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# EFFECT OF SOCIO-ECONOMIC AND CULTURAL FACTORS ON WOMEN IN AGRICULTURAL COOPERATORS ACCEPTANCE OF AGRICULTURAL INNOVATIONS IN ENUGU STATE

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## Abstract

This study seeks to research and unveil the effect of socio-economic and cultural factors on women –in- agricultural cooperators acceptance of agricultural innovations in Enugu state. The solution for low agricultural production and improvement of the standard of living of the women agriculturist in Enugu state is basically the adoption of appropriate agricultural technologies in their farm operations. World Bank thought it necessary to include the women-in-agriculture (WIA) programme in the multi-state, Agricultural Development Programme to address the issue of a blend of the women's traditionally oriented technologies which are full of drudgery and fatigue with appropriate mechanized technologies. This offshoot of ADP; the WIA programme provides training to women farmers besides mobilizing them to achieve higher agricultural productivity through group (cooperative) approach. The researcher evaluated the impact of socio-economic and cultural factors on women in agricultural cooperators acceptance of agricultural innovations in Enugu State with a view to identify their adoption level based on their economic power in relation to finding out the factors that affect the women's acceptance and or rejection of the new ideas in agriculture. A total of 232 cooperative women agriculturists, 30 extension agents and 50 non cooperative women farmers involved in WIA programme participated in the study. Data were sourced through the use of questionnaire, interview – schedule with group discussion. The questionnaire from respondents were treated and analyzed with statistical package for management Scientists (SPMS) using means and percentages. The study found among other things that age has significant influence on the acceptance of agricultural innovations of the WIA cooperators; there is significant relationship between cooperative women farmers awareness and their adoption of agricultural technologies; adoption was relatively high for five of the available technologies and low for five of the agricultural innovations; there was no significant difference between the adoption level of the women cooperators and the non-cooperative women farmers with t statistics value of 0.801; several challenges were identified to be affecting the adoption of new agricultural innovations by the women; some of the innovations are too complex, incompatible, unaffordable for the women. Recommendations made for improvement among others include: liberalization of credit decisions on women, increasing financial assistance to WIA programme at the state levels by designing appropriate scheme whereby funds from Bank of Agriculture (BOA) and insurance companies can be channeled to WIA programme at concessionary terms.

Keywords:Socio-economic factors, Women-in -Agricultural Cooperatives, Agricultural Innovations.

## 1.0 Introduction

Many women engage in farming in Enugu State these days, as a means of their livelihood (Akubuilo, Orjioke, Egwu, 2008).However, lack of appropriate technologies/innovations to

facilitate the production of the crops has been a major constraint to women farmers.Their production continue to be very low considering the fact that most of the technologies currently being adopted by the women are traditionally oriented as they are not automated or mechanized and lack other elements of innovativeness. They also lack the competent innovations which some renowned world food producers such as Thailand, Indonesia, United States, Israel, etc. adopt in agricultural production (Ogbonna, 2009).There is the need to practically look into the effort of those set of people in the grass root (rural) part of the country who are actually involved in the agricultural activities. Appropriate technology generation that can enhance increased production of food to cope with the teaming population and market demand is needed. The technologies required are those that have the potency of reducing sufferings and tedium's on the part of the farmers (women) as well as boost production of crops (Suleiman, 2006).

The advocacy is also the adoption of modern technologies as opposed to archaic production techniques that are basically rooted in the indigenous knowledge level of the farmers and their behavioral patterns (Ogbonna, 2009).

In agricultural parlance, any technology perceived to be new to the people is an innovation. It is only when Nigerian farmers (women) introduce technologies such as;irrigation for all year farming; tractor application for soil cultivation; automated threshing machines; automated harvesters; temperature regulated drying machine; automated juicers; mechanized mills, improved seedlings, agro processing, value addition to mention but a few in their farm operations that the country can be placed on the road map to self-sufficiency in food production, thus minimizing the importation of our major stable food like rice from other continents such as Asia and America (Damisa and Tohanna (2007). Women can attempt the adoption of these technologies as groups, pulling their resources together formally to forge ahead. As a group, getting financial assistance from the government and other donor agencies could be feasible (Albert and Isife, 2009). Therefore this study seeks to research on the existing relationship between socio-economic factors and cultural factors on the acceptance and adoption of agricultural innovations.

