.7% were into sewing and 2.5% were hair-dressers. This indicated that most of the women oil palm processors had full concentration on oil palm processing which would improve their levelofoutputandalsoincreasethesupplyrateofpalm oilinthestudyarea.
Majority of the respondents (52.5%) had less than five people in their household, 25.8% had 5-9 household members, 16.7% had 10-14 household members and 5% had household members greater than 14. This implies that most of the respondents have less numbers of household members which

means reduced family labour and hired labour will increase their cost of processing. Majority of the respondents (52.5%) had farming experience of 5 years, 25.8%had 5-9 years experience, 16.7% had 10-14 years experience and 5% had more than 14 years experience. This indicates that women farmers in the study area were not new in the farming system and this is inline with Tolongbose, *et al.*(2005) discussion that number of experience in years of farming encourages higher level of adopting of new technologies. Majority of the respondents(52.3%) had primary education, 22.5% had secondary education and 16.7% had no formal education meaning they were not literate. This implies that majority of the women palm oil processors were literates which is in line with Tolongbose, *et.al*. (2005) that the higher the level of women farmers education the better their adoption of new techniques. Table1.

**Table1: Socio-economic characteristics of respondents**

| Variables | Groups | Frequency | Percentage |
|---|---|---|---|
| Age | 20-29 | 41 | 34.2 |
| | 30-39 | 41 | 34.2 |
| | 40-49 | 22 | 18.3 |
| | 50-59 | 14 | 11.7 |
| Marital | Married | 103 | 85.8 |
| | Single | 12 | 10.0 |
| | Divorced | 05 | 4.2 |
| Religion | Christian | 83 | 69.2 |
| | Muslim | 30 | 25.0 |
| | Traditional | 07 | 5.8 |
| Occupation | Farming | 72 | 60.0 |
| | Trading | 43 | 35.8 |
| | Tailoring | 02 | 1.7 |
| | Hair-dressing | 03 | 2.5 |
| Household Size | 1-5 | 63 | 52.5 |
| | 5-9 | 31 | 25.8 |
| | 10-14 | 20 | 16.7 |
| | 15-19 | 06 | 5.0 |
| Farming Experience | 1-5 | 38 | 31.7 |
| | 5-9 | 20 | 16.7 |
| | 10-14 | 20 | 16.7 |
| | 14-19 | 42 | 35.0 |
| Educational Status | Primary Education | 20 | 16.7 |
| | No formal Education | 64 | 53.3 |
| | Secondary Education | 27 | 22.5 |
| | Ordinary Diploma | 04 | 3.3 |

**Method of Processing**

All respondents (100%) made use of traditional method for their processing activities such as harvesting, chopping, sterilization, stripping, boiling of fruit, skimming, clarification, tank storage as well as drum storage. However,only38.3%of the women processors made use of modern method of digestion and only0.8% used modern mixing. This indicated that modern processing technology was not adopted by the women oil processors in the study area.Table2

**Table2:Distribution of respondents by the type of methods adopted for processing oil palm**

| | Traditional Method | | Modern Method | |
|---|---|---|---|---|
| Processing | Frequency | Percent | Frequency | Percent |
| Harvesting | 120 | 100 | _ | _ |
| Chopping | 120 | 100 | _ | _ |
| Sterilization | 120 | 100 | _ | _ |
| Stripping | 120 | 100 | _ | _ |
| Boiling Of Fruit | 120 | 100 | _ | _ |
| Digestion | 74 | 61.7 | 46 | 38.3 |
| Mixing | 119 | 99.2 | 1 | 0.8 |
| Skimming | 120 | 100 | _ | _ |
| Clarification | 120 | 100 | _ | _ |
| Tank storage | 120 | 100 | _ | _ |
| Drum Storage | 120 | 100 | _ | _ |
| Rubber storage | 120 | 100 | _ | _ |

**Testing of Hypothesis**

Ho: There is no significant relationship between the socio-economic characteristics of women oil palm processors and their involvement in oil palm processing. The study revealed significant relationship between some socio-economic characteristics of women oil processors and their involvement in oil palm processing; therefore the null hypothesis is rejected. The significance is shown in marital status ($x^2$=6.066, $p<0.05$); education ($x^2$=10.007, $p<0.05$) and income ($x^2$ = 43.008, $p<0.05$) which implies that married women were more involved in oil palm processing which serve as source of income to support their families. Increase income per month encourages the women to produce more palm oil in the study area. Table 3

**Table 3: Chi-Square analysis between socio-economic characteristics and women involvement in oil palm processing**

| Socio-economic characteristics | ?² value | df | p-value | Remark |
|---|---|---|---|---|
| Age | 32.743 | 30 | 0.381 | NS |
| Marital status | 6.066 | 02 | 0.048 | S |
| Years of education | 10.007 | 04 | 0.038 | S |
| Religion | 10.991 | 02 | 0.370 | NS |
| Occupation | 3.207 | 03 | 0.361 | NS |
| Processing experience | 13.910 | 15 | 0.532 | NS |
| Household Size | 19.864 | 12 | 0.099 | NS |
| Income per month | 43.008 | 27 | 0.026 | S |

## CONCLUSION AND RECOMMENDATION

All respondents (100%) made use of traditional method for harvesting, chopping, sterilization of their palm fruits, skimming, clarification, tanks storage, drums storage and rubber container storage for their palm fruits processing. Only few processors used modern method; which was digestion of fruits and mixing. There is significant relationship between women involvement in oil palm processing and some socio-economic characteristics like marital status, education and their income in the study area. All the various methods were not significant but only digestion method was significant. There is significant relationship between women participation in oil palm processing and constraints militating against the technologies in the study area. The study recommended that agricultural extension agency should empower women oil palm processors to enhance the adoption of modern integrated technology to reduce stress and increase productivity.

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