DETERMINANTS OF FEMALE FARMERS’ PARTICIPATION IN NON-FARM ENTERPRISES IN IKWUANO LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA

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ABSTRACT

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This study assessed the determinants of female farmers’ participation in non-farm enterprise in Ikwunao Local Government Area, Abia State, Nigeria. Multistage sampling technique was adopted in the selection of 160 respondents in the study area. Well-structured questionnaire was used in data collection. Analytical tools utilized were frequency distribution, percentages and probit regression analyses. The result from the study indicated that mean age, level of education, household size, years of experience in farming, and farm size were 35years, 12 years, 7persons per household, 9years and one hectare respectively. The findings further indicated that the average farm and non-farm income were ₦26,719.00 and ₦34,375.00 respectively. About 53.0% of the females were married. Among the respondents, only 34.0% out of 160 of the women had access to credit. The probit regression analysis showed that farm income, membership of cooperative society, and household size positively and significantly affects the female farmers’ decision to embark on non-farm enterprise at varied levels of significance while age, primary occupation, farming experience, and credit access negatively and significantly influence the respondents’ decision on off-farm entrepreneurship at 1%, 5% and 10% level of significant.

INTRODUCTION

In the developing countries, most efforts of government to develop rural growth centred on the policies that are focused mainly to enhance agricultural productivity or increase employment in agriculture (Escobal, 2001; Adams, 2002). In Nigeria, the leading role of agricultural sector was reflected in government policies as developmental programme was mainly on the agricultural sector. Rural development policies often neglect the role of rural non-farm activities and their link with agriculture. In recent years, due to rapid population growth in Africa, more pressure is being exerted on arable land. Many households are no longer able to live solely on agricultural but to engage in non-farm entrepreneurship activities (Oseni and Winters, 2009). The non-farm enterprise has emerged as an important sector for the employer of labour and contributor to farm income in developing world. In Nigeria, farm households selectively engage in non-farm activities to earn additional income. The non-farm activities also improve farm productivity and boost agricultural production. They act as driver to foster farm income, farm commercialization, and agricultural diversification into higher value activities. Non-farm income sources are becoming increasingly important for rural households in developing countries (Islam, 1997; Escobar, 2001, Lanjouw et al., 2001). Earnings from non-farm employment help to buffer the resulting income fluctuations and improving household security (Ibekwe et al., 2010). During slack or off-farm seasons, involuntary unemployment in agriculture is common; hence non-farm employment, however low the wages or the returns from it, supplements the income of farmers and especially the poorer farmers. Non-farm enterprise enables the poor to smooth out or offset fluctuations of agricultural income by allowing a diversification of sources of income. The effectiveness of non-farm sector in stabilizing income over different seasons or consecutive years depends on the strength and native of the linkage and the type of non-farm activities that are involved.

In rural household, females play significant role in generation of economic activities for the up keep of the family. In Nigeria, they play crucial roles in agricultural production, food processing, household energy and child bearing (Ephraim and Godiya, 2007). They engage in a continuous basis in home-related and income generating activities and often spend between 10-16 hours of their time in a day in both productive and unproductive activities (Azubuike, 2005). They participate in non-farm activities for the up-keep of the family. They engage in the non-farm enterprises such as trading, tailoring, hair dressing, etc. They embark on these activities due to risk and seasonality of agricultural production. The degree of female participation in the non-farm enterprises varies according to customs in different parts of the country. Females in Nigeria have been found to be more likely to engage in the non-farm economy compare to men (Ackah, 2013). Almost half non-farm businesses that are operated by women are from inside the household’s residence or in the immediate surroundings and most of the
enterprise activity that is not in the surroundings of the household residence is either located in traditional market place or performed mobile (Paula and Wim, 2014).

In rural areas, the resource poor female farmers often have the strong desire to participate in the rural non-farm enterprise but are constrained by resources. Competing linkages often occur when females take decisions about non-farm and farm activities because of limited resources such as capital and labour (Reardon et al., 1994). Females lack the required capital to embark on these economic activities that could generate high return. Also non-farm enterprise consumes agricultural labour available on the farm. Embarking in the non-farm activities requires reallocation of these limited resources and result in an inevitable withdrawal from the farm. The levels of decision making by females are also restricted due to their low access to resources such as land. In the south-east of Nigeria tradition forbids women from owning land unlike their men counterpart. The above problem even impaired females from accessing credit because they have no collateral to offer for financial assistance as they are restricted from land. Also female participation in non-farm income generation are hindered by time constrains. It was observed that average daily hours put into agricultural activities are more than men (Akpabio and Oko, 2005). Females are also constrained by illiteracy because until recently education of females was very low in most families. This accounted for their poverty and ignorance which at times manifest in their resistant attitude towards change to engage on certain economic activities that would generate higher income and increase employment in non-farm activities. On this note, it becomes necessary to assess the determinants of female farmers’ participation in non-farm enterprise in Ikwuano Local Government Area, Abia State, Nigeria.

