

Communication as an effective tool in Agricultural Marketing Information System (AMIS) dissemination: Implications for the future

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Abstract: *The subject of this study is on the economic assessment of Communication as an effective tool in Agricultural Marketing Information System (AMIS) dissemination among the Farmers' Community Based-Organizations in the Middle belt region of Nigeria. The study employs discrete dependent variable models to estimate communication based output function of AMIS in the region using cross sectional data in a given production season. Empirical evidence from the analyses shows that most variables considered proved to have significant influence on pattern of AMIS dissemination. The result suggests that communication by way of AMIS dissemination respond to relationship with its determinants. Implicitly, the paper posits the privatization of extension facilities subject to the "participative" forces of demand and supply.*

Keywords: *Communication, private extension, Farmers' Organization*

Introduction

Farming is business and a source of livelihood especially for the rural resources-poor who have limited access to alternative options for self-sustenance. This is characteristic of the people of the Middle belt region of Nigeria which comprises six states, namely Benue, Kogi, Niger, Plateau, Nasarawa and Kwara States. The Middle belt region of Nigeria is located within the guinea savanna. Farmers in this area depend mainly on traditional technology for their agricultural production which is carried out mainly in small holdings in a mixed farming system of crops and livestock. They are growers of roots and tubers such as yams, cassava and sweet potato; and grains such as rice, millet and sorghum.

Farmers' capacity to control their environment for maximum income from their produce is the result of resources at their disposal including knowledge and skills. The application of these resources also depends on changes in the environment, marketplace, culture as well as the information, which flows into the farming society. Hence farmers communicate with multiple sources of information to shape and enrich their knowledge base (FAO, 1995) and make marketing decisions from production through storage to sales.

Definitions of communication are many and varied depending on one's intention and orientation. Communication was originally conceptualized as a simple linear or one-way transmission of messages from a source to receiver through a channel with the intention of producing some effect (Rogers, 1983). According to Yahaya (2003), this definition perceives communication as more of an awareness creation about a product, or a point of view or neither course of action with less consideration for the social process of communication nor the influence of communication on the behaviors of the target audience. Ineji (2003) defines communication as the process by which individuals and groups share information, ideas, and attitudes. This definition emphasizes that communication is a process. The element of sharing implies that the source and receiver are actively working together for common understanding and convergence of meaning. Obinne's definition of communication as a continuous, never-ending means of transferring messages (ideas, innovation, skills, knowledge or practice) from source to the ultimate users in order to modify the behavior or reaction of the receiver in the desired direction, implies that communication is a social process because it involves connection between persons with the purpose of passing on information or a message (Obinne, 1992).

Rather than introducing radical changes in agricultural marketing information system and methodologies to improve communication, the intrinsic effect of the basic communication on agricultural production conditions government to evolve capacity that would stimulate economic activity in productive sector to sustain the system. Therefore, the various ways in which communication determinants affect AMIS and agricultural production in the Middle belt region of Nigeria, easily lends itself for investigation. The knowledge to be gained could be employed to enhance the effectiveness of current and future extension programs locally and nationally.

Methodology

The study area was Benue State in the Middle belt region of Nigeria. The sampling frame consisted of farmer-members of Community-Based Organizations (CBOs) who are formally registered with the State Government. One hundred and seventy-three (173) farmer-members of CBOs, consisting of 124 farmers from three local government councils and 49 farmer-participants of the Olam agricultural out-growers scheme - a private agri-business organization with its own extension service – constituted the sample population. Data were collected using structured questionnaire which were administered to the selected farmers.

The quality of the data could probably have suffered from (a) inaccuracy of memory estimates and (b) implicit bias of respondents to attract attention based on the information provided. Effort to improve reliability, consistency and completeness of the data led to the considerable reduction of the number of cases actually used for analysis.

A basic probit model was employed in order to ascertain the relationship between selected socio-economic characteristics of farmers and the usefulness of their sources of agricultural marketing information. The model was explicitly specified as follows:

$$Y = \alpha + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5 + \beta X_6 + \beta X_7 + \beta X_8 + \beta X_9 + U$$

where

Y	Source of useful information
α	Constant term
X_1	Level of education
X_2	Income
X_3	Information sought
X_4	Limitation to information
X_5	Household size
X_6	No. of cities
X_7	Location
X_8	Sex
X_9	Age
U	Error term

Results and Discussion

Several communication models have been developed, which help to conceptualize and understand the phenomena related to both mass and interpersonal communications. Each of the models has strong as well as weak points and can best be applied to specific communication situations. Gogoi (1990) developed a communication model, which was modified from Lazarsfeld's two-step flow model, in combination with some concepts from the diffusion researches of farm information. Obinne's modification of S-M-C-R basic communication model by introduction of the 'noise' element from Shannon and Weaver's Mathematical model creates a truer picture of communication in reality (Obinne, 1992). It is in view of these models that a model of the Agricultural Marketing Information flow in a typical market in the Middle belt region of Nigeria is developed (Fig 1).