### 1.1 Statement of the Problem

Agricultural innovation involves the introduction of automated machine, improved seeds and farm implements to facilitate production and reduce drudgery and fatigue on the part of the farmers. It has to do with other innovations on storage and other styles of value addition to agricultural products. Over seventy percent of the Nigerian population earns their livelihood from the farms and majority of this number are women (Onugu, 2008). The country is by no means, self-sufficient in food production owing mostly to the use of crude implements by the farmers. It is on this basis of the need for mechanization of our agricultural implements that Towe (2004) identified low level of awareness, knowledge of appropriate agricultural mechanization by the peasant farmers and financial constraints as well as cultural inhibitions asthe major problems associated with agricultural production in Nigeria.

### 1.2 Objective of the Study

The board objective of the study is to establish the relationship betweensocio-economic and cultural factors on women and agricultural co-operators acceptance of agricultural innovations in Enugu state

The specific objective of the study is to;

i. ascertain the effect of socio-economic and cultural factors on the women in agriculture cooperators' acceptance of agricultural innovations in Enugu state.

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### 1.3 Research Questions

The pertinent research question is:

i. What are the effect of socio-economic and cultural factors on the women-in-agriculture cooperators' acceptance of agricultural innovations in Enugu state.?

## 2.0 Literature Review

The review of related literature of this study has been organized under the following sub-heading:

- Factors that aid adoption of agricultural innovations

### 2.1 Factors That Aid Adoption of Agricultural Innovations

Sabo (2006) opineds that adoption of innovation is a function of many factors. These are classified as personal, socio-economic and cultural characteristics among others. The personal factors include age, education and rate of the adoption of the society. Some cultural factors include: values and attitude which influence the individuals. Habtermariam (2004) found that age and number of years of schooling have some influence on the adoption of the new farm practices. Furthermore, adoption of agricultural innovation is also a function of the ability of an extension worker to guide a farmer from awareness to adoption which varies on his training in technical agriculture and extension methodology. Socially, family decision making is another factor that influences adoption. This decision in the words of Okafor (2008) may be by person or jointly by the farm couple. Joint decision is expected to be positively related to adoption. Adoption is also found to be influenced by the value of farm products sold, alternative occupation, inadequate capital, and shortage of labour, non-availability of inputs, leadership role and extent of literacy.

Some other factors which aid the adoption of new farming practices had been studied by a number of researchers. Thus, Zaman and Bose (2005) stress the need for proper institutions, agricultural policies and dissemination of knowledge of improved techniques to farmers, in addition to public investment for development of certain rural infrastructure which are beyond the technological and financial capacities of group and individual farmers in developing countries like Nigeria.

Stier (2004) states that the farmers should be helped to improve their output through learning of improved farming practices including among others: the use of new seeds, the application of fertilizers, pesticides and the use of tools. Stier (2004) further stated that an efficient extension service, agricultural press, radio and other mass media, farm magazines, farm newspapers, other farmers, demonstrations and local advisers are important means of facilitating the adoption of agricultural innovations.

Anderson (2003) identifies the following as contributory to agricultural advancement:

(i) Transportation facilities;
(ii) A dependable marketing system;
(iii) A flow of new production techniques from research;
(iv) Supplies of production factors at suitable prices;
(v) Economic incentives for increasing production;
(vi) Educational programs at several levels;
(vii) Suitable credit facilities;
(viii) Farmers' associations of various kinds;
(ix) A non-farm sector able to turn out the products for use in farm production at encouraging prices;
(x) Technical innovation that will increase the demand for non-farm inputs into agriculture;
(xi) General and specific education for farmers, and

