

Preferred Sources of Information Used by Cassava Farmers in Delta State, Nigeria

Abstract

This study ascertained the information sources that cassava farmers preferred to use in Delta State. Area and stratified sampling techniques were used to select villages and farmers. A total of 125 respondents were used for the study. A structured questionnaire was used to collect data. Data were analysed by use of percentages, mean scores, rankings, and factor analysis based on homophily and heterophily communication factors. This study found that the average age of the cassava farmers was 43.1 years. Neighbour was the most preferred source of information by the cassava farmers. The second and third preferred information sources were opinion leaders and farmers' cooperative society respectively. The result of factor analysis revealed that heterophilous factors had higher factor loadings for neighbours, farmers' cooperatives, friends and television. This result proved that nowadays, cassava farmers preferred heterophilous information sources, from those that belong to higher social strata due to search for improvement in farming practices.

Key Words: Information, Sources, Cassava, Farmers.

Introduction

Cassava (*Manihot esculenta*) is a major food crop in Nigeria. Cassava tubers can be processed into different forms for human food and livestock feed (Ironkwe and Olojede, 2012). The crop is suitable to various farming systems and available all year round in Delta State of Nigeria (Agbam and Esegbe, 2007). Cassava has the potential of performing better than other crops under suboptimal environmental conditions. The research efforts of National Root Crops Research Institute, Umudike, Nigeria and that of the International Institute of Tropical Agriculture, Ibadan, Nigeria have led to the release of high yielding and disease resistant cassava varieties. This has led to the expansion of cassava production in Nigeria. Some of the commonest improved varieties of cassava in Delta State are TMS 30572, TMS 30555, TME 419, NR 8082 and NR 8208. These improved varieties and local cassava cultivars are cultivated by majority of crop farmers in Delta State. Hahn et al (1979) stated

37 that cassava was rapidly adopted by farmers and integrated into the traditional
38 farming and food systems of Africa because of its low input resource
39 requirements and relative ease of cultivation and processing. Concerted efforts
40 are being made by the Nigerian Government to harness the vast economic,
41 nutritional, industrial and export potentials of cassava in order to ensure
42 cassava's contribution to national food security and boost rural livelihoods.

43 For cassava-based technologies like improved varieties, new agronomic
44 practices, soil management techniques, appropriate crop spacing, pest and
45 disease control measures to be adopted by cassava farmers, they need good
46 information sources which they can depend upon for knowledge and skill
47 acquisition. The communication environment of a farmer influences his or her
48 information acquisition and utilization of farm technologies. Some farmers use
49 limited information sources, while others lend themselves to being more
50 influenced by peculiar sources of information during different stages of
51 innovation adoption. In general, mass media sources are preferable for creating
52 awareness about technologies, group method of communication such on
53 demonstrations and field trips are good for teaching skills to farmers, while
54 interpersonal or individual method like farm and home visit could be used for
55 persuasion during adoption/acceptance stage. Adequate information is one of
56 the major prerequisites for widespread acceptance of agricultural innovations;
57 such information usually abound through a variety of sources. A knowledge of
58 farmers' choice of sources of information on improved farm practices should
59 be of concern to agricultural extension officers so that they can identify the set
60 of preferred information sources or communication channels for reaching their
61 clientele (Agbamu, 2006).

62 This study will seek to answer the following questions: what are the
63 preferred information sources which cassava farmers utilize in Delta State?
64 What is the extent of use of the various information sources? How did the
65 cassava farmers exhibit preference when the information sources are
66 differentiated by homophily and heterophily in communication network? The

specific objectives of this study are to: (1) describe the socio-economic characteristics of cassava farmers in Delta State; (2) identify the information sources that cassava farmers commonly use in dealing with cassava-based technologies; (3) distinguish between preferred homophilous and heterophilous sources of information among cassava farmers in Delta State.

