

Comparative Analysis of Socio-economic Characteristic of Rural Women Cooperators in Nigeria: Evidence from Benue State

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ABSTRACT This study was conducted to examine the influence of socio-economic characteristics on communication of agricultural innovations amongst women cooperators and women non-cooperators in Benue state. The objectives of this study were to: (1) Describe the socio-economic characteristics of women cooperators and non-cooperators in Zone C, Agricultural and Geopolitical Area of Benue State. (2) Examine the socio-economic factors that distinguished communication levels of rural women cooperators and non-cooperators in the area. Three women cooperative societies and non-cooperative members were randomly selected. From each of the three cooperative societies, 25x3 = 75 respondents and 75 women non-cooperators were interviewed using simple random sampling techniques. On the whole, 75x2=150 women cooperators and non-cooperators were purposively and randomly interviewed. The results showed that apart from age, there were significant differences in the socio-economic characteristics of cooperators and non-cooperators. Nine variables were positively related to communication of agricultural innovations for co-operators, while three variables were significantly related to communication of agricultural innovations by non-cooperators. On the part of women cooperators, socio-economic characteristics all together affected communication by about 46%. Out of these, contact with extension, membership of cooperatives, level of formal education, farm size and agricultural credit accounted for 40% of the variance. Contact with extension agents ranked highest with 15% of the variance. For non-cooperators, the selected variables accounted for about 20% of the variance in communication. Out of this, household size, level of formal education, age and non-farm income accounted for 18% of the variance in communication. Contact with extension agents is surprisingly not making significant contribution. This may be explained by the availability of information sources like friends, neighbours and relatives etc and the fact that non-cooperators could not arrange for extension agents for visits. It is recommended that for extensive information dissemination of agricultural innovations, extension service which is public goods be extended equally to both organizational members and non-members. In view of the fact that not many people who handle agricultural and cooperative matters are aware of what cooperatives stand for, cooperative education should be carried out at all levels of the society. This will help to broaden the financial base and increase their number and size distribution to impress the crucial importance of cooperatives in the process of socio economic development upon the generality of the people.

INTRODUCTION

With an estimate 140 million inhabitants and a population growth of 2.5% annually, Nigeria is the most populated country in sub-Saharan Africa and the 10th most populated country in the World (NPOC 2006). Approximately, 49 percent of the population engages in agriculture as their major occupation. The agricultural sector is the mainstay of the majority of Nigerian rural poor, with over 70 percent of the active labour force in rural areas employed in agriculture and the sector contributing over 23 percent of the GDP in 1996 (World Bank 2007)

The contribution of women in agriculture is

poorly documented in Nigeria. This largely because women carry out activities that are unpaid (informal non market activities) such as domestic work care giving day care, preparation of meals, working on husbands' farm and family farm apart from own farm, disposing of garbage, market and shopping etc. (FOS 1999; NLSS 2004). These informal and non -market activities that women perform is not officially accounted for in the Systems of National Accounts (SNA) thereby undervaluing their contribution and overlooking the impact of these activities on the overall development of the economy. This is due to the social constructs and cultural inclinations of the society in which they belong as well as those

functions imposed on them by virtue of the fact that they are female. The significant contribution of women to food production and process has been empirically reported in various micro level studies in Nigeria (Afolami and Ajani 1996; Ani 2003). The studies revealed that they are fully engaged in a wide range of other off-farm and household activities.

Women play a major role in the production of food crops and also undertake activities such as trade to earn cash income. Female farmers are associated with traditional subsistence and low-yield food crops, due to their lack of influence and their inability to access agricultural innovations (Ani 2003). There may be differences in agreement as to the extent of the involvement of women in agricultural production, but there is a consensus that women are important participants in all sub-sectors of agriculture, namely crops, livestock, fisheries and agro-forestry.

Bzugu and Kwaghe (1997) reported that women form the highest proportion of the economically active population in rural Nigeria and play an important role in agricultural activities in subsistence food production, where they contribute an estimated 60-80 percent of the total labour used. The women contribute significantly to both the economic growth and national development (Ajayi 1997).

