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Differentials in Farming activities and Determinants of Credit Use among Women Farmers in Obio/Akpor and Emohua LGAs, Rivers State, Nigeria

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Abstract
The study examined the determinants of farm credit access (use) among women farmers in Obio/aAkpor and Emohua Local Government Areas of Rivers State, Nigeria. Data were collected using a semi-structured questionnaire, and total of two hundred and thirty-three (233) questionnaires administered. One hundred and sixty-one (161) were selected from seven communities in Emohua and seventy two (72) from four communities in Obio/Akpor. Data were analyzed with the use of percentage, mean scores and logit regression. Findings showed that many (42.2% in Emohua and 37.5% in Obio/Akpor) were between 31– 40 years, married (40.4%, 66.7%), had primary education (51.6%, 65.3%), household size of 1-4 persons (48.4%, 58.3%) have been in farming between 16 - 20 years (34.2%, 43.1%) in that order. Majority (59.6%) in Emohua and (66.7%) in Obio/Akpor were involved in crop farming alone. The result of the logit regression analysis showed that age, marital status, educational level, occupation and type of farming activity were significant determinants of credit accessibility in the two LGAs at P≤0.05. The study recommends that to increase credit access, there should be flexibility in the types of collateral required by financial institutions.

Keywords: Determinants, women-farmers, Farm-credit

Introduction

Agriculture's contribution to the Nigerian economy is critical and divergent, providing food for the increasing population, raw materials, jobs, foreign exchange earnings, and demand for goods from the industrial sector (Eze *et al*., 2010). In developing countries like Nigeria, it has always been instrumental in socio-economic growth. Onwualu (2012) noted that agriculture stands out as the dominant sector in remote areas of Nigeria, where about 70% of the Nigerian population habits. The agrarian societies of Emohua and Obio-Akpor are strongly dominated by women who are actively engaged in agricultural activities. Women are passionate about their farming activities in Obio-Akpor and Emuoha (Obe-Nwaka *et al*., 2020). One thing remains clear; women have been known as the powerhouse of subsistence farming in Nigeria as they account for about 80% of food consumed (Iruonagbe, 2009; Sahel, 2014). Women make essential contributions to the agricultural and rural economies in all developing countries (FAO, 2011). Most are poor, lack modern education, and have little or no organizational skills (UN, 1992). DAW and UNIFEM (2001) noted that rural women have the lowest income level and are the most marginalized parties of the global village. In Nigeria and other developing countries, access to credit among women has been adversely affected by socio-economic and structural factors. Male heads of households have been the intended targets of most rural financial programmes that have been massively structured, planned and implemented to help them, failing to realize that women, with their own financial needs and constraints, are active, efficient and engaged economic agents (Obe-Nwaka *et al*., 2020). The constraint militating against women in accessing productive resources is becoming more serious. Rural women who make up the majority of the agricultural population in Rivers State are poor, the only alternative to raising money has continued to elude them. They have been made to produce at the subsistence level with insufficient finance. These problems need to be addressed hence the study. It is based on this that the study sought to achieve the following specific objectives: identify the socio-economic characteristics of women 'farmers' in the study areas; examine the type(s) of agricultural activities engaged in by women in the study areas; and; examine the determinants of women's access to credit in Emohua and Obio/Akpor Local Government Areas.

Methodology

This research was performed in Obio/Akpor and Emohua Local Government Areas (LGAs), Rivers State, Nigeria. In the North, Obio/Akpor LGA is bordered by Etche LGA in the South by Port-Harcourt City LGA; Ikwerre LGA and Emuoha LGA on the East; and Oyigbo LGA and Eleme LGA on the West. On the other hand, Emouha is the headquarters of Emohua LGA in the State. It is bounded on the North by Ahoada East and West LGAs and Abua/Odual LGA, on the South by Obio/Akpor LGA, East by Ikwerre LGA, and West by Asari Toru and Degema LGAs. Although on a subsistent scale, the predominant occupation of the Ikwerre ethnicity is farming, they also engage in secondary activities like fishing, hunting, smelting, and trading (Obe-Nwaka *et al*., 2020). Farming, trading, and artisanship are the mainstream occupations of the people. For this study, a multi-stage random sampling method was used. Firstly, two LGAs (Obio/Akpor and Emohua) were purposively selected based on dominnce in the number of women farmers; with Emohua representing a typical rural agrarian setting, while Obio/Akpor a semi-urban area. Secondly, purposive sampling selected eleven (11) communities out of the two LGAs. In Emohua LGA, seven (7) communities were chosen, and four (4) communities in Obio/Akpor LGA. Finally, random sampling was used to select one hundred and sixty one (161) women farmers in Emohua and seventy-two (72) in Obio-Akpor, giving a total sample size of two hundred and thirty-three (233) respondents. The data collected from respondents were examined using descriptive (such as mean score, percentage) and inferential (logistic model regression) statistics to accomplish the study objectives. A logistic regression model was used to analyze determinants of access to credit by female farmers as presented by Eze *et al*. (2009). The model employed in the analysis is specified as follows:

$$LnY = Ln\left(\frac{Pi}{1-Pi}\right)$$

$$= \beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+e$$

Where;