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73 **Methodology**

74 Delta State has an estimated land area of 17,698sq.km and lies in the
75 south-south geopolitical zone of Nigeria. It has a population of 4,112,445 (Nat.
76 Population Commission, 2006). It has an Atlantic Ocean coastline of 160km.
77 the economy of Delta State is mainly based on agriculture, trading, crude oil
78 and gas exploration. It consists of twenty five Local Government Areas (LGSs)
79 which are classified into three agricultural zones. They are Delta North, Delta
80 Central and Delta South Zones. The predominant crops grown in Delta State
81 are cassava, yams, cocoyam, garden egg, fluted pumpkin, tomatoes, pepper,
82 *Ammaranthus spp.*, plantain, banana, orange, oil palm, pineapple and maize.

83 Five (5) Local Government Areas were randomly sampled from three
84 agricultural zones. Two (2) LGAs that were selected from Delta North Zone
85 are Aniocha North and Oshimili South. One (1) LGA that was selected by
86 simple random sampling technique from Delta South which is largely riverine
87 is Isoko South LGA. Two (2) LGAs that were selected by random sampling
88 from Delta Central Zone is Ughelli North and Ethiope East LGAs. Each Local
89 Government Area was demarcated into five sampling areas. Using simple
90 random sampling technique, one village each was selected from the 5 sampling
91 areas. This gave a sample size of 5 villages/towns per LGA or a total of 25
92 villages/towns. These villages/towns are similar in their socioeconomic setting
93 and have no differences in their farming systems. In each of the 25 villages or
94 towns, 5 farmers were selected by stratified random sampling to give 125
95 respondents. The stratified random sampling technique was used to ensure

96 coverage of each stratum of farmers consisting of young, elderly, small-scale
97 large-scale farmers, and members of Farmers' Cooperatives.

98 Data were collected through the use of questionnaire. Data were
99 obtained on farmers' gender, age, education level, farm size, income level, and
100 frequency of contact with agricultural extension workers. A Likert-type scale
101 was used to measure extent of use of information sources; never used, seldom,
102 often and very often were categories that were scored 0, 1, 2 and 3 points
103 respectively. In order to ascertain the homophily and heterophily
104 communication networks of the farmers, the respondents were asked to
105 indicate if the individuals in each information source used have similar
106 socioeconomic status as the respondents. If the information source is
107 heterophilous, the respondent indicated that he/she obtained information from
108 those who are higher in socioeconomic status or who are dissimilar from them
109 in certain attributes such as beliefs, education and income level.

110 Data were analysed through use of percentages, mean scores, rankings
111 and factor analysis. Factor analysis was used to determine preferred sources of
112 information on homophily and heterophily communication network basis
113 through factor loadings or eigen values that are 0.30 and above as applied by
114 Obinne and Oche (2000).

115

116 **Results and Discussion**

117 **1. *Socioeconomic Characteristics of the Farmers***

118 The cassava farmers in Delta State are predominantly women. The
119 average age of the respondents is 45.6 years. The farmers have an average farm
120 size of 2.5ha and average annual income of N466,559.5 per annum. It was
121 found that 44% of the farmers in this study have no formal education, while
122 8% of them have higher education. As can be seen in Table 1, while 48.8% of
123 the respondents seldom have contact with agricultural extension workers , only
124 9.6% of them often have such contact. This low level of contact between
125 agricultural extension workers and farmers found in this study is in consonance

126 with the finding of Agbam (2005). The disproportionate extension worker to
127 farm family ratio is a critical problem facing agricultural extension in Delta
128 State of Nigeria. There is insufficient number of agricultural extension workers
129 that provide advisory service to the large population of farmers.