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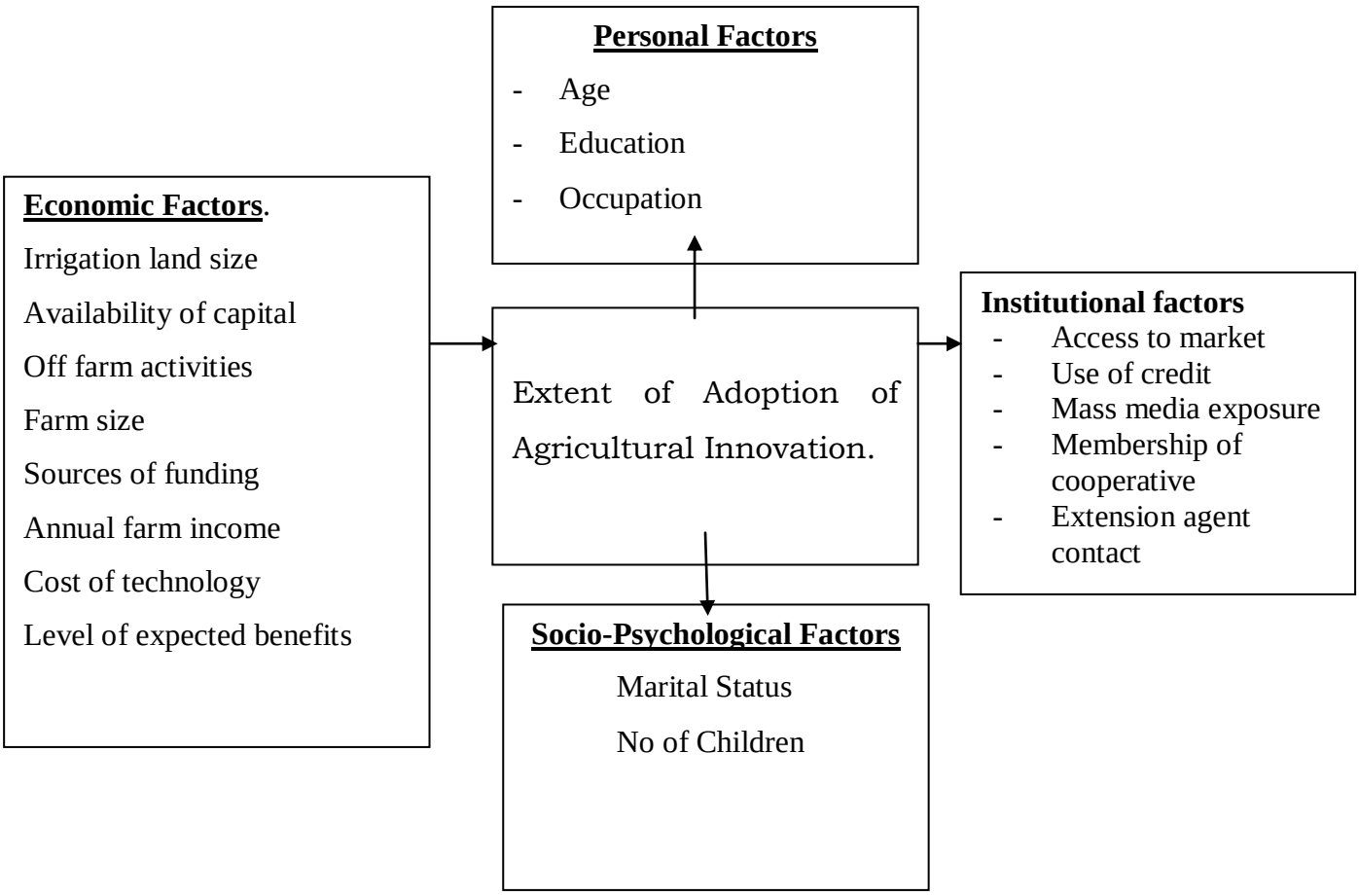
(xii) Transformation of institutions affecting farmers (such as tenure practices). Farmers should be given short courses in farmer training centre's.

Yishak (2011) classifies the factors into human capital, production, policy and natural resource characteristics or simply whether they are continuous or discrete. By stating that agricultural practices are not adopted in a social and economic vacuum, Ononamadu (2006) brought in yet another category of classification. He categorized factors influencing adoption of agricultural innovation as informational, economic and ecological.

However, there is no clear distinguishing feature between elements within each category. Actually, some factors can be correctly placed in either category. For instance, experience as a factor in adoption is categorized under 'farmer characteristics' (Techane 2002) or under 'social factors' (Obibuaku 2004) or under 'human capital characteristics' (Hook 2003).