Y = Access and non-access to credit for the two LGAs (dummy variable, access to credit = 1 and 0 = non access to credit)

Pi = probability of access to credit

1-Pi = probability of non-access to credit

Ln = natural logarithm function

X_i = independent variables (where *i* goes from 1 – 8)

X_1 = Age of the female farmers (years)

X_2 = Marital status (married = 1, otherwise = 0)

X_3 = Household size (persons)

X_4 = occupational status (farm=1, non-farm=0)

X_5 = Level of education (No formal education = 1, Formal education = 2 to 4)

X_6 = Years of experience in farming (years)

X_7 = Type of farming activity (crop=1, livestock and crop and fishing=0)

X_8 = monthly income (naira)

β_0 = Constant

β = Regression coefficients

e = Stochastic error term

Results and Discussion

Socio-economic Characteristics of Respondents

The age of farmers is categorized by Harun (2014) into three namely; young (15-30 years), middle (31-50) and aged (>50 years). From the result in Table 1, it was shown that 9.9% of the respondents in Emohua were within the young age, 66.4% middle age and 23.6% old, whereas, in Obio/Akpor, 20.8% fell within the young age, 65.3% middle age and 13.9% old age category. On average, 13.3% were within the young age, 66.1% middle age and 20.6% old in the two LGAs. Considering the large percentage of farmers in the middle category in the two LGAs, it could be deduced that the areas have a lot of available human resources. If this human resource is adequately exploited, the areas in the entire state will become the wealthiest. This finding is consistent with that of Eghosa (2015) in his research on the Role of Women in Agricultural Production in Ovia Southwest LGA of Edo State, in which the majority (41.2%) of the respondents were within the middle age category. The distribution of the respondents according to their marital status showed that in Emohua, 40.4% of respondents were married, 26.7% widowed, 15.5% Divorced/Separated, and 15.5% single, whereas, in Obio/Akpor, 66.7% were married, 16.9% widowed, 9.7% single, and 6.9% divorced/separated. This result aligns with Eghosa (2015), which showed that most of the respondents were married. Educational level in Emohua LGA showed that majority (51.6%) had primary education, while 29.7% had secondary education. Among the 161 women interviewed, only 16 (9.9%) completed tertiary education. Of the total respondents, about 8.7% had no formal schooling. In summary, about 91.3% of the women in Emohua LGA had formal education. In Obio/Akpor LGA, about 11.1% of the women had no formal education, and 65.3% had primary education. About 13.9% and 9.7% attended secondary and tertiary schools, respectively. To sum up, 88.9% of women had formal schooling in Obio/Akpor LGA. This finding is in line with Nyamba and Mlozi (2012), who found that most farmers were educated in the area of study. The findings on household size showed that many (48.4%) respondents in Emohua and 58.3% in Obio/Akpor had a household size of 5 to 8 persons. Some of the respondents (27.3%) in Emohua and 25.0% in Obio/Akpor had a household size of 1 to 4 persons. Few of the respondents (24.2%) in Emohua and 16.7% in Obio/Akpor had a household size of 9 to 12. The mean household size in Emohua, Obio/Akpor, and aggregate of the two LGAs were 6 persons. The average size of six households is in line with the nationally prescribed size of six households (Eze *et al*., 2009). In addition, Table 1 indicates that the primary occupation of most of the respondents from the two LGAs was farming. In ranking the occupations, the two LGAs identified farming as the most important occupation represented by 52.8% in Emohua, 58.3% in Obio/Akpor, and 54.5% for the two LGAs. Emohua LGA indicated trading (28.6%) as another important