130

131 Table 1: Distribution of socioeconomic characteristics of the cassava farmers

Characteristics		Frequency n = 125	%	Cumulative %	Mean
1.	Gender				
	Male	50	40.0	40.0	
	Female	75	60.0	100.0	
2.	Age Distribution (years)				
	21 – 30	6	4.8	4.8	
	31 – 40	40	32.0	36.8	
	41 – 50	56	44.8	81.6	
	51 – 60	19	15.2	96.8	
	61 – 70	4	3.0	100.0	45.6 years
3.	Educational Status				
	No Formal Education	55	44.0	44.0	
	Primary Education	36	28.8	72.8	
	Secondary Education	24	19.2	92.0	
	Higher Education	10	8.8	100.0	
4.	Farm Size (hectares)				
	0.10 – 1.99 (Small Scale)	62	49.6	49.6	
	2.00 – 3.99 (medium scale)	34	27.2	76.8	
	4.00 – 5.99 (large scale)	29	23.2	100.0	2.5ha
5.	Income per month (₦)				
	₦120,000 - 399,999	46	36.8	36.8	
	360,000 - 599,999	51	40.8	77.6	
	600,000 - 839,999	17	13.6	91.2	
	840,000 – 1,079,999	11	8.8	100.0	₦466,559.5
8	Contact with Extension Agents				
	Zero contact/year (No contact)	42	33.6	33.6	
	1 – 6 contacts/yr (Rarely)	61	48.8	82.4	
	7 – 12 contacts/yr (Often)	12	9.6	92.0	
	13 – 24 contacts/yr (Very often)	10	8.0	100.0	

132

133 2. Preferred Sources of Information

134 The results in Table 2 show that neighbour ($\bar{X} = 2.32$) is the most
135 preferred source of information by cassava farmers in Delta State. The cassava

farmers largely depend on their neighbours for getting information on cassava technologies. This finding is in agreement with that of Issa, Auta and Adedokun (2011) who found that neighbours/fellow farmers ranked 1st in use as information source among farmers in South-Western Nigeria. The high preference for neighbours could be attributed to the interpersonal communication and immediate feedback the cassava farmers enjoy.

Table 2: Extent of use of information sources by cassava farmers, n = 125

Information Sources	Extent of Use				Total Score	Mean Score	Rank
	Never Used (0)	Seldom Used (1)	Often Used (2)	Very Often (3)			
Neighbours	0(0)	20(20)	45(90)	60(180)	290	2.32	1 st
Opinion Leaders	5 (0)	5(52)	80(160)	35(105)	270	2.16	2 nd
Farmers' Coop. Society	15 (0)	10(10)	60(120)	40(120)	250	2.00	3 rd
Friends	0(0)	45(45)	45(90)	35(105)	240	1.92	4 th
Agric. Ext. Workers	20(0)	60(60)	20(40)	25(75)	175	1.40	5 th
Research Officers	20(0)	80(80)	5(10)	20(60)	150	1.20	6 th
Television	20(0)	80(80)	10(20)	15(45)	145	0.16	7 th
Radio	56(0)	30(30)	15(30)	20(60)	110	0.88	8 th
Extension Bulletins	4(12)	51(51)	10(20)	8(24)	95	0.76	9 th
Newspapers	3(9)	30(30)	10(20)	5(15)	65	0.52	10 th

Note: Values in parentheses are scores from Likert-type scale.

The use of opinion leaders ($\bar{X} = 2.16$), farmers' cooperative society ($\bar{X} = 2.00$) and friends ($\bar{X} = 1.92$) as information sources ranked 2nd, 3rd and 4th respectively. It was also found that agricultural extension workers ranked 5th in usage, while extension bulletins and newspapers ranked 9th and 10th respectively. The less preference shown for extension bulletin and newspaper could be due to the few cassava farmers that use them due to illiteracy and low education level associated with 72.8% of the farmers in this study. This study found there is a dwindling dependence on agricultural extension workers as a source of information. The relative low dependence on extension workers for

information by cassava farmers is not in agreement with the findings of Agbamu, Fujita, Idowu and Lawal (1996) and that of Floyd et al (1999) who reported that extension workers were the most dominant information sources for farmers. The low ranking of agricultural extension workers as information source in this study is however in agreement with work of Ofuoku and Ajieh (2005) who found that agricultural extension agents had a low mean score on extent of use and ranked 7th as a source of information.