MATERIALS AND METHODS

The study was carried out in Ikwuano LGA of Abia State. Ikwuano LGA is located between latitudes 5° 24´ and 5° 30´E and longitudes 7° 31´ and 7° 37´N. The local government has a population of 137,993 people comprising of 61,945 males and 71,020 females (NPC, 2006). The local government has an area of about 310 km² with population density of 194 persons per km. It is made up of 28 autonomous communities. The people of the area are predominantly farmers while some people engage in non-farm economic activities such as trading, tailoring, civil service, hair dressing etc. (Anyiroyo and Emerole, 2013). The population for this study was made up of female farmers in the study area. Multistage sampling technique was used for this study. First, four autonomous communities were randomly selected from the twenty eight (28) autonomous communities in Ikwuano LGA. Secondly four villages were randomly selected from each of the four communities chosen, thus giving a total of 16 villages. Lastly, ten female farmers were selected from each of the 16 villages to give a sample size of 160 respondents. Data for this study were obtained from primary sources through the administration of well-structured questionnaire. The questionnaire elicited information on the following: the socio-economic characteristics of the respondents such as age, educational level, marital status, primary occupation, household size, membership of co-operative society, and monthly income.

The data on socio economic characteristics were analysed using descriptive statistics such as means, frequency distribution and percentages while the factors that influence women decision to embark on non-farm enterprise were analysed using probit regression analysis. The probit regression model is appropriate when the response takes one of only two possible values representing presence or absence. This is expressed as in Gujarati (2003).

\[ Y_i = I/1+e^{\beta_1 X_1 + \ldots + \beta_k X_k + \mu} \]

Where

- \( Y_i \) = Females decision on non-farm enterprise.
- (Dichotomous dependent variable \( I=\text{yes}, 0=\text{No} \))
- \( X_1 \) = Age (years), \( X_2 \) = Primary occupation (farming = 1, otherwise = 0), \( X_3 \) = Level of education (years), \( X_4 \) = Farm income (\( \mathbb{N} \)), \( X_5 \) = Credit access (Yes = 1, No = 0), \( X_6 \) = Farming experience (years), \( X_7 \) = Farm size (Hectares), \( X_8 \) = Membership of cooperative society (member=1, otherwise = 0), \( X_9 \) = Household size (number), \( \beta \) = A factor of unknown coefficients, \( \beta_1, \ldots, \beta_k \) = Regression parameters that were estimated, \( \mu \) = Error term.

RESULTS AND DISCUSSION

The result on Table 1 shows that 3.0% of the female farmers were less than 21 years of age while 41.0% of them were within the age range of 21 - 30 years. Thirty-one percent, 17.0% and 8.0% of them fell within the age of 31 - 40 years, 41 - 50 years; and above 50 years respectively. The mean age of the respondents was 35 years. This is an indication that the female were mostly middle aged entrepreneurs. The implication is that they...
were energetic and within the active productive work force. However, it conforms to Ibekwe et al., (2010), who noted that younger people choose off-farm entrepreneurship as they are more energetic and more likely to combine farm and off-farm projects. With regards to marital status, 53.0% of the female farmers were married, while 39.0% of them were single. Also 6.0% and 2.0% of the respondents were widowed and divorced respectively. This implies that the married females were more involved in off-farm enterprises in the study area. Married females are usually involved in off-farm business because of the need to supplement family means of livelihood (Anyiyo and Emerole, 2013).

The distribution on household size shows that the average household size was 7 persons and that 50.0% of the female farmers had household sizes of between 6-10 members, while 41.0% and 9.0% of them had between 1-5, and above 10 persons respectively. This result implies that these respondents had moderate family sizes. This has implications on labour supply to the business. This may justify the need to augment family labour with hired labour. The Educational level of the women farmers as shown in Table 1 revealed that the respondents attained average of 12 years of education. The result further indicates that 96.0% of the females were literate with formal education ranging from primary to tertiary. As expected, the education would enhance improved business ideas, skills, innovation and managerial ability for the sustainability of the business. This result is in line with the findings of Nwibo and Okorie (2013) that noted that as an individual increases his educational attainment, his entrepreneurial quest and skill increase, thus expanding his knowledge base which makes him more alert to new opportunities, and increase the opportunity cost of being self-employed.