Perhaps it is not necessary to make clear–cut distinctions between different categories of adoption factors. Besides, categorization usually is done to suit the current technology being investigated, the location, and the researcher's preference. However, as some might argue, categorization may be necessary in regard to policy implementation. Extensive work on agricultural adoption in developing countries was pioneered by Feaster (2002). Since then the amount of literature on this subject has expanded tremendously. As a result of this extensive literature, the following section provides a review of selected factors as they relate to agricultural technology adoption.

**Figure 1: Some factors that influence Adoption of Agricultural Innovations:**




**Source**: Field survey, June 2011

The researcher develops the above model from the information from different authorities and the factors that can influence the adoption of agricultural innovations.

There are many distinctions between different categories of adoption factors. Besides, categorization usually is done to suit the current technology being investigated, the location and the researcher's preference, or even to suit respondents' needs.

## RESEARCH METHODOLOGY AND DESIGN

### 3.1 Research Design

The research method adopted in this study is the survey method.

### 3.2 Area of Study

The study is carried out in Enugu State, South–East Nigeria. Enugu State is one of the thirty six states in Nigeria.Enugu state lies entirely within the tropical zone, especially between latitude $06.00^0$ and $07.05^0$N and longitude $06.52^0$ and $08.30^0$E (ENADEP 2008). The state is in tropical forest which passes through the tropical rain forest and the great oil belt of Nigeria into the savannah area with its dumps of trees. The main temperature in the hottest period of February and April is about $33^0$C (Celsius) and generally cold during the rainy season. Owing to the location of the state within the tropical forest and savannah belts, almost every tropical crop thrives there (Enugu State Government 2011).

### 3.3 Population of the Study

Information from the office of the Deputy Director W.I.A. programme ENADEP, Agueze (2010) shows that they have one hundred (100) active registered women-in-agriculture cooperatives with foundation membership of one thousand (1,000 members) in the state. The agricultural extension agents are forty five (45), while the non-cooperative women farmers are only fifty. This brings their total to one thousand and ninety five (1095) stakeholders in the women-in-agricultural programme of ENADEP, which make the population of this study.

### 3.4 Sampling Techniques

The sampling strategy used in this study is random sampling technique.Random sampling according to Chukwuemeka (2006) is a technique which ensures that every unit of the population or a stratum of the population has equal chances of being selected. Also multi-stage sampling technique. Samples were chosen in stages. For instance, in choosing the extension agents and the cooperative farmers.

### 3.5 Sources of Data

Data used for this study were collected from primary and secondary sources. The primary data were collected using structured questionnaire for the extension agents, interview schedule and group discussion for the women-in-agriculture cooperators and some non-cooperative participants of W.I.A Programme of ENADEP who are fifty (50) individual women farmers.

The secondary data were collected from journals, conference papers, websites (internet), text books and unpublished research works of other researchers in related fields of study. Reports and records maintained in offices of the Deputy Director (WIA) Programme, Rural Institutional Development (RID) in ENADEP were used.

### 3.6 Method of Data Collection

The village Extension Agents (EAs) assisted both the researcher and in most cases the illiterate farmers by interpreting and explaining the procedures on the interview schedules using local dialects and relating the outcome in simplified English language. They were deployed after being trained in interview techniques for two days, but working closely with

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the block extension agents and the researcher; to identify the socio-economic characteristics of women-in-agriculture cooperators as they helped in determining their effects on the adoption level of the women farmers o65in Enugu state, such variables such as age of the farmers, marital status, number of children, occupation, educational background, farm size and other socio-economic attributes. The extents to which these attributes and more have affected the farmers' acceptance of agricultural innovations were sorted.

## 4.0 RESULTS AND DISCUSSIONS

The results obtained from the study were discussed in relation to the specific objective set out. The identification and determination of the extent of influence of the socio-economic and cultural characteristics of the respondents formed the fundamental aspects of the discourse.

