Gender perspectives on access to institutional credit and profitability of palm oil marketers in Abia state, Nigeria

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Abstract
This work critically analyzed gender perspectives on access to institutional credit among palm oil marketers in Abia State, Nigeria. One hundred and twenty palm oil marketers were selected using multi stage stratified simple random sampling technique; primary data were collected with the use of a well structured questionnaire. Descriptive and inferential statistics were used to analyze data collected. Majority (66.66%) of the male respondents accessed formal institution as major source of borrowing while majority (53.33%) of the female respondents accessed informal source of credit as their major source of borrowing. The result revealed that the estimated net returns of palm oil marketing by gender were ₦285,690.92 (females) and ₦287,467.96 (males) showing that palm oil marketing was profitable in the study area. The male marketers made more profit than their female counterparts but for every ₦1 spent, female marketers return on capital invested (₦2.65) was higher than that of male marketers (₦1.40) by ₦1.25. The results of the regression analysis showed that the coefficient of age for male and pooled had a direct relationship with profit at 5% level each. The coefficient for marital status for female, male and pooled had a direct relationship with profit at 10%, 5% and 1% levels respectively. Other significant variables include education, occupational status, amount accessed, interest rate and distance to source of credit. Based on the findings, Government should strengthen financial institutions such as the Bank of Agriculture to provide soft loans to palm oil marketers at very low interest rate.

Keywords: Gender perspectives, profit, access, palm oil, financial institution, marketers

Introduction
Gender is not just about women. It refers to the relations between men and women, both perceptual and material (FAO, 2005). It also refers to the economic, social, political and cultural attributes and opportunities associated with being male and female (OECD, 2008). It is not determined biologically as a result of sexual characteristics of either women or men, but is constructed socially. It is a central organizing principle of societies and often governs the process of production and reproduction, consumption and distribution. It roles are the socially ascribed roles of women and men, which vary among different societies and cultures, classes and ages, and during different periods in history (FAO 1997; Thea 2000). Gender-specific roles and responsibilities are often conditioned by household structures, access to resources, specific impacts of the global economy, and other locally relevant factors such as ecological conditions (FAO, 2005; Thea, 2000). However, its analysis seeks answers to fundamental questions such as who does or

uses what, how and why. Traditionally, roles in Nigeria are according to gender (Okoro, 1996; FAO, 2004). Again, men have the opportunity or right to rule, direct and control the use of available resources.

The biggest obstacle to gender equality in Sub-Saharan Africa is money; simply put, women have less of it. According to the World Bank (2007), 37% of women in the region have a bank account, compared to 48% of men. And, while the percentages are low for both sexes, what is troubling is that the gap has widened over the past several years, even as total financing available to the world's poor has increased steadily. Today, women dominate African agriculture, the continent's most important industry. But this has not translated into greater control of finances. Illiteracy, limited land ownership, and restrictions on agency and mobility all conspire to reduce rural women's access to farm financing.

Access to credit is one major link in the chain of agricultural development. For farmers to increase food production, they need better access to agricultural support system such as credit, technology, extension service etc. thus, for efficient access to credit their is need for organization that channels these services (FAO, 2007; IFAD, 2007). Provision of funds is one way of ensuring agricultural developments. The rural financial markets have not been enough to solve the credit needs of the farmers. Again, Nwaru, (2004) reported that agriculture cannot compete favorably with other sectors in terms of credit/loan acquisition from formal financial institution due to some certain problems inherent in the sector. The recognition of credit as a powerful instrument for the development of agricultural sector has led to a multitude of programmes on agricultural credit, cooperative and integrated rural development in the past few decades (Nwaru, 2004). Both men and women small holders and poor farmers rarely benefit from these programmes, in spite of their enormous potential and their crucial roles in agricultural production. Women in particular have insufficient access to productive inputs and support services (FAO, 2007). Despite the crucial role women play in the economic development of their countries, it is however, discovered that women have low business performance compared to their male counterparts (Akanji, 2006). Women access to and use of agricultural support is severely limited by the heavy burden on time triple responsibilities; productive activities (such as work in the fields), reproductive activities (such as child rearing, cooking and household chores) and community management. Again, they may be illiterate or lack independent legal status. Smallholder farmers, particularly women face more difficulties in obtaining credits as reported by IFAD (2007). This is a direct consequence of their lacking access to land, participation in development projects and extension programmes and membership of rural organizations, all of which are important channel for obtaining loans and credit information (FAO, 2007).