However, women access to needed farm resources have been assessed to be very low due to marital and religious reasons, lack of awareness caused by low literacy, lack of ownership and control of land, lack of sufficient and substantive collateral and inadequate knowledge of training in the use of improved innovations (Hassan et al. 2002).

Also, the reasons for poverty among female agricultural workers are numerous: no access to right innovation information, low productivity, poor agricultural produce prices, hence poor farm income, inadequate infrastructure and limited access to credit and improved farm inputs (Ojowu et al. 2007). Communication of innovations is important to provide information and knowledge on agricultural innovations and adoption to eliminate poverty amongst women. This is not surprising, as women comprise the majority of the world's poor in both the urban and rural sectors and the majority of those working in the informal sector (Spiedoch 2007).

Establishing dialogue with people can

empower them to make right decisions for their own development (Adetoun 2003). There is a symbolic relationship between communication and development. Realizing the important role of communication in rural development, Food and Agriculture Organization (FAO) recommended that development of support communication be an integral part of any development initiatives so that appropriate medium or media to effectively reach the target populace be specified (Yahaya 2002).

Nigeria has elaborate agricultural research and extension system (Oladele 2004). Far reaching innovations that are capable of boosting farmers agricultural production and Nigeria's economic development have been developed (Oladele 2004). Unfortunately, most of these innovations do not reach the farmers and this has been attributed to lack of effective agricultural information dissemination machinery (Ozowa 1995). According to Okwu and Obinne (2000), the problem of agricultural development in Nigeria like any other developing countries of the world, lies with the rate of transfer of improved agricultural technologies to farmers and not with the lack of the technology per se. The actual impact of agricultural extension information dissemination could be felt if the agencies have greater access to local information regarding their preference and needs of their residents (World Bank 2007).

The need for this study lies in the fact that development is not foreseeable without information and information cannot play its role until it is communicated. Communication of agricultural innovations is the engine of growth and social transformation in rural areas (Igbashal et al. 2009). Also, cooperatives are a suitable organizational frame work for accelerated rural development and are useful instrument for the mobilization and sensitization of rural women about agricultural innovations and rural development (Okwoche 1998). Women all over Nigeria embrace the idea of cooperative formation because they realize its importance in increasing their credit worthiness and placing them in a position of strength to support income generating activities out of their pooled resources. The objectives of this study were to:

- (1) Describe the socio- economic characteristics of women cooperators and women non - cooperators in zone agricultural area of Benue state

- (2) Examine the factors that distinguished communication levels of women co-operators and non- co-operators.

METHODOLOGY

The areas of the study are within the zone (C) area of Benue State Agricultural and Rural Development Authority (BNARDA). Three women cooperatives from three villages and non-cooperators were selected. Purposive simple random sampling technique was used in the selection of 25 respondents from each of the three cooperatives, $25 \times 3 = 75$ women cooperators. On the other hand, from each of the three villages, $25 \times 3 = 75$ women non-cooperators were interviewed. A total of $75 \times 2 = 150$ respondents were selected for the research. The major occupation of the people is farming of crops (yam, water yam, cassava, guinea corn, maize, millet, rice etc). However, some inhabitants are engaged in other jobs like trading, public service including teaching. Inferential statistics such as t-test, Pearson Product Moment Correlation (PPMC) and Step-wise regression were used to test the objectives of the study.

RESULTS AND DISCUSSION

It was observed from table 1 that 85% of women cooperators and 87% women non-cooperators were between 31 and 50 years of age. This could mean that there was a predominance of middle aged women among the two groups. The mean age for women cooperators was 38 years and 40 years for women non-cooperators. This indicated that the women were strong to take to farming as a vocation. Since the calculated t-value 1.33 was less than the tabulated t-value 1.96 at 0.05 level of probability, it could therefore be concluded that there was no significant difference between the age of the two groups.

Household size of 6-8 members formed the highest class for both the groups with the women cooperators having 64% and women non-cooperators 68% respectively. The household size mean for women cooperators was 9 and 8 for women non-cooperators t-test showed that the calculated t-value 2.45 was greater than the tabulated t-value 1.96 at 0.05 level of probability, which means that there was significant difference in the household of cooperators and non-

cooperators. The need for family labour supply could be responsible for the high figure. This agrees with Emerole (2006) who asserted that household economic work force accounted for (63.9%) in a study conducted on employment types and small holder farm household in Ikwuano, Abia State, Nigeria.