**Socio-economic and cultural characteristics of the respondents.**

Some of the attributes that make up the socio-economic and cultural characteristics of the respondents include:

**Social/Personal** – Age, marital status, level of education, occupation

**Economic** – Sources of funding the farm, Annual farm income earned, means of acquiring the plot of land.

**Cultural** – Number of children, means of acquiring the plots of land.

These attributes are critical to the question of proper evaluation of technology options, knowledge level and performance of cooperative and non-cooperative women farmers in agricultural production in Enugu state. The contributions of these attributes to the study are presented as follows:

**Table 2: Distribution of the respondents according to the demographic variables.**

**Statistics**

| | Age Bracket | | No. of children | Annual farm income | Educational qualification | Occupation | Types of cooperative affiliated | Plots of farm owned | Means of acquiring the plots of farm land | Sources of funding the farm |
|---|---|---|---|---|---|---|---|---|---|---|
| | 232 | 215 | 215 | 229 | 232 | 232 | 232 | 232 | 232 | 232 |
| Missing system | 0 | 17 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean | 2.51 | 2.28 | 2.28 | 1.29 | 1.81 | 1.24 | 2.14 | 2.50 | 1.79 | 2.83 |
| Standard Deviation | .907 | .653 | .653 | .484 | .903 | .534 | .920 | .762 | .779 | 1.421 |

**Source:** Field Survey, June 2011

Table 2 above is a breakdown of the respondent's demographic variables. The valid numbers are the numbers of respondents used for the interpretation of each variable. The mean and standard deviation for each of the variables are streamlined to help in further analysis of the hypotheses.

**Age of the Respondents**

**Table 3: Responses on the ages of the respondents**

| Age in Years | Frequency (F) | Percent | Mid Point (xi) | Total (fxi) |
|---|---|---|---|---|
| 21 – 30 | 27 | 11.6 | 25.5 | 688.5 |
| 31 – 40 | 95 | 40.9 | 35.5 | 3372.5 |
| 41 – 50 | 79 | 34.1 | 45.5 | 3594.5 |
| 51 – 60 | 27 | 11.6 | 55.5 | 1498.5 |
| 61 – 70 | 4 | 1.7 | 65.5 | 262 |
| **Total** | **232** | **100.0** | **227.5** | **9416.** |

**Source:** Field Survey, June 2011.

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Table 3 above shows the distribution of women cooperative farmers according to their respective age groups in the study area. Group one of the farmers fall within the ages of 21 – 30 years, representing 11.6 percent. It reveals that 40.9 percent (95 women) of the respondents are within the ages of 31 – 40 years. This group plays important roles as formidable source of labor force for farm operations in agricultural production. What is more, another active labor group is within the age bracket of 41 – 50 years having 34.1 percent representing 79 respondents out of 232 farmers, 51 – 60 consisting of 27 farmers represent 11.6 percent. The last group of farmers is in the age brackets of 60 years and above. They represent only 1.7 percent (4 farmers) of the respondents.

**Marital status of the respondents.**

**Table 4: Distribution of the respondents according to their marital status.**

| Valid status | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| Single | 28 | 12.1 | 12.1 | 12.1 |
| Married | 172 | 74.1 | 74.1 | 86.2 |
| Widow | 32 | 13.8 | 13.8 | 100.0 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field Survey, June 2011.

Table 4 above shows the distribution of respondents according to their marital status. 12.1 percent, made up of 28 women are single. It shows that 74.1 percent made up of 172 were married women among agriculture cooperators, 13.8 percent of them representing 32 women are widows.

**Educational Qualification**

**Table 5: Distribution of respondents according to their level of educational attainment.**

| Level of Education | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| No formal education | 106 | 45.7 | 45.7 | 45.7 |
| Primary Education (FSL) | 80 | 34.5 | 34.5 | 80.2 |
| SSCE/WASC/TC II/GCE | 31 | 13.4 | 13.4 | 93.5 |
| HND/B.Sc. | 15 | 6.5 | 6.5 | 100.00 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field Survey, June 2011.