Financial exclusion is often said to be one of the main hindrances that women face in the developing world, standing in the way of women's economic progress and social advancement. It has been argued that a lack of access to formal credit retards empowerment and entrepreneurship among women, which impacts their ability to access formal education, secure decent jobs

and enter the workforce. Developing countries have put gender financial equality on the top of their agenda as credit is viewed as crucial in facilitating employment generation, skill development, education advancement and enterprise growth and expansion in a time of economic uncertainties and global financial crises. Given the insufficient financial products and services as well as weak financial regulation, Africa represents an especially challenging environment for women trying to access formal credit. In Sub-Saharan Africa, a number of studies point out that not only women find it more difficult to access formal financing than men (Johnson, 2004), but they are likely to be charged higher interest rates (Muravyev, Schafer and Talavera, 2007). In addition, they are less able to raise informal and formal venture capital than their male counterparts (Brush, Carter, Gatewood, Greene and Hart, 2004). In some cases, banks require signatures of a male family member in order to open a bank account for women who would allow them to access any financial services or products (Narain, 2009). This point to the ongoing discrimination and bottlenecks faced by women on the continent in accessing finance and other financial services, which would be an impediment to their participation in the formal economy.

Palm oil has traditionally been and will remain an essential diet of the people of Nigeria. Palm oil processing produces palm kernels, palm kernel cake for livestock feed, and palm kernel oil. It is also used as a raw material for the production of soap and pomade etc. With the introduction of improved and quick maturing varieties of oil palm, more farmers (both males and females) have been growing them through a plantation system which has been so successful in Nigeria (Opeke, 2002 and Omoti, 2003). There are significant gaps (i.e. maturity, risk and legal), both in terms of amount and accessibility, between the demand smallholders in the palm oil sector make for credit and the supply of that credit by banks and financial institutions. These gaps reduce the possibility of smallholders accessing formal credit, which in turn drives an informal local lending market with higher interest rates (Sahara, Haryadi and Nuning, 2017). Palm oil production and marketing play a role in the employment of labour in Nigeria. With increasing number of men and women in palm oil marketing and future prospects of expansion of plant area of oil palm and limited access to credit, it becomes imperative to examine the gender perspective of palm oil marketing and their access to credit.

Studies have shown that the reasons for the reluctance of banks and credit associations to extend credit to women is that they usually request for small loans which attract more administrative costs on the part of the lending institution, inadequate extension attention, lack of tangible collateral, high rate of illiteracy etc (FAO 2004). None of these studies that identified these factors was conducted in Abia State therefore, leaving an information gap on the factors influencing supply of credit by gender to the palm oil marketers, which this study intends to fill. Previous researchers on palm oil production in Abia State dwelt more on resource use and efficiency, profitability and comparative analysis for the economics of palm oil marketing, as well as costs and returns in palm oil production (Nwajiuba and Nwoke, 2001). Also, some studies have

shown that women create more enterprises than men (Godoy, 2005), in spite of the difficulties they face. However, there are little or no studies comparing profits in palm oil marketing activities carried out by gender for beneficiaries of institutional credit. Thus, this study aims at closing the gap in literature by examining socio-economic characteristics; major sources of credit, estimating the cost and net returns by gender of palm oil marketers that obtained credit; and determining the factors influencing profit of palm oil marketers that access institutional credit by gender in the study area.