The mean years of formal education for women cooperators and non- cooperators were 12 and 9 years respectively, the t-test showed that, the calculated t-value 4.06 was greater than tabulated t-value of 1.96 at 0.05 level of probability, which means that, there was significant difference in the level of formal education of women co-operators and women non- cooperators. Differential educational background of farmers usually accounts for differences in managerial ability which inturns determine to a large extent the overall success of the farm business. This view was supported by Okoye (2004) who said that literate farmers are expected to be more receptive to innovations that will increase farm efficiency.

The average farm size for cooperators was 5.10 hectares while that of women non-cooperators was 3.02 respectively. The t-test showed that, the calculated t-value 9.43 was greater than the tabulated t-value 1.96 at 0.05 level of probability, which means that there was significant difference in the farm size of co-operators and non-cooperators. This confirms Adenagan and Oladele's (2002) study which indicated that Nigerian farmers are mainly small scale farmers, farming on small farm size that is less than 5 hectares.

The mean agricultural credit taken by women cooperators and non- cooperators were N43,350 and N23,180 respectively. The t-test showed that the calculated t-value 5.51 was greater than the tabulated t-value 1.960 at 0.005 level of probability. Therefore, the difference between credit of cooperators and non - cooperators was significant.

The mean farm income for cooperators was N46, 518 while that of the non- cooperators was N28,620. The t-test showed that, the calculated t-value 9.25 was greater than the tabulated t value, 1.960 at 0.05 level probability, which means that there was significant difference in the farm income of cooperators and non-cooperators. The income can be said to be too little to invest on agricultural innovations that will bring more yields and income to lift up that standard of living of rural

Table 1: Socio-economic characteristic of the women cooperators and women non-cooperators

Variables	Women cooperators No. of Respondents		Women non-cooperators No. of Respondents	
	F	%	F	%
Age (Year)				
≤ 30	11	14.66	8	10.66
31 - 40	36	48.00	35	46.66
41 - 50	28	37.33	30	40.00
51 - 60	-	-	2	2.66
Total	75	100.00	75	100.00
Mean	38	40		
Calculated t-value	1.33			
Tabulated t-value	1.96			
Household Size				
3 - 5	3	4.28	11	14.66
6 - 8	48	64.00	51	68.00
9 - 11	22	29.33	11	14.66
≥ 12	2	2.66	2	2.66
Total	75	100.00	75	100.00
Mean	9	8		
Calculated t-value	2.45			
Tabulated t-value	1.96			
Level of Formal Education (years)				
Non formal education	13	17.33	50	66.66
Primary school	27	36.00	16	21.33
Secondary level	11	14.66	6	8.00
Tertiary level	24	32.00	3	4.00
Total	75	100.00	75	100.00
Mean	12	9		
Calculated t-value	4.06			
Tabulated t-value	1.96			
Farm Size (Ha)				
1 - 3	28	37.33	68	90.66
4 - 6	45	60.00	7	9.33
7 - 9	2	2.66	-	-
Total	75	100.00	75	100.00
Mean	5.10	3.02		
Calculated t-value	9.43			
Tabulated t-value	1.96			
Agricultural Credit (N)				
≤ 12,000	5	6.66	9	10.66
12,100 - 22,000	5	6.66	24	32.00
22,100 - 32,000	5	6.66	23	30.66
32,100 - 42,000	28	37.33	7	9.33
42,100 - 52,000	31	41.33	4	5.33
≥ 53,000	1	1.33	-	-
Total	75	100.00	75	100.00
Mean	43,350=		22,183=	
Calculated t - value	5.51			
Tabulated t-value	1.96			
Farm Income (N)				
≤ 20,000	6	8.00	22	29.33
20,100	13	17.33	53	70.66
30,100	26	34.66	-	-
40,100	30	40.00	-	-

Table 1: Contd. ...