The results in table 5 above depict typical rural setting with the majority of the farmers 45.7 percent representing 106 who were a group that never had any formal education. This is closely followed by those who acquired formal education up to the primary school level with 34.5 percent which reflects 80 farmers having the first school leaving certificate. The third group is composed of the women farmers who were educated up to the secondary school level with SSCE/WASC/GCE/TCII and this represents 13.4 percent (31 farmers). Only 6.5 percent, 15 farmers were educated up to polytechnic and university level with HND/B.Sc./BED. The implication is that farmers in the Women-In-Agricultural programme of ENADEP are predominantly people without formal education and people with primary education (FSLC).

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**Main Occupation of the Respondents**

**Table 6: Distribution of the respondents according to their main occupation.**

| Occupation | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| Valid farming | 189 | 81.5 | 81.5 | 81.5 |
| Trading | 31 | 13.4 | 13.4 | 94.8 |
| Teaching | 12 | 5.2 | 5.2 | 100.0 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field Survey, June 2011

From table 5 above, the subjects were classified according to their main occupation. It shows that 81.5 percent, representing 189 women are into farming, 13.4 percent showing 31 of the respondents are into trading as their main occupation, while 5.2 percent of them representing 12 women are into teaching.

**Plots of farm owned by the respondents**

**Table 7: Distribution of the respondents according to their plots of farm owned.**

| Farm land (in plots) | Frequency (F) | Mid point xi | Total fxi |
|---|---|---|---|
| 0 -1 plots. | 15 | 0.5 | 7.5 |
| 2 – 4 plots. | 85 | 3 | 2.55 |
| 5 – 7 plots. | 109 | 6 | 654 |
| 8 – 10 plots | 23 | 9 | 207 |
| 10 – above | - | - | - |
| **Total** | **232** | **18.5** | **1123.5** |

$\overline{X}$ = 4.8 plots

**Source:** Field Survey, June 2011.

From table 7 above, is a distribution of the farm land ((in plots) owned by the women cooperative farmers. It shows average of 4.8 plots. Culturally, women do not own land in the study area, but for farm operations they as members of cooperative societies can get land for farming from common land for cooperative organizations, especially where the cooperative business enterprises have some plots of land to lease.

**Respondent's means of acquiring the plots of farm land**

**Table 8: Distribution of the respondents according to their means of acquiring their plots of farm land.**

| Means | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| From husband | 83 | 35.8 | 35.8 | 35.8 |
| Lease from cooperative | 130 | 56.0 | 56.0 | 91.8 |
| From relatives | 3 | 1.3 | 1.3 | 93.1 |
| From sons share | 16 | 6.9 | 6.9 | 100.0 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field Survey, June 2011

From table 8 above, the distribution shows that 56.0 percent representing 130 respondents acquire their plots of farm land as lease from cooperative societies, 35.8 percent showing 83 of them acquire their plots of farm land from their husbands, 1.3 percent representing 3 of them acquire land from their relatives while 6.9 percent representing 16 of the women farmers acquire their farm land from their son's share of land.

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**Sources of funding of the respondents' farm operations.**

**Table 9: Distribution of the respondents according to their sources of funding their farm operations.**

| Sources | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| From personal savings | 81 | 34.9 | 34.9 | 34.9 |
| Loan from cooperative | 121 | 52.2 | 52.2 | 87.1 |
| Loan from micro finance | 17 | 7.3 | 7.3 | 94.4 |
| Grants from friends/relatives | 8 | 3.4 | 3.4 | 97.4 |
| Loan from Nig. Agric. Bank | 5 | 2.2 | 2.2 | 100.0 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field survey, June 2011.

From table 9 above, 52.2 percent, representing 121 respondents have their source of funding their farm operations as loan from cooperative societies, 34.9 percent, showing 81 respondents have their funding from their personal savings, only 7.3 percent (17 women) get their source of funding as loan from micro finance agencies, 3.4percent representing 8 of them get fund as loan from Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB).

**Number of children of the respondents.**

**Table 10: Distribution of the respondents according to their number of children.**

| No. of Children | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| 1 – 2 | 24 | 10.3 | 10.3 | 10.3 |
| 4 – 7 | 107 | 46.1 | 46.1 | 56.4 |
| 8 – 11 | 84 | 36.2 | 36.2 | 92.6 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field Survey, June 2011.

Table 10 shows the distribution of respondents by number of children they have, 10.3 percent of the respondents had 1 – 2 children. 46.1 percent representing 107 of them had 4 – 7 children, 36.2 percent of the women farmers (84 of them) had 8 – 11 children.