occupation and employment in the civil service as less important (18.6%), while Obio/Akpor LGA indicated employment in the civil service (33.3%) as an important occupation and trading (8.3%) as less important. This finding is in line with the findings of Samson and Obademi (2018), who stated that farming was defined as their main occupation by beneficiaries and non-beneficiaries. The beneficiaries indicated civil service as another important occupation and trading as less important, while the non-beneficiaries regarded trading as another important occupation and civil service as less important. The years of experience of respondents in farming practice indicate that 34.2% of respondents in Emohua LGA have been farmers for approximately 16 to 20 years. Here, 21.7% have been in farming for about 11 – 15 years, 19.9% for about 6 – 10 year and 17.4% 21 years and above. Only 6.8% have been farmers for about 1 – 5 years in Emohua LGA. In Obio/Akpor LGA, many (43.1%) of the respondents have been farmers for between 16 and 20 years. In descending proportions, 20.8%, 15.3%, 13.9% and 6.9% had farming experience of about 11 to 15 years, 21 years and above, 6 - 10 years and 1 - 5 years respectively. The average farming experience in Emohua was 14 years, 15 years in Obio/Akpor and 15 years for the two LGAs. The consequence is that women farmers in the two LGAs have sufficient farming experience, which has a positive impact on agricultural production. The more seasoned a farmer is, the more he or she will use expended funds judiciously (Oriaku, 2010). About 34.7% of the respondents in Emohua earned between N51,000 – N60,000 monthly from their farm produce. Another 28.6% earned between N41,000 – N50,000, 11.2% between N31,000 – N40,000, 9.3% N20,000 – N30,000, 6.8% N71,000 – N80,000 and 6.2% N61,000 – N70,000, while 3.1% indicated that they earn between N81,000 – N90,000. The result further showed that in Obio/Akpor, 36.1% of respondents earned between N41,000 – N50,000 monthly from sale of farm produce, followed by 19.4% who earned between N51,000 – N60,000, 16.1% N31,000 – N40,000, 9.7% N20,000 – N30,000, 6.9% N61,000 – N70,000, 5.6% N71,000 – N80,000 and 4.2% N81,000 – N90,000, while only 1.4% earned between N91,000 – N100,000. The mean monthly income in Emohua was N605,808, whereas the annual income in Obio/Akpor was N590,412. This result implies that farmers in Emohua earned monthly income of N50,484, while farmers in Obio-Akpor earned a monthly income of N49,201. The mean monthly income is greater than the minimum wage of N18,000; this implies that women farmers in the two LGAs earned high monthly income from sales of their produce and therefore is a good source of income to women who are help mates to their husbands. The result of this study is consistent with the study of Okidim and Obe-Nwaka (2021), who found that fish farmers earned a monthly income of N80,417 from sale of their agricultural produce (fish).

Types of Agricultural Activity Involved by women in the two LGAs

Table 2 shows the kinds of agricultural practices that women were involved in the study area. Among the female farmers sampled in Emohua, majority (53.4%) indicated that they were only involved in crop farming, 23.6% in crop and livestock farming, another 23.0% were engaged in fish farming in addition to crop farming. In Obio/Akpor, the study showed that majority (66.7%) of the farmers were only involved in crop farming, 19.4% in crop farming and livestock production, another 13.9% in fish farming alongside crop farming. This study collaborates with Eghosa (2015), who found that 42.9% of respondents claimed that they were only interested in crop farming alone. What Sigler, J. (2017) found in their analysis is hard to debate: plant-based agriculture generates around 1.5 trillion more pounds of "product" than animal agriculture. And it does so more efficiently. This is because plant-based agriculture uses 115 million acres less land. While animal agriculture generates about $35 billion more than plant agriculture, the expenses generated by animal agriculture are considerably higher—about $55.8 billion more than in plant farming. Based on these numbers, the report concludes that "plant-based agriculture grows 512% more pounds of food than animal-based agriculture on 69% of the mass of land that animal-based agriculture uses."

Determinants of Access to Credit in the two LGAs

Table 3 showed aggregate logit regression estimates of factors influencing access to credit among the women farmers in the study area. The results show that out of the eight variables, only two were significant for credit access among farmers. These factors are marital status and type of farming. The coefficient of marital status (0.447) was positive and significant at a 5.0% level. This result implies that single farmers in the study area acquired less farm credit than married farmers. Married farmers are perceived to be more responsible and credit worthy, which serves as a drive in the area to obtain farm credit. Financial institutions and lenders also saw married farmers as being relatively more secure, responsible, and capable of repaying borrowed funds. The results of this study are consistent with John and Charles (2015) who contradict Wivine (2012), whose findings indicated that marital status was not a significant factor affecting access to credit among smallholder farmers in their study area. The coefficient of type of farming activity (2.504) was positive and significant at 5% level. This implies that the probability of accessing farm credit is determined by the farmer's type of farming activity. This may be because some farming activities are more profitable, mature early, and already have potential buyers, especially crop produce, enabling the farmer to pay back the loan expended.