163

164 3. *Homophily and Heterophily in Communication Networks*

165 Homophily is the degree to which pairs of individuals who interact are
166 similar in certain socioeconomic attributes such as beliefs, education, income,
167 social status and occupation or career. Generally communication is deemed to
168 be more effective when source of message and receiver are homophilous
169 (Rogers, 1983). Homophilous communication pattern cause new farming ideas
170 to spread horizontally within a social system. Therefore, homophily acts to
171 slow down the rate of diffusion of agricultural messages.

172 On the other hand, heterophilous network often connect two cliques,
173 spanning two sets of socially dissimilar individuals. Differences in technical
174 competence, education level, income, social status and beliefs among farmers
175 who interact contribute to heterophily. In most cases, new ideas enter a
176 farming community through higher status and more innovative members. A
177 high degree of heterophily means that the elite individuals interact mainly with
178 those from low social strata, and innovations trickle down vertically to non-
179 elites.

180 The results in table 3 show that homophilous and heterophilous
181 communication networks were the two factors that influence the scale of
182 preference associated with the utilization of information sources by cassava
183 farmers in Delta State. Factor loading of 0.30 and above was used in naming
184 the factors and stating the dominant information source used by farmers on the
185 basis of homophily and heterophily. Heterophilous factors that have high factor

loadings in this study are neighbours (0.830), friends (0.381), Farmers' Cooperative society (0.769) and television (0.776). The only homophilous factor that loaded high is opinion leaders (0.593). This study has shown that the cassava farmers prefer heterophilous sources of information. In other words, the farmers prefer to obtain farm information from individuals that have higher socioeconomic status than themselves; the farmers interacted with those individuals that were not similar with them in certain attributes.

In years past, farmers depended more on homophilous sources of information because of similarity in personal attributes which the farmers have with those sources (Vol. 1982, Obinne and Oche, 2000). This study found that nowadays cassava farmers in Delta State of Nigeria depend more on heterophilous information sources, from those in higher social strata. This may be due to a search for improvement in farming practices and the quest to boost cassava yield.

200

201 Table 3: Varimax rotated factor loadings for information

202 sources preferred by cassava farmers

Information sources/variables	Factor 1 Homophily	Factor 2 Heterophily
Neighbours	0.286	0.830
Friends	-0.958	0.371
Extension Cooperative Society	0.204	0.769
Extension workers	0.105	0.261
Opinion Leaders	0.593	0.158
Newspapers	0.221	0.030
Television	0.196	0.774
Radio	0.067	0.034
Extension Bulletin	0.183	0.029
Research Officers	0.215	0.206

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Conclusion and Recommendations

The cassava farmers in Delta State of Nigeria are predominantly women, with average age of 45.6 years, poorly educated, poor income earners, with average farm size of 2.5ha and seldom had contact with agricultural extension agents. This study revealed that the most preferred information sources by the cassava farmers in rank order are neighbours, opinion leaders and farmers' cooperative society.

The results of this study found that cassava farmers in Delta State preferred heterophilous sources of information, and would therefore use information sources that have higher socioeconomic status than themselves. The result of the factor analysis revealed that heterophilous factors had higher factor loadings for neighbours, farmers' cooperative society, friends and television. Unlike previous studies which showed that small scale farmers preferred to use homophilous information sources where individuals that interacted are similar in personal attributes, this study found that farmers depended more on heterophilous information sources. The neighbours that the farmers use as information source are those that do not belong to their socioeconomic status. In a similar manner, television information are passed on to a farmer in low social stratum by a farmer from a higher social stratum. It can also be concluded that the cassava farmers in Delta State prefer interpersonal information sources than mediated sources.

