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## **Categorization of Rural Youth on Utilization of Agricultural Information on Arable Crop in Southwest Nigeria**

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### **Authors' contributions**

*This work was carried out in collaboration between the two authors. Author OAO designed the study as a doctoral student, collected data, performed part of the statistical analyses, wrote the protocol, (a portion of the Ph.D Dissertation of the Correspondent Author ( Faculty of Agricultural Sciences, Ladoke Akintola University of Technology, Ogbomoso, Nigeria) and the first draft of the manuscript. Author JGA supervised the thesis, performed part of the analyses of the study. Both authors read and approved the final manuscript.*

**Short Communication**

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### **ABSTRACT**

**Aims:** This study was designed to categorize rural youth on utilization of agricultural information on arable crop in southwest Nigeria.

**Study Design:** Multi-stage Sampling technique with quantitative approach was adopted.

**Place and Duration of Study:** Rural youth planting arable crops in Oyo and Osun States, Nigeria, observed between February 2009 and July 2010.

**Methodology:** Respondents sampled included 455 rural youth (389 males, 66 females; age range 18-35 years).

**Results:** The sampled rural youth were categorized into three: low, average and high users' of agricultural information based on their utilization scores. Test of Mean of difference using ANOVA shows significant increase in mean age (28.22 to 30.79, (F= 10.593; P=.05), perception of utilization of agricultural information (35.54 to 40.27 (F= 20.32, P=.05) from low to high users' categories. On the other hand the mean household size significantly increase (3.69 to 4.35) but declined from average users' category to high (4.35 to 4.31) with F= 6.371; P= .05. Rural youth in the low users' category were found to have higher mean farm size and decrease significantly (2.50 to 1.14 (F= 11.484, P=.05).

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**Conclusion:** The rural youths' age, household size, farm size and perception of utilization of agricultural information significantly influenced the categories of users' of agricultural information on arable crops.

*Keywords: Agricultural information; rural youth; arable crop; farmers; categorization; Nigeria.*

## 1. INTRODUCTION

Using information a key issue in this present information age. The real challenge of our time is not producing information out but getting people to use the available information [1]. The changing nature of agriculture has also affected agricultural information to be changing especially in its contents, the means by which it is disseminated and its marketability as a commodity [2]. [3] also noted that agricultural information is an essential ingredient in agricultural development programmes but farmers seldom feel the impact of agricultural innovations; they either have no or low access to such vital information or are poorly disseminated. In dissemination of information, it is imperative that specific information for specific target group are made available to ensure that the needs and aspirations of the target group (rural youth) are met but there is a dearth of such information.

Therefore, for effective utilization of information in agricultural sector such information must be relevant, timely and accurate, up to date and effectively presented in order to satisfy the need of the beneficiary. Information has been identified as vital ingredient in adoption process. The way an individual perceive information sources and attributes of innovation, in addition to available resources determines overt action in terms of utilization of such information [4].

Categorization of rural youth based on utilization of agricultural information makes it easier and more meaningful to make description of that population than the description of an individual young farmer. Since each category comprise farmers of similar characteristics, such representation of young arable crop farming population is quite relevant in addressing common needs for introducing localized rural change in their community. Also, categorization of young arable crop farmers in the rural areas could serve as a contact point for extension agency as they could be used to reach other young farmers within their community in order to disseminate new ideas and innovations on arable crops [5].

Rogers [5] developed adopter categories and rural populations were categorized into five based on when the farmers first began using any particular and widely accepted new practices. These are: innovators, early adopters, early majority, late majority and laggards. Each of these adopter categories have their peculiar characteristics. In a study carried out among rice farmers in Ogun state, Nigeria, according to [6] rice farmers were categorized into five based on level of use of indigenous rice practices in rice production. These are: The innovators, minor indigenous practitioners, intermediate indigenous practitioners, major indigenous practitioners and pure indigenous practitioners. Also, [7] carried out a study on adoption of integrated pest management (IPM) practices by South Carolina Cotton Growers, based on their responses; growers were placed into three categories of IPM adoption: low, medium, and high adopters. Meanwhile, little or no effort has been tailored towards categorization of rural youth based on level of use of agricultural information on arable crops. [8] viewed rural youth to include males and females who own their existence and identity to the rural areas and whose family life depends directly or indirectly on agriculture. He

therefore classified rural youth into: In school male youth, In-school female youth, out-of school male youth and out- of school female youth.

According to [9], it was reported that over 510 million young women and 540 million young men live in the world today according to United Nations estimates. Although, the proportion of youth in the world is dwindling; by 2025, it is forecasted to fall to 16 percent from 18 percent of the world's population. The majority of the young people (85 percent) live in developing countries, the youth population in sub-Saharan Africa will continue growing until 2050 and beyond; between 2010 and 2050 it is expected to increase by 182 million. The number of youth in South Asia is projected to increase by 15 million between 2010 and 2020. In Latin America and the Caribbean the youth population will continue growing until 2020 and in North Africa until 2035, before it begins to decline [9]. It is therefore necessary to consider the relevance of this important segment of rural population in agricultural production especially in Nigeria. It is against this background that this study was designed to provide answer to the following research question?