On the years of being into farming, the mean number of years was 9 years with 76.0% of the female farmers having farming experience of between 1-10 years. Also 18.0% of them had between 11 - 20 years of farming experience, while 10.0% had 21 - 30 years and only 1.0% above 30 years of experience. Fifty four percent of the respondents in the study area had farm size of between 0.1 - 1.0 hectares while 37.0%, 6.0% and 3.0% of them had farm size within 1.1 - 2.0, 2.1 - 3.0 and 3.1 - 4.0 hectares respectively with one hectare as the mean. This result shows that the women farmers in the study area were small scale farmers as they were operating on average of one hectare of land. This could explain why some of the respondents desired to embark on off-farm enterprises. The result also indicates that mean farm monthly income of the women was $26, 719.00, it further shows that majority of the respondents (76.0%) had monthly income of less than $31,000.00 while 18% of them had monthly income of between $31,000 – $40,000.00 and 6% had above $40,000.00. The income status of the respondents has implication for decision choice of off-farm business enterprise as well as sustainability of the enterprise as the income level of an individual plays a great role in shaping the type of enterprise to venture into. Also 49.0% of the women had monthly non-farm income of below $31,000.00 while 38.0% and 13.0% had monthly non-farm income of $31,000 – $40,000 and above $40,000 respectively. This finding also shows that the women were seriously into non-farm business because they generate more income in non-farm business than farming business.

There was indication that only 34.0% of the women received credit for their off farm enterprise while a good number of them 66.0% of them had no credit. Binary probit regression analysis was used to determine the factors that influence women’s decisions to embark on non-farm enterprise. As shown in Table 2.0, the likelihood ratio test showed a significant value of 56.85 and chi-square value of 51.36. This implies that the estimated model is statistically significant. Hence, the model is considered to be a good fit and equally consistent with theory. Also the value of fit measure, McFadden R² (0.65) indicated a very satisfactory fit. Seven out of nine explanatory variables were statistically significant at different levels and these are the coefficient of age, farming experience, access to credit, farm income, household size, primary occupation and membership of cooperative society. The result indicates that coefficients (0.28, 0.53, and 0.11) of farm income, membership of cooperative society, and household size were positive at 10.0%, 5.0%, and 1.0% respectively. This result implies that these variables had positive influence on the decision of the women to embark on off-farm enterprises. The positive and significant effects of these predictors are in line with a priori expectation in that as the income of the women increases, there is the probability that the respondents would increase their decision to participate in the non-farm enterprises as this resource would pose less hindrance for the women to embark on the enterprise. The sign identity of membership of cooperative signifies conformity with a priori expectation as membership of cooperative societies aids in receiving and evaluating information for business improvement (Ajagbe et al., 2007) while the positive sign of household size depicts that with increase in the household size there is the probability that more labour will be available for the non-farm enterprises and this will enhance the women to take better decision to participate in the activities.

On the other hand, age, primary occupation, credit access and farming experience were negatively signed and significant at 10.0%, 5.0%, and 1.0% levels respectively, implying that the above predictors had negative influence on the women’s decision to participate in the non-farm economic activities. The probit coefficients of age, primary occupation, credit access, and farming experience were -0.03, -0.64, -0.58, and -0.65, respectively. The negative sign of the coefficients of age, farming experience, and primary occupation are in tandem with a
Table 1: Socio-economic Characteristics of Respondents Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 21</td>
<td>5</td>
<td>3.0</td>
</tr>
<tr>
<td>21 – 30</td>
<td>65</td>
<td>41.0</td>
</tr>
<tr>
<td>31 – 40</td>
<td>50</td>
<td>31.0</td>
</tr>
<tr>
<td>Above 50</td>
<td>13</td>
<td>8.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean Age= 35 years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td></td>
<td>39.0</td>
</tr>
<tr>
<td>Married</td>
<td></td>
<td>53.0</td>
</tr>
<tr>
<td>Widowed</td>
<td>10</td>
<td>6.0</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Household size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 5</td>
<td>66</td>
<td>41.0</td>
</tr>
<tr>
<td>6 – 10</td>
<td>80</td>
<td>50.0</td>
</tr>
<tr>
<td>Above 10</td>
<td>14</td>
<td>9.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean = 7 Persons</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Educational Attainment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>56</td>
<td>35.0</td>
</tr>
<tr>
<td>Secondary</td>
<td>64</td>
<td>40.0</td>
</tr>
<tr>
<td>Tertiary</td>
<td>35</td>
<td>22.0</td>
</tr>
<tr>
<td>No Formal Education</td>
<td>5</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean = 12 years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Farming Experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 10</td>
<td>121</td>
<td>76.0</td>
</tr>
<tr>
<td>11 – 20</td>
<td>29</td>
<td>18.0</td>
</tr>
<tr>
<td>21 – 30</td>
<td>8</td>
<td>5.0</td>
</tr>
<tr>
<td>Above 30</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean = 9 years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Farm size (Ha)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.1 – 1.0</td>
<td>86</td>
<td>54.0</td>
</tr>
<tr>
<td>1.1 – 2.0</td>
<td>59</td>
<td>37.0</td>
</tr>
<tr>
<td>2.1 – 3.0</td>
<td>10</td>
<td>6.0</td>
</tr>
<tr>
<td>3.1 – 4.0</td>
<td>5</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean = 1 ha</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monthly Farm income (N)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 21,000</td>
<td>58</td>
<td>36.0</td>
</tr>
<tr>
<td>21,000 - 30,000</td>
<td>64</td>
<td>40.0</td>
</tr>
<tr>
<td>31,000 - 40,000</td>
<td>28</td>
<td>18.0</td>
</tr>
<tr>
<td>Above 40,000</td>
<td>10</td>
<td>6.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean = 26,719.00</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monthly Non-Farm Income(N)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 21,000</td>
<td>36</td>
<td>23.0</td>
</tr>
<tr>
<td>21,000 – 30,000</td>
<td>42</td>
<td>26.0</td>
</tr>
<tr>
<td>31,000 – 40,000</td>
<td>61</td>
<td>38.0</td>
</tr>
<tr>
<td>Above 40,000</td>
<td>21</td>
<td>13.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td><strong>Mean = 34,375.00</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Access to Credit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54</td>
<td>34.0</td>
</tr>
<tr>
<td>No</td>
<td>106</td>
<td>66.0</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>100</td>
</tr>
</tbody>
</table>