Materials and methods

The study was carried out in Abia State. Abia state is one of the thirty six states of Federal Republic of Nigeria, created in 1996. The State lies between Longitude 04^0 45' and 06^0 07' North and Latitude 07^0 00' and 08^0 10' East. It is situated in the South-East geo-political zone of Nigeria and is bounded by Imo State on the West, Ebonyi and Enugu States on the North, Cross Rivers and Akwa Ibom States on the East and Rivers State on the South. The predominant soil of the area is sandy loam while the natural vegetation is the tropical rainforest and a climate characterized by two distinct seasons; the dry season and the wet season. Abia includes areas of oil palm bush and tropical rain forest in its southern part and woodland savanna in its hilly north. With its adequate seasonal rainfall, Abia has much arable land that produces yams, maize, potatoes, rice, and cassava. Oil palm is the most important cash crop and Umuahia, the state capital, has a palm oil processing plant. The formal and informal finance arrangements operate under different names across the state. Otu and Anyanwu (2003) and CBN (2005) noted that, a large number of rural dwellers rely on the informal sector for their financial services on the account of its relatively low information and transaction cost, easy access to low income groups, timeliness of operation, simplicity and flexibility in financial procedures notwithstanding its high interest rate.

Sampling technique

Study area

The population of the study consists of palm oil marketers that accessed credit in Abia State.

A multistage stratified sampling technique was used to select the representative sample. First stage involved purposive selection of one Local Government Area (LGA) from each of the three Agricultural zones in Abia State, making a total of three local Government Areas vis Isiala ngwa from Aba Agricultural zone, Bende from Umuahia Agricultural zone and Arochukwu from Ohafia Agricultural zone. This was based on having reasonable number of male and female oil palm marketers that obtains credit from the credit institutions in the Local Government Areas. Secondly, from each selected LGA, two communities were randomly selected, making a total of six communities. Lastly, from each community, 20 palm oil marketers were stratified into male (10) and female (10) based on the list of those that obtained loan from financial institutions, having obtained list of respondents who accessed credit, equal number of respondents from each group was randomly selected since the difference in percentage of male and female group was not much, thus making a total of 120 palm oil marketers.

Data collection

Data were collected from both primary and secondary sources. Primary data were obtained from male and female palm oil marketers using a well- structured questionnaire while secondary source of information was collected from published and unpublished literature such as journals, thesis, newspapers, magazines, annual reports of some agricultural establishments, textbooks and internet. Data were analyzed using descriptive and inferential statistics.

Model Specification

Gross margin/Cost and Return Analysis

NR = TR –TC……..(1)

Where: NR = Net Return (in Naira), TFC = Total Cost (in Naira)

Return on capital invested was also calculated. Return on capital invested measures the profitability of an investment. ROI greater than 1 indicates a potentially profitable venture and if less than 1, it indicates a potentially unprofitable venture (Nwaiwu *et al.*, 2012).

$$ROI = \frac{GM}{TVC} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where: ROI= Return on capital invested, GM = Gross Margin, TVC = Total Variable Cost.

Gross Ratio(GR) was calculated. Gross ratio is a profitability ratio that measures the overall success of the business. The lower the ratio, the higher the return per Naira invested (Jirgi *et al*., 2010)

$$GR = \frac{TME}{GI} \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where: GR = Gross ratio, TME= Total Marketing Expenses (i.e. Total Variable Cost), GI = Gross Income (Total revenue).

Net return is given as

$$NR = \Sigma PjQj - \Sigma_{j=1}^{m} Pk\,Xk + \Sigma_{k=1}^{m} PL\,Fl$$

Adopted from (Odii, 1998; Amaechi *et al.,* 2006)

Where NR= π= profit/(Per Year) (₦)
TR= total revenue(₦)
TVC= total variable cost(₦)
TFC= total fixed cost(₦)
Pj= unit price of the j^{th} palm oil sold(₦)
Qj= quantity of palm oil sold(litres)
Pk= unit price of k^{th} variable inputs used (₦)
Xk= quantity of k^{th} variable inputs(kg)
PL= unit price of fixed inputs used (₦)
FL= quantity of L^{th} fixed inputs(kg)
j= quantity of palm oil (litres)
m= number of variable inputs
i= fixed inputs
z= number of fixed inputs

The implicit form of the regression is stated as follows:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, ei) \quad \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