Given that the cassava farmers preferred heterophilous sources of information, it is recommended that agricultural extension agents and rural development workers should encourage farmers to communicate across social statuses and share agricultural knowledge rather than dwell more on homophilous communication network. It is also recommended that development workers promoting agricultural innovations should largely depend on neighbours, opinion leaders and farmers' cooperative society in reaching their clientele. This will ensure less rigour in driving agro-information flow, reduced cost of information delivery, ready acceptance and adoption of

agricultural innovations. Since heterophily factor dominated preferred source of information utilization by the cassava farmers in this study, development workers should work with different cadre of opinion leaders from different social strata throughout the social structure of a farming community. Such heterogeneity in approach in reaching out to an audience will help to spread information vertically in a social system and hasten the rate of innovation diffusion.

References

- Agbamu, J. U. (2005). Problems and Prospects of Agricultural Extension Service in Developing Countries. In: Adedoyin, S.F. (ed.), *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria Publication, Ilorin.
- Agbamu, J. U. (2006). *Essentials of Agricultural Communication in Nigeria*. Malthouse Press, Lagos, pp.43 – 73.
- Agbamu, J. U. and S. Esegbue (2007). Farmers' Perception of Improved and Local Cassava Cultivars in Isoko North Local Government Area of Delta State, Nigeria. *Global Approaches to Extension: A Journal of Agricultural Extension*, 2 (2): 1 – 8.
- Agbamu, J. U., Fujita, Y., Idowu, I and A. Lawal (1996). Effects of Socioeconomic Factors on Adoption of New Varieties of Maize and Cassava: A Case Study of Ogun State in Nigeria. *Journal of Agricultural Development Studies*, 6(2): 8 – 16.
- Floyd, C. N., Harding, A. H., Paddle, K. C., Rasal, D. P., Subedi, K. D. and P. Subedi (1999). The Adoption and Associated Impact of Technologies in the Western Hills of Nepal. *Agricultural Research and Extension Network Paper No. 90: 1 – 7*. Overseas Development Institute, London.
- Hahn, S. K., Terry, E. R., Leuschner, K., Akobundu, I. O., Okoli, C. O. and R. Lai (1979). Cassava Improvement in Africa. *Field Crops Research*, 2: 193 – 226.

- 265 Ironkwe, A. G. and J. C. Olojede (2012). Socioeconomic Factors Influencing
266 the Output of Cassava Farmers in Abia State, Nigeria. *Proceedings of the*
267 *26th Annual Conference of Farm Management Association of Nigeria*,
268 held at Michael Okpara University of Agriculture, Umudike, Nigeria, 15th
269 – 19th October, pp. 55 – 58.
- 270 Issa, F. O., Auta, S. J. and I. K. Adedokun (2011). Evaluation of Farmers’
271 Perception on the Effectiveness of Extension Delivery Channels used in
272 Communicating Improved Technologies to farmers in South Western
273 Zone of Nigeria. *Nigerian Journal of Agricultural Economics*, 2(1): 109
274 – 118.
- 275 National Population Commission (2006). *Report on Nigeria’s Census*.
276 National Population Commission, Abuja.
- 277 Obinne, C. P. and E. O. Oche (2000). Preferential Information Source
278 Utilization of small scale Farmers in the Central Zone of Benue State
279 Agricultural and Rural Development Authority. *Paper presented at the*
280 *6th Annual Conference of Agricultural Extension Society of Nigeria*, held
281 at University of Ibadan, Ibadan, 10th – 13th April.
- 282 Ofuoku, A. U. and P. C. Ajieh (2005). Sources of Information on Animal
283 Health Management among Poultry Farmers in Delta State, Nigeria
284 *Proceedings of the 10th Annual Conference of Animal Science*
285 *Association of Nigeria*, held at University of Ado Ekiti, Ado Ekiti, 12th –
286 15th Sept; pp. 322 – 324.
- 287 Rogers, E. M. (1983). *Diffusion of Innovations, Third Edition*. The Free Press,
288 New York, pp. 272 – 277.
- 289 Voh, J. P. (1982). A Study of Factors Associated with Adoption of
290 Recommended Farm Practices in Nigerian Villages. *Agricultural*
291 *Administration*, 9(1): 85 – 90.
- 292