Variables	Women cooperators No. of Respondents		Women non-cooperators No. of Respondents	
	F	%	F	%
Total	75	100.00	75	100.00
Mean	46,518		28,620	
Calculated t-value	9.25			
Tabulated t-value	1.96			
Non - Income (N)				
≤ 20,000	20	26.66	56	74.66
20,100-30,000	31	41.33	16	21.33
30,100-40,000	19	25.33	3	4.00
40,000-50,000	3	4.00	-	-
≥ 50,000	2	2.66	-	-
Total	75	100.00	75	100.00
Mean	N32, 524		N19,200	
Calculated t-value	6.29			
Tabulated t-value	1.96			
Possession of Durable Goods and Services				
0	-	-	18	23.99
≤ 15,000	16	21.33	16	21.33
15,100-50,000	15	15.00	29	38.66
50,100-85,000	13	17.33	9	12.00
85,100-120,000	20	26.66	3	4.00
120,100-155,000	11	14.66	-	-
Total	75	100.00	75	100.00
Mean	N85,300		N40,531	
Calculated t-value	4.10*			
Tabulated t-value	1.96			
Number of Extension Contacts				
0	0	0	50	66.66
1	1	1.33	22	29.33
2	1	1.33	3	4.00
3	56	74.66	-	-
4	17	22.66	-	-
Total	75	100.00	75	100.00
Mean	3	1		
Calculated t-value	2.55*			
Tabulated t-value	1.96			

* Significant at 0.05 level of probability

farmers. The satisfaction derived from agriculture by the women was low and significantly related to the size of the household farm and the share of the farm income that they obtained (Rahman 2008).

The mean number of agricultural extension contacts with the cooperators were 3 and for non-cooperators 1.

The t-test showed that the calculated t-value 2.55 was greater than the tabulated t-value 1.960 at 0.05 level of probability. Hence there was significant difference in the number of visits by the agents to the two groups.

Table 1 showed that, for women cooperators, non-farm income class of N20,100 - N30,000 had the highest (41%) of the total score while that of the women non-cooperator fell within less or equal to N20,000 class with about (75%). The mean score of non-farm income for cooperators was N32,524 while that of non-cooperators N 9,200. The t-test showed that the calculated 6.29 was greater than the tabulated t-value 1.96 at 05 level of probability, therefore, the results indicated that the differences between the non-farm income of the two groups was significant.

Possession of durable goods and services in table 1, most cooperators (27%) fell within the value of durable goods class (N85,100 - N20,000) while most of non-cooperators (39%) fell within the class of N15,100 - N50,00 only. The mean value of durable goods and services for cooperators was N85,300 while non-cooperators had N40,45 respectively. The durable goods considered using minimum estimate include wrist watches, motorcycle, bicycles, zinc-roofed houses, cupboards for storing dishes, sewing machines and radio sets etc. The t-test showed that the calculated t-value 4.10 was greater than the tabulated t-value 1.96 at 0.05 level of probability, therefore, the difference of the durable goods and services of the two groups was significant.

Farm income, on-farm income, level of formal education, possession of durable goods and services of cooperators were higher than non-cooperators. These factors may be explained that the economic status of women cooperators were higher than that of non-cooperators. They are used as indicators of economic status or level of livings which could have partial reflections of the actual state of living of the women. The indicators could indicate the farmers' current state of living in several ways, for example, Olukosi (1979) believes that households which possess more items are not likely to fall below the subsistence level during hard times.

Table 2 showed that nine of the variables were positively related to communication of agricultural innovations by women co-operators. The variables were level of education, farm size, farm income, agricultural credit, membership of co-operative, possession of durable goods and services, contact with extension and length of membership. It is concluded therefore that there

was a significant relationship between those variables and communication of agricultural innovation. However, household size though positively related to communication, was insignificant. Age was negative and insignificantly related to communication. The negative relationship between age and communication among women co-operators may be due to the fact that the younger generations are more likely to imbibe the concept of co-operation than the elder generation.

Table 2 also showed that only three variables were significantly related to communication by women non-cooperators. These were household size, farm income, and non-farm income. Other variables like age, level of education, farm size, agricultural credit, possession of durable goods and contact with extension agents though positive, were not significantly related to communication of agricultural innovations by non-cooperators.