Where Y_1= Profit(net return) (N) for male palm oil marketers that accessed credit
Y_2 = Profit(net return) (N) for female palm oil marketers that accessed credit
X_1= Age (yrs)
X_2= Marital status (married=1, otherwise, 0)
X_3= Household size (numbers)
X_4= Educational attainment (yrs)
X_5= Occupational status (full time=1, otherwise, 0)
X_6= Marketing cost (N)
X_7= Marketing experience (yrs)
X_8= Amount accessed (N)
X_9= Membership of cooperative (yes = 1, no = 0)
X_{10}= interest rate/administrative charges (%)
X_{11}= distance to source of credit (km)

ei = Error term

Results and discussion

Socio - Economic Characteristics of the Respondents

Table 1 shows the distribution of respondents according to gender. Majority of the respondents (63 % male) and (65 % female) were within the age range of 26 - 55 years old respectively with means of 48years and 47years for male and female

palm oil marketers. This shows that majority of the palm oil marketers were still strong and agile. According to Schmidt, Chockalingam and Deniz (2005), age is very important in job performance. The findings are in agreement with Gaya et al. (2006) who observed that those involved in economic activities like oil marketers are in their economic active age. Credit is given to youths who are willing and ready to work (Gana *et al*., 2009).

Dikito-Watchmeiser (2001) opined that marital Status is an important factor in social rural participation and acceptance. The result of the marital status shows that majority of the respondents (65% male) and (55% female) were married while 17% of male and 28% of female were single. The implication of the finding is that marriage remains a valued culture in the study area. When spouses have similar goals and priorities, it seems reasonable to expect that they would have the support of their husbands to gain access to financial resources; Spouses that agree with each other are likely to pool their resources as marriage is perceived to confer responsibilities on individuals unlike their single counterpart who solely depend on their meager resources with little or no responsibility and might not be valued (Oladoja *et al*., 2008).

The result of the educational attainment shows that all the respondents attained one level of education or the other. This implies that the palm oil marketers are educated. This finding is in line with Cole *et al.* (2009) who reported that financial literacy depends on education level of marketers and with higher education level, marketers can have easy access to financial services.

The household size result shows that 77% of male and 73% of female respondents had household size of 5 - 12 persons. It implies that the palm oil marketers in the study area have large household sizes with mean of 6persons. Ugochukwu *et al.* (2003) noted that household size of seven tends to increase the amount of credit diverted to non –agricultural activities.

The distribution of respondents according to the marketing experience implies the number of year's palm oil marketer has been in the business. The result shows that 43% of the male respondents had 5 -8years of marketing experience with a mean of 6years while 28% of the female respondents have been into palm oil marketing for more than 8 years with a mean of 6years too. This shows that majority of the respondents were experienced in oil palm marketing for having been in the business for more than five years. The level of experience is an important factor as it is a major determinant of their managerial acumen (Eze *et al*., 2008).

Major source of credit

The result in Table 2 shows the distribution of respondents according to major source of credit accessed in the study area. Various financing schemes are offered by a diversity of formal institutions, such as banks, government bodies, cooperatives, and microfinance institutions, as well as by informal actors, primarily local traders, family and friends, rotating savings and credit associations (ROSCAs) etc. The schemes differ in terms of credit ceiling, interest rate, and period of credit/tenor, credit allocation, and costs to access credit.

The result shows that majority (66.66%) of the male respondents accessed formal institution as major source of borrowing while majority (53.33%) of the female

respondents accessed informal source of credit as their major source of borrowing. Oladele and Olawuyi, (2012) showed that gender was important in micro-credit access in Nigeria. The result is consistent with the findings of Akudugu, (2012) who reported that females are considered the most vulnerable, disadvantaged and above all, credit worthy and are therefore likely to opt for credit from informal sources than their male counterparts. Also, this result is in corroboration with Sahara, et al., 2017 who in a similar study reported that a number of smallholder oil palm farmers/marketers access credit informally from local traders and through a guarantor, and that this credit is often limited in amount. Also, a study by UNDP (2010), observed that most microfinance institutions are weak in their outreach, self- dependent and unsustainable.

Amount demanded and accessed

The result in Table 3 shows the distribution of respondents according to amount demanded and accessed from major source of credit in the study area.