**Annual farm income of the respondents.**

**Table 11: Distribution of the respondents according to their annual farm income in 2010.**

| Income (₦) | Frequency (F) | Mid point | Total (fxi) |
|---|---|---|---|
| 20,000 – 50,000 | 20 | 35,000 | 700000 |
| 50,000 – 100,000 | 19 | 75,000 | 1425000 |
| 100,000 – 200,000 | 112 | 150,000 | 16800,000 |
| 200,000 – 400,000 | 60 | 300,000 | 18000000 |
| 400,000 – 800,000 | 21 | 600,000 | 12600000 |
| 800,000 – above | - | - | - |
| **Total** | **232** | **1160000** | **4952000** |

$\bar{X}$ = ₦21344.83 **Source:** Field Survey, June 2011.

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Table 11 shows the annual farm income of the cooperative women farmers. Calculations from the distribution gave their average farm income to be ₦21344.83.

**Cooperative Societies Affiliated**

**Table 12: Distribution of the respondents according to the types of cooperative societies they are affiliated to.**

| Types of cooperatives societies | Frequency (F) | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| Women farmers multipurpose cooperative society | 116 | 50 | 50.0 | 50 |
| Agro-processors cooperative society | 84 | 36.2 | 36.2 | 86.2 |
| Out-growers cooperative society | 32 | 13.8 | 13.8 | 100.0 |
| **Total** | **232** | **100.0** | **100.0** | |

**Source:** Field Survey, June 2011.

Table 12 above shows the distribution of respondents according to the types of cooperative societies they belong. Majority of them 50 percent are members of women farmers' multipurpose cooperative societies, followed by Agro-processing 36.2 percent and out-growers cooperatives.

## 5.0 Summary of Findings, Conclusion and Recommendations

### 5.1 Summary of Findings

This research work made use of assessment of mainly women cooperative farmers' adoption trends of ten selected agricultural technologies promoted by WIA programme of ENADEP. From the results of the study, the following was discovered: In most cases, the adoption behavior of women-in-agriculture cooperative in Enugu State Agricultural Development Programme (ENADEP) is not strictly different from that observed among other farmers as generally found from the reviewed literature. Many characteristics as significant in this study of the farmers are consistent with some other researches. No socio-economic characteristics correlated with the adoption score at a statistically significant level.

### 5.2 Conclusion

This study appraised the women-in-agriculture cooperators' adoption of agricultural innovations in ENADEP. It found the extension staff involved in the programme to be doing their best in diffusion of agricultural technologies. Comparatively, women farmers involved in cooperative activities were having almost the same rate in adopting improved agricultural technologies with non-cooperative members, even though extension agents confirmed it was much easier to administer extension services to women farmers through cooperative societies. Several challenges were identified to be inhibiting the administration of WIA programme extension services in ENADEP and the women farmers had their constraints in the adoption of technologies. Prominent among them are poor salary and other incentives to the extension staff, weak logistics to back-up extension delivery and poor motivation among staff, illiteracy and poverty among the women cooperators, low capitalisation and lack of adequate training of cooperative members and management to aid them in adopting agricultural innovations. Women-in-agriculture programme is one programme that cannot be ignored in the development of agriculture and the improvement of the standard of living of the women agriculturists in Enugu State. Supply of improved recommended agricultural technologies and assessing feedback through cooperative platform is still vital to its success as well as

adoption of agricultural innovations by the women agriculturists to aid agricultural development of the state.

### 5.3 Recommendations

This study, no doubt, has raised a number of issues. Therefore we recommend the following;

i. **Liberalization of credit to women:** Financial Agencies like Micro Finance, Insurance Houses, Bank of Agriculture, etc. should encourage women cooperative farmers by giving them loan. Since these women as members of cooperative societies are guided by the ethos, principles and values of cooperatives will hardly be loan defaulters, as found in the literature.

ii. **Assistance women cooperative farmers:** Women cooperative farmers should not miss cooperative education of their executives and the entire members since this will help them learn how to manage the society financially and otherwise. Agricultural cooperative was found to contribute highly to the women cooperators.

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