Table 2: Pearson correlation analysis of relationship between selected variables and communication of agricultural innovations among women co-operators.

<i>Variable cross classified</i>	<i>Correlation coefficient (r) cooperators</i>	<i>Correlation coefficient (r) non-cooperators</i>
Age	-.100	.112
Household size	.120	.304*
Level of formal education	.270*	.190
Farm size	.396*	.173
Farm income	.631*	.200
Non farm income	.464*	.213*
Agricultural credit	.310*	.123*
Membership of cooperatives	.502*	.000
Possession of durable goods	.418*	.114
Contact with extension	.261*	.128
Length of membership	.334*	.000

* Significant at 0.5 Level of Probability

The stepwise regression analysis for the co-operators on table 3, showed that the independent variable all together affected communication by about 46%. Out of these, contact with extension agents, membership of co-operatives, level of formal education, farm size and agricultural credit, accounted for 40% of the variance. Contact with the extension ranked highest with 15% of the variance. Among the variables considered in the regression analysis, age, household size and

length of co-operative membership made the last contribution. The low contribution made by length of co-operative membership is surprising as one would expect that the longer one stays in the society, the more she would have access to sources of information. The low contribution may be explained by the leadership's inability to source for agricultural information for the its members.

Table 3: Stepwise regression analysis of the relationship between co-operators socio-economic characteristics and communication of agricultural innovation

Variable	Coefficient of determination R ²	Change in R ²
Contact with extension	.15235	.15235
Farm size	.24348	.09113
Membership of co-operative	.31999	.07651
Level of formal education	.37581	.05582
Agricultural credit	.40744	.03163
Non-farm income	.42870	.02126
Farm Income	.44790	.01920
Possession of durable	.45701	.00911
Length of cooperative membership	.45918	.00217
Household size	.45939	.00021
Age	.45949	.00010

The stepwise regression in table 4 showed the degree of relationship between non-cooperators' socio-economic characteristics and communication of agricultural innovations. The selected variables accounted for about 20% of the variance in communication. Out of this household size, level of formal education, age and non-farm income accounted for 18%. Length

Table 4: Stepwise regression analysis of the relationship between non-cooperators' socio-economic characteristics and communication of agricultural innovations.

Variable	Co-efficient of determination R ²	Change R ²
Household size	.09207	.09207
Level of formal education	.14888	.05681
Age	.17561	.02673
Non-farm income	.18696	.01135
Possession of durable goods	.19342	.00646
Farm Income	.19733	.00391
Agricultural credit	.20031	.00081
Contact with extension	.20074	.00043
Length of cooperative membership	.20074	.00000
Membership of co-operative	.20074	.00000

of cooperative membership and membership of cooperative make no contribution at all. This is not surprising as non-cooperators are not members. Contact with extension agents is surprisingly not making significant contribution. This may be explained by available of informal sources of information like friends, relatives, traders etc. and the fact that non-cooperators may not be able to arrange for extension agents for visits.

CONCLUSION

The study was conducted to examine the differences in the socio-economic characteristics and communication of agricultural innovations among women cooperators and non-cooperators. The results have shown that there were significant differences in the selected variables and communication levels of cooperators and non-cooperators. The gap may be as a result of using cooperative society as a channel through which innovations were disseminated to the women and the process to adopting them.

Women agricultural cooperatives is unquestionably an agent of social and economic change. It advocates positives changes in the socio-economic status of the less privileged by means of pooling resources together and working for the mutual interest of all. Such an organization having change as its watch word, is more disposed to accepting positive changes as envisaged in the process of technology transfer. New farm practices are of little value until they are known and can be put to some practical use for the economic and social well-being of the people involved.

RECOMMENDATION

For extensive dissemination of agricultural innovations, extension services which are public goods be extended equally to both organization members and non-members by the government at all levels.

To achieve the purpose for which these women agricultural cooperatives were formed, cooperatives should be strengthened and provided with the necessary information on agricultural innovations, logistic support, trained manpower and infrastructure.

In view of the fact that not many people who handle agricultural and cooperative matters are aware of what cooperatives stand for, inten-

sification of cooperative education should be carried out at all levels of the society in order to broaden the financial base, increase their number and size distribution.

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