Average amount demanded and accessed by female palm oil marketers was N48,500 and N11,000 respectively while average amount demanded and accessed by male palm oil marketers was N158,000 and N39,560. The result showed that amount of credit accessed for both female and male were less than amount demanded. The inadequate amount of credit granted to respondents might limit their capacity to finance their investment plans thereby affecting profit.

Net returns of palm oil marketing

The result in Table 3 shows the net return among male and female palm oil marketers in the study area. The result shows that the value of palm oil sold (i.e total revenue) for male and female marketers were estimated at N 495,135.80 and N 396, 108.63, respectively. The total variable cost generated was N 107, 894.35 (females) and N 205, 356.85 (males) and total fixed cost of N 2, 523.36 (females) and N 2, 310.99 (males) depreciated. This gave total cost of N 110, 417.71 (females) and N 207, 667.84 (males). The estimated gross margin for female and male was N 288, 214.28 and N 289, 778.95, respectively and net return of N 285, 609.92 (female) and N 287, 467.96 (male).

Result also showed that the male palm oil markets had higher gross margin than their female counterparts. This implies that male palm oil marketers who had access to credit on the average had high profit than their female counterpart. The reason could be that men on the average are more advantaged thus, accessed higher amount of credit, and bought larger quantity of palm oil, and purchase directly from the producers. The result is consistent with the findings of Enete and Amusa, (2010), who reported that males are more advantaged in accessing credit probably because, they have more access to and control over vital production resources than females and have continued to dominate farm decision making.

The average rate of return per naira invested result shows that palm oil marketing was profitable for both gender by returning ₦2.65 for every ₦1.00 for the female and ₦1.40 for every ₦1.00 for the male. Thus, it could be concluded that palm oil marketing in the study area though on a small scale, was economically viable. This result is in line with Nwaiwu *et al.*, (2012). Also, the

gross ratios were less than one, indicating profitability of palm oil marketing and this result is in corroboration with Jirgi *et al*., (2010). The result implied that the enterprise was profitable in line with Adakaren *et al*. (2012), Ada Okungbowa *et al.* (2013), and Ibitoye (2014) who in their separate studies reported that palm oil marketing was profitable.

Factors influencing profit of palm oil marketers that accessed institutional credit by gender

The result in the Table 5 shows the regression estimate of factors influencing profit of marketers that accessed credit among in the study area. Data were fitted to three (4) functional forms (linear, semi log, exponential and double log) of the multiple regression model using ordinary least square techniques (OLS). The linear functional forms were the best and lead equation selected because of a high R^2 value, number of significant factors and agreement with a priori expectation. The R^2 values of 0.7864 (female palm oil marketers), 0.8225 (male palm oil marketers) and 0.8081 (pooled male and female palm oil marketers). This implies that 78.64% of the variations in the profit of female palm oil marketers who had access to credit was explained by the independent factors, 82.25% of the variations in the profit of male palm oil marketers who had access to credit was explained by the independent factors while 80.81% of the variations in the profit of both male and female palm oil marketers who had access to credit was explained by the independent factors. The f- values were all highly significant at 1% level indicating goodness of fit of regression line and significance of the R^2 value.

The coefficients of age (male and pooled) were positive and significant at 5% level. This implies that any increase in age will lead to a corresponding increase in profit of oil palm marketers who had access to credit. This may be because the older palm oil marketers enjoy more credibility than their younger counterparts. This is consistent with the results from Nguyen (2007) who found out that older farmers often have more assets, reputation and meet the requirements for getting formal credit in contrast with younger household who often lack capital, collateral, and other conditions required to access formal credit.

The coefficients of marital status for females, males and pooled equations were positive and significant at 10%, 5% and 1% level respectively. This implies that palm oil marketers who had access to credit, and are married, had more profit than their single counterparts. When spouses have similar goals and priorities, it seems reasonable to expect that they would have the support of their husbands/wives to gain access to financial resources; Spouses that agree with each other are likely to pool their resources (Oladoja *et al*., 2008).

The coefficients of education of the males, females and pooled were positive and significant at 1% level (males) and females at 5% level. This implies that any increase in level of education acquired will lead to a corresponding increase in profit of palm oil marketers that accessed credit. This is expected because education will affect the way the business is managed as well as marketing skills. This finding is in line with Cole and Kartini, (2009) who reported that financial literacy depends on education level of marketers and with higher education level, marketers can have easy access to financial services.