Field survey, 2014
priori expectation because as the women farmers advance in age, there is the probability that they show unwillingness to participate in non-farm entrepreneurship. Also as they get more experience in farming being their primary occupation there is the tendency for them to reduce their entrepreneurship decision for off-farm expectations as this implies determined levels. Therefore, women farmers in the rural areas should be encouraged to engage on non-farm enterprises so as to diversify the sources of their income as a result of farm enterprise activities however small will help to alleviate the problems of the women as the income generated from this sector will help to improve the agricultural productivity of women.

Table 2: Factors influencing participation of female farmers in off-farm entrepreneurship

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>Z</th>
<th>P &gt; Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.0261776*</td>
<td>0.0160744</td>
<td>-1.67</td>
<td>0.0103</td>
</tr>
<tr>
<td>Primary occupation</td>
<td>-0.635899**</td>
<td>0.3001245</td>
<td>-2.12</td>
<td>0.032</td>
</tr>
<tr>
<td>Educational level</td>
<td>0.0045142</td>
<td>0.1693254</td>
<td>0.03</td>
<td>0.979</td>
</tr>
<tr>
<td>Farm income</td>
<td>0.2760421*</td>
<td>0.1498301</td>
<td>1.84</td>
<td>0.065</td>
</tr>
<tr>
<td>Credit access</td>
<td>-0.5817876***</td>
<td>0.3889905</td>
<td>-1.50</td>
<td>0.135</td>
</tr>
<tr>
<td>Farming experience</td>
<td>-0.652114***</td>
<td>0.146555</td>
<td>-4.43</td>
<td>0.010</td>
</tr>
<tr>
<td>Farm size</td>
<td>-0.0640065</td>
<td>0.1087731</td>
<td>-0.59</td>
<td>0.556</td>
</tr>
<tr>
<td>Member of coop society</td>
<td>0.5326133*</td>
<td>0.2761284</td>
<td>1.93</td>
<td>0.054</td>
</tr>
<tr>
<td>Household size</td>
<td>0.1102986***</td>
<td>0.0465268</td>
<td>-2.37</td>
<td>0.018</td>
</tr>
</tbody>
</table>

Log likelihood = 56.85; McFadden R² = 0.65; Degree of freedom = 9; Chi Squared = 51.36
* , ** and *** = significant levels at 10.0%, 5.0% and 1.0% respectively
Field survey; 2014

SUMMARY AND CONCLUSION

The findings from the study showed that mean age, level of education, household size, years of experience in farming, and farm size were 35 years, 12 years, 7 persons, 9years and one hectare. The findings further indicated that the average farm and non-farm income were ₦226,719.00 and ₦34,375.00 respectively. The probit regression result indicated that age, farm income, household size, credit access, farming experience members of cooperative and primary occupation had significant influence on women decision to embark on non-farm enterprise which were statistically significant at varied levels. Therefore, women farmers in the rural areas should be encouraged to engage on non-farm enterprises so as to diversify the sources of their income as a result of unemployment during slack period and fluctuations in the farm income. Also income from agricultural activities of the women farmers has been low due to scarce resources to embark on the agricultural ventures. Hence, engaging on the non-farm enterprise activities however small will help to alleviate the problems of the women as the income generated from this sector will help to improve the agricultural productivity of women.

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