What are the personal characteristics of rural youth to be considered in categorization of the respondents into various agricultural information users?

## **2. METHODOLOGY**

The study was carried out in Oyo and Osun states of Southwest Nigeria. Multistage sampling technique was used in the selection of the respondents. From each selected states, fifteen percent of the constituents Local Government Areas were selected, making five local government areas selected from each state, and ten Local Government Areas altogether. In the second stage, from the village list provided by the two states Agricultural Development programmes (ADPs) [10], One hundred and fifteen villages were sampled constituting five percent of the total villages using simple random sampling technique. At the village level, purposive sampling technique was adopted in the selection of rural youth based on age criteria of 18- 35 years. A total of four hundred and fifty five respondents formed the sample size for the study. Data were collected with the aid of structured interview schedule. Data analysis was carried out using descriptive statistics such as mean, standard deviation, frequency and percentages while Analysis of Variance (ANOVA) and Duncan Multiple Range Test (DMRT) was used to show significant difference in the characteristics of the different categories of agricultural information users.

### **2.1 Measurement of Variables**

The dependent variable of the study was the level of utilization of agricultural information on selected arable crops. Respondents were presented with 54 items of agricultural information on selected arable crops. The agricultural information items were of three categories, namely: technical information, marketing/ economic information and legal information. They were asked to indicate number of times they utilized those information in the past 5 planting seasons. The responses were recorded for each item of agricultural information. The aggregate rural youth's score was his/her level of utilization of agricultural information on selected arable crops. The minimum score was 0 and maximum score was 270 points. This study assumes that rural youth's utilization scores are normally distributed. The rural youths' raw scores on the level of use of agricultural information on selected arable crops were thus transformed into standard t scores. The t score is to reflect the actual relative differences in

their value and eliminate biases in the score. The raw scores were transformed into a scale with a mean of 50 and standard deviation of 10.

The t standard score was obtained as follows:

$$t = \left( \frac{X - \bar{X}}{S} \right) 10 + 50$$

Where  $X$  = raw scores;  $\bar{X}$  = the mean of the raw scores;  $S$  = Standard deviation of the raw scores [11].

The raw agricultural information utilization scores was transformed to t – scores on a scale of 54 selected agricultural information items on selected arable crops. The minimum and maximum t – scores were 44 and 69 points respectively. The distribution of the respondents' utilization t - scores shows that the mean, mode and median of the scores respectively were 50, 52, 51 with standard deviation of 10, showing an almost normal distribution [12]. The same procedure was used by Rogers [5] in the categorization of farmers into adopter categories. Based on the distribution, mean and standard deviation, the respondents were categorized into three based on individuals' agricultural information utilization scores which are: low, average and high information users.

### 3. RESULTS AND DISCUSSION

The result of the analysis revealed that close to half (47.7%) of the respondents were classified into low information users' (LIU) category. More than one-third (36.5%) of the respondents belonged to the average information users (AIU) and about 16% of the sampled rural youth were categorized as high information users (HIU) as shown in Table 1. The finding of this study implied that majority of the respondents were between low and average information user's category. Thus, majority of the sampled rural youth make average or low use of agricultural information on selected arable crops.

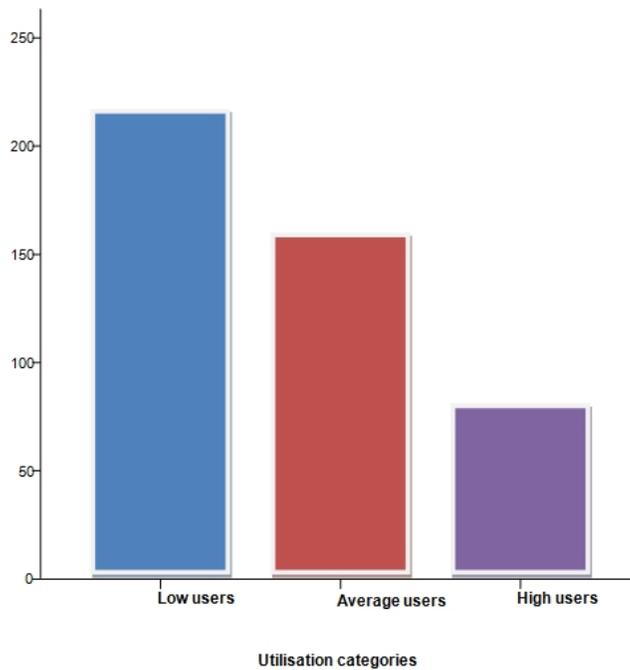
The distribution of the respondents into three categories of agricultural information users was positively skewed towards young farmers as they were either classified into low or average agricultural information users as it could be seen in Fig. 1.

Respondents who belonged to the high information users category (t- score = 60– 69) could be termed to be “innovators” who were ready to embrace new technology, although, they were few in number when compared to other categories (low and average) information users.