The coefficients of occupational status were positive and highly significant at 1% level.

This implies that full time marketers had more access to credit which increases their profit than their part time counterparts. This suggests that major palm oil marketers are fully specialize in palm marketing. This suggests that many marketers in study areas are seasoned farmers, who also engaged in palm oil marketing strictly as a business venture that is profit oriented. This is consistent with observations that palm oil marketers require considerably more entrepreneurialism, as is also evident in the comparatively high rate of business ownership amongst them (Sahara,2017).

The coefficient of amount accessed (pooled) had a direct relationship with profit at 10% level. This implies that any increase in the amount of credit accessed will lead to a corresponding increase in the profit of palm oil marketers. This is a priori expected because with increase in credit amount accessed, the profit is expected to increase and the marketers will be able to repay the amount of credit collected. Credit is a very strong factor that is needed to acquire or develop any enterprise; its availability could determine the extent of production capacity. It also agrees with findings of Nasiru, (2010) who noted that access to microcredit could help prospect in improving their productivity and contributing to uplifting the livelihoods of disadvantaged rural farming communities. This finding also conforms to the study of Wozniak, (1993) who supported this fact by reporting in his study that credit increases the net revenue obtained from fixed inputs, market conditions and individual characteristics. Brainnen (2010) in Tanzania reported similar view that amount accessed in village savings and loan association (VSLA) had a positive impact on welfare of participants. Also, Adel, et al., (2008); Kumar (2009) shared similar view. Also, Shindler (2010) who in a study of informal credit participation as a coping strategy among market women in Northern Ghana concluded that informal credit positively influences the welfare outcome of women and their households.

The coefficient of interest rate was negative and statistically significant at 1% level. This implies that high interest rate decreases profit obtained by both male and female palm oil marketers who had access to credit.

Coefficient of distance to formal financial institution was highly significant ($p<0.01$) for both male and female (pooled) palm oil marketers and positively related to profit of oil marketers that had access to credit. This implies that an increase in the distance to formal financial institution by 1km increases the probability of marketers accessing credit from informal credit sources and also, increases their profit. Accessing credit from informal source increases as distance to the nearest bank increases, thus reflecting opportunity costs of performing financial transactions in formal institution. This result is consistent with Hussien (2007), who in his study affirmed that farmers are discouraged to borrow when sources are located further away from their farming operations.

Conclusion and recommendation

The study analyzed gender perspective in access to institutional credit and profit among palm oil marketers in the study area. The results show that palm oil marketing in the study area was profitable with positive gross margin, net return, return on investment and gross ratio in both male and female marketers with males having higher

net returns. Regression result showed that there are statistically significant factors influencing profit of male marketers and female marketers. These factors include; age, education, marital status, occupational status, amount of credit accessed, interest rate and distance to source of credit. Profitability would improve if measures are taken to address these factors identified by the study. Government should also strengthen financial institutions such as the Bank of Agriculture to provide soft loans to palm oil marketers at very low interest rate.

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Table 1: Distribution of the respondents according to gender

Variable	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Age				
26 – 35	5	8.33	8	13.33
36 – 45	20	33.33	17	28.34
46 – 55	18	30	22	36.66
55-65	17	28.34	13	21.67
Mean	48.33		47.17	
Standard Deviation	11.32		11.81	
Marital status				
Single	10	16.66	17	28.34
Married	39	65	33	55
Separated/divorced	11	18.33	10	16.66
Educational attainment				
Primary	12	20	21	35
Secondary	20	33.33	21	35
Tertiary	28	46.67	18	30
Household size				
1 – 4	14	23.33	16	26.67
5 – 8	30	50	25	41.66
9 -12	16	26.67	19	31.67
Mean	6.63		6.70	
Std Dev	1.78		1.84	
Marketing experience				
1 – 4	16	26.67	27	45
5 -8	26	43.33	16	26.67
9-12	18	30	17	28.33
Mean	6.63		6.73	
Std Dev	1.77		1.87	
Total	**60**	**100**	**60**	**100**