Conclusion

The role of farm credit in the development of the agricultural sector cannot be overemphasized. Credit enhances 'farmers' purchasing purchasing power to enable them acquire modern technologies for their farm

production. The study's outcome showed that the aggregate determinant of credit accessibility in the two LGAs was marital status and type of farming activity. In line with the findings of this study, it was recommended that women farmers should engage in the farming of crops that have early maturation period to enable them access credit, also, since most of the women had only primary education, there is need for adult education to be encouraged for older rural women.

Table 1: Socio-Economic Characteristics of women farmers in the LGAs

	Emohua(n=161)			Obio/Akpor(n=72)			Pooled		
Variables	**Freq.**	**%**	**Mean**	**Freq.**	**%**	**Mean**	**Freq.**	**%**	**Mean**
Age (years)									
21 – 30	16	9.9		15	20.8		31	13.3	
31 – 40	68	42.2		27	37.5		95	40.8	
41 – 50	39	24.2		20	27.8		59	25.3	
51 – 60	30	18.6		9	12.5		39	16.7	
61 – 70	8	5.0		1	1.4		9	3.9	
Mean			42			39			41
Marital status									
Married	65	40.4		48	66.7		113	48.5	
Single	25	15.5		7	9.7		32	13.7	
Divorced	28	17.4		5	6.9		33	14.2	
Widowed	43	26.7		12	16.7		55	23.6	
Educational Level									
None	14	8.7		8	11.1		22	9.4	
Primary	83	51.6		47	65.3		130	55.8	
Secondary	48	29.8		10	13.9		58	24.9	
Tertiary	16	9.9		7	9.7		23	9.9	
Household size									
1 – 4	44	27.3		18	25.0		62	26.6	
5 – 8	78	48.4		42	58.3		120	51.5	
9 – 12	39	24.4		12	16.7		51	21.9	
Mean			6			6			6
Occupation									
Farming	85	52.8		42	58.3		127	54.5	
Civil servant	30	18.6		25	33.3		55	23.6	
Trading	46	28.6		5	8.3		51	21.9	
Years of Experience									
1 – 5	11	6.8		5	6.9		16	6.9	
6 – 10	32	19.9		10	13.9		42	18.1	
11 – 15	35	21.7		15	20.8		50	21.4	
16 – 20	55	34.2		31	43.1		86	36.9	
21 and above	28	17.4		11	15.3		39	16.7	
Mean			14			15			15
Annual income									
20,000 – 30,000	15	9.3		7	9.7		22	9.5	
31,000 – 40,000	18	11.2		12	16.7		30	12.9	
41,000 – 50,000	46	28.6		26	36.1		72	30.9	
51,000 – 60,000	56	34.8		14	19.4		70	30.1	
61,000 – 70,000	10	6.2		5	6.9		15	6.4	
71,000 – 80,000	11	6.8		4	5.6		15	6.4	
81,000 – 90,000	5	3.1		3	4.2		8	3.4	
91,000 – 100,000	-	-		1	1.4		1	0.4	
Total	161	100		72	100		233	100	
Mean			605,808			590,412			601,055

Source: Field survey, 2020

Table 2: Types of Agricultural Activity engaged in by women in the two LGAs

Variables	Emohua		Obio/Akpor		Pooled	
Types of agricultural activities respondents are involved in	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Crop farming alone	86	53.4	48	66.7	134	57.5
Crop farming and fishing	37	23.0	10	13.9	47	20.2
Crop farming and livestock	38	23.6	14	19.4	52	22.3
Total	161	100	72	100	233	100

Source: Field survey, 2020

Table 3: Logit regression estimates of of determinants of credit access in the study area

Variables	B Statistic	Standard Error	P-Value
Age	0.169	0.204	0.407
Marital Status	0.447**	0.162	0.006
Household Size	0.016	0.390	0.967
Educational Level	-0.088	0.337	0.795
Occupation	0.464	0.327	0.157
Farming Experience	-0.205	0.165	0.216
Type of Farming Activity	2.504**	0.417	0.000
Monthly Income	-0.037	0.178	0.837
Constant	-5.463***	1.072	0.000
-2 Log likelihood	175.257		
Cox & Snell R Square	0.447		
Pseudo R Square	0.605		
Chi-Square	3.864		

Source: Authors computation from SPSS
***** and *** is significant at 5% and 1% level***

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