**Table 1. Distribution of respondents according to categories of agricultural information users'**

	Categories of agricultural information Users		
	Low	Average	High
Borderline	$(\bar{X} - \text{ISD to } \bar{X})$	$(\bar{X} \text{ to } \bar{X} + \text{ISD})$	$(> \bar{X} + \bar{X} + \text{ISD})$
t – score	40 – 49	50 – 59	60 – 69
Frequency	217 (47.7)	167(36.7)	71(15.6)
Cumulative frequency	217	384	455
Cumulative percentage	47.7	84.4	100.0

Mean T score ( $\bar{X}$ ) = 50; S. D. = 10; \*Parentheses indicate percentages.



**Fig. 1. Bar chart showing the number of respondents in different categories of agricultural information users**

Data reported in Table 2 revealed the differences in the characteristics of different categories of information users. ANOVA tests showed significant differences among the categories in all characteristics. The follow up statistical test using Duncan Multiple Range Test for selected variables revealed that age, household size and perception of utilization of the agricultural information of the respondents in average and high information user's categories were not statistically different but differs significantly from those in the low category of agricultural information users as shown in Table 2. Meanwhile, there is no significant difference in farm size of low and average agricultural information users' categories but they differ significantly from those of high information users across the study area. Furthermore, from the same Table 2, there is no significant difference in access to agricultural information on selected arable crops in those of low and high categories of information users but they differ significantly from access to information when compared with those respondents in the

average information users' category. Finally, there were no significant differences in mean years of formal education, farming experience, socioeconomic status scores, frequency of use of information sources and availability of information across the different users of agricultural information in the study area.

From Table 2, it could be seen that the average and high information users were relatively older in age, with high (favorable) perception of utilization of agricultural information score, large household size when compared with those in the low information user's categories. It was also found out that the respondents in different categories (low, average and high) have the same level of formal education, farming experiences, socio-economic status, frequency of use of information sources and availability of information on selected arable crops. But those in the low and average categories have larger farm size than those in the high information users' category while those in low and high information users' categories have more access to information sources than those in the average users' category. This finding revealed that the respondents in the average information users' category have similar characteristics with those of high information users' category as against the low information users' group. This finding has a great implication for extension institutions in disseminating information to this important segment of rural population because these characteristics would assist the extension agency to identify rural youth and make them as a focus in promoting agricultural innovations. Also, it could be inferred that age, household size, farm size and perception of utilization of agricultural information influenced utilization of agricultural information.

It could be seen that the various categories of agricultural information users among young farmers differs significantly in characteristics such as age, farm size, household size and perception of utilization of agricultural information. While other independent variables (level of formal education, farming experience, households size, socio economic status, frequency of use of sources of information) for the three categories of information users does not predict the categories of information users they could be categorized into. From this finding, it could be inferred that young arable crop farmers can be validly and reliably categorized based on their age, farm size, household size and perception of utilization of agricultural information on arable crops in relations to the use of agricultural information.

**Table 2. Summary of respondents' characteristics in the categories of agricultural information users'**

Selected personal characteristics (Mean)	Categories of information users			
	Low (N=217)	Average (N=167)	High (N=71)	F- value
Age (years)	28.22 <sup>b</sup>	30.57 <sup>a</sup>	30.79 <sup>a</sup>	10.593*
Year of formal Education (years)	8.35 <sup>a</sup>	8.37 <sup>a</sup>	7.66 <sup>a</sup>	0.634
Farming Experience (years)	11.80 <sup>a</sup>	12.70 <sup>a</sup>	12.10 <sup>a</sup>	1.337
Household size	3.61 <sup>b</sup>	4.35 <sup>a</sup>	4.31 <sup>a</sup>	6.371*
Farm size (ha)	2.50 <sup>a</sup>	2.04 <sup>a</sup>	1.14 <sup>b</sup>	11.484*
Socioeconomic status score	153.83 <sup>a</sup>	157.41 <sup>a</sup>	154.99 <sup>a</sup>	1.098
Frequency of use of information sources	33.96 <sup>a</sup>	34.37 <sup>a</sup>	31.82 <sup>a</sup>	0.957
Perception of utilization of agricultural information	35.54 <sup>b</sup>	39.87 <sup>a</sup>	40.27 <sup>a</sup>	20.323*
Availability information	25.39 <sup>a</sup>	25.19 <sup>a</sup>	25.63 <sup>a</sup>	0.775

<sup>a,b</sup>Means carrying different superscript are significantly different.

\*Significant @ P=.05

#### **4. CONCLUSION**

The study categorized rural youth into three: high, low and average information users based on their level of utilization of agricultural information on arable crops. The rural youths' age, household size, farm size and perception of utilization of agricultural information significantly influenced the categories of agricultural information users. The selection of representative contact farmers for rural youth extension programme can thus be carried out using the categories of information users in this study. This implies that extensionists could identify the high information user's category among young farmers: these are rural youth that are relatively older in age, with relatively high socio economic status, and that are favorably disposed to utilization of agricultural information. Also, possesses relatively small farm size. The identification of each category would thus enhance planning an appropriate programme for change for rural youth in the study area.

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#### **COMPETING INTERESTS**

The authors have no competing interests that could potentially bias our work.

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