Source: Field Survey, 2017

Table 2 Distribution of respondents according to major source of credit accessed

	Frequency	Percentage	Frequency	Percentage
Formal	40	66.67	28	46.67
Informal	20	33.33	32	53.33
Total	**60**	**100**	**60**	**100**

Source: Field Survey, 2017

Table 3 Distribution of respondents according to amount demanded and accessed from major source of credit

	Mean	Stand. Dev	Min	Max
Amount demanded				
Female	48,500.00	66,459.91	0	150,000
Male	158,000.00	137,752.52	0	350.000
Amount accessed				
Female	11,000.00	31,446.60	0	100,000.00
Male	39,560.00	42,178.63	13,000	150,000

Source: Field Survey, 2017

Table 4: Estimated Net returns of palm oil marketing in the study area

Variables	Female	Male
Revenue (A)/mth (average of 8drums = 1,600litres for female & 10drums = 2,000litres for male) **@49513.58/drum/200 litres**	**396,108.63**	**495,135.80**
Variable costs		
Transportation	1,200.00	1,571.25
Storage	200.60	331.15
Market charge	100.00	297.50
Loading and Offloading	600.00	598.75
Feeding	1,400.00	1,335.00
Others	300.00	138.10
Value of oil bought	104,093.75	201,085.10
Total Variable cost(B)	**107, 894.35**	**205, 356.85**
Gross margin (TR – TVC)	**288,214.28**	**289,778.95**
Fixed cost		
Chairs	6,000.00	5,100.00
Table	8,620.14	6730.15
Basins	1,000.00	1,820.12
Bottles	913.48	1,216.18
Funnel	1,000.00	832.50
Cups	500.00	420.00
Gallons	3,200.00	4,371.00
Drums	4,000.0	2,620.00
Total	25,233.62	23,109.95
Total fixed cost depreciated(C)	***2,523.36***	***2,310.99***
Total cost (B + C)	***110,417.71***	***207,667.84***
Net Return(TR-TC)	***285,690.92***	***287,467.96***
Return on investment	***2.65***	***1.4***
Gross Ratio	***0.27***	***0.41***

Source: Field survey, 2017

Table 5: Factors influencing profit of palm oil marketers by gender

Variables	Female palm oil marketers (Linear)	Malepalm oil marketers (Linear)	Pooled male & female palm oil marketers
Constant (b_0)	-345950.50	-447493.70	-401177
	(-2.67**)	(-3.87***)	(-5.18***)
Age (X_1)	2660.08	3814.859	3323.38
	(1.51)	(2.48***)	(3.09**)
Marital Status (X_2)	56402.39	69300.03	63535.61
	(2.33*)	(3.14**)	(4.20***)
Household Size	-3971.04	-6184.88	-5604.24
(X_3)	(-0.40)	(-0.81)	(-1.05)
Education (X_5)	41498.7	717.102	5762.043
	(3.20*)	(4.24***)	(4.58***)
Occupational status	112063.70	107925.80	110164.20
(X_6)	(5.23***)	(5.99***)	(8.61***)
Marketing cost	1.3438	0.9061	0.0537
(X_7)	(0.26)	(0.24)	(0.02)
Marketing	694.558	2230.521	1761.23
Experience (X_8)	(0.14)	(0.58)	(0.62)
Amount accessed	16.587	16.823	16.8835
(X_9)	(1.09)	(1.50)	(2.03*)
Membership of	289.975	11594.52	152517.2
coop (X_9)	(0.00)	(0.36)	(1.31)
Interest rate (X_{10})	-0.0527	-0.0144	-3534.03
	(-1.44)	(-0.13)	(-2.97**)
Distance (X_{11})	20.84728	18.4426	33962.62
	(0.51)	(0.16)	(6.43***)
R^2	0.7864	0.8225	0,8081
[illegible]	0.6990	0.7815	0.7807
F-Ratio	9.00***	20.00***	29.48***

Source: Field survey, 2017

*, **, and *** is significant at 10%, 5% and 1% level.
Figures in parenthesis are t-values.