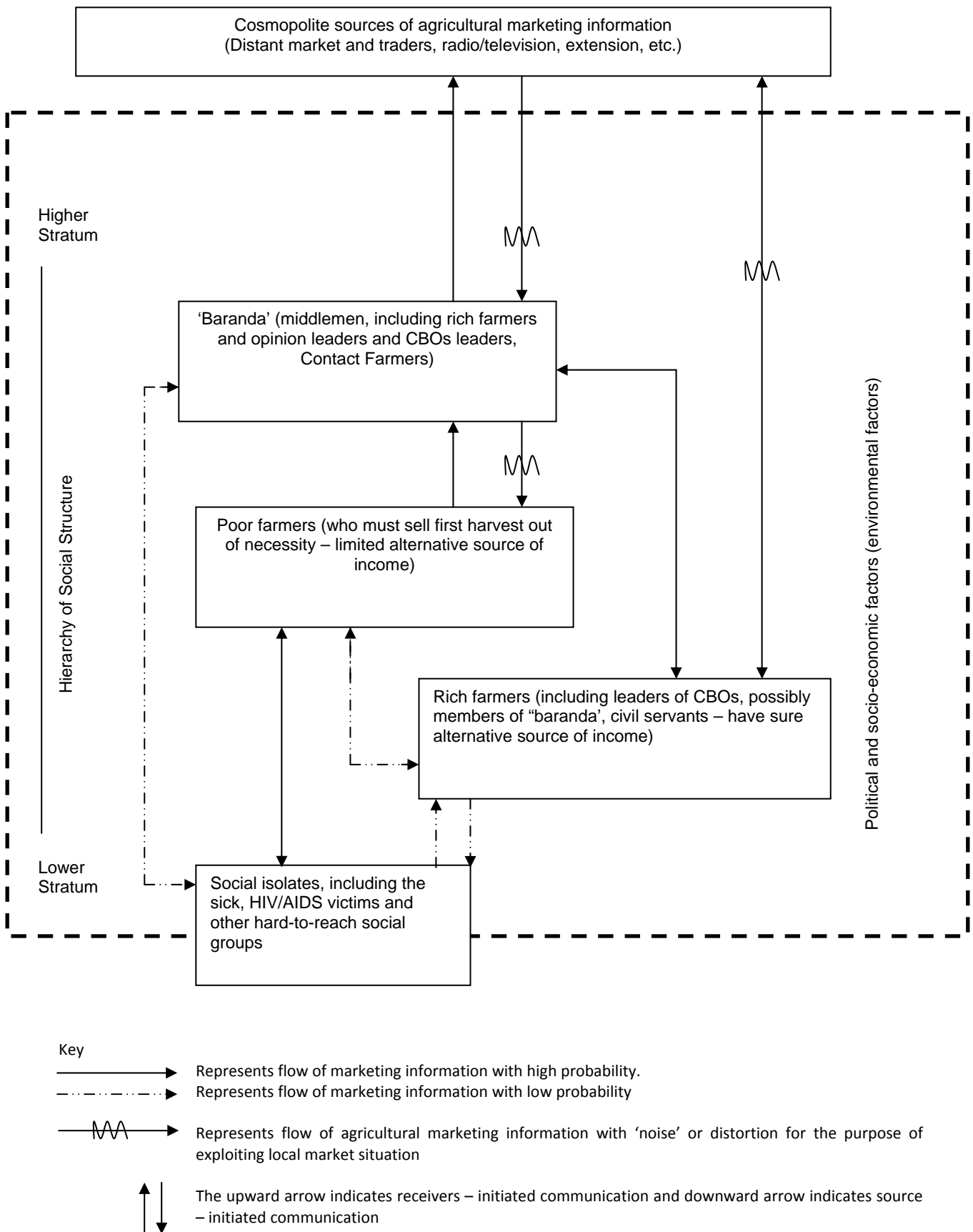


Figure 1. A model of agricultural marketing Information flow in a typical market system in the Middle belt region of Nigeria.

The concept of homophily and heterophily best explains the directions of information flow as indicated by the arrows in Fig 1. Homophily as defined by Rogers and Bhowmick (in Gogoi, 1990)

refers to the degree to which pairs of individuals who interact are similar with respect to certain attributes such as beliefs, age, education, social status, etc. Heterophily is the degree to which pairs of individuals who interact are different with respect to certain attributes. In other words, the degree of similarity between the source-receiver pairs in a communication situation, on certain characteristics, is called homophily. Heterophily is the direct opposite of homophily.

The flow of information among the different social groups in the agricultural marketing information model shows that communication is easier among people in the same social category. However, information seeking tends to be more from people of lower social category to those belonging to the higher social category. Rogers and Shoemaker (in Obinne, 1992) stated that social relations were much closer between individuals who resemble each other in occupation and education.

According to Obinne (1992), one major problem in communication is that the source is usually quite heterophilous to the receiver. Some degree of heterophily is necessary as the source is expected to be more knowledgeable than the receiver. Some studies have shown that heterophilous communication leads to message distortion – a form of ineffective communication. Generally, receivers such as small farmers often seek sources that are slightly technically more competent and more exposed to information than them. However, when it comes to agricultural marketing information sharing, most individuals would prefer interacting with persons who are very similar in outlook.

Although both poor and rich farmers have access to marketing information through the mass media, majority of poor farmers cannot access the markets where this information may be utilized, except they are registered with the market authority. Hence information from cosmopolite sources such as radio may not be of use to the resource poor farmer as such information is thwarted or hijacked by the middlemen.

Farmers' market intelligence

Table 1 revealed that most farmers dispose of their crops in their raw state, they lack knowledge of prices of their produce in other big cities and are hardly aware of the destination of their clients. Table 2 reveals that farmers may be exposed to communication technology but are hardly aware of their use in marketing. Alluding to FAO (1995), many small scale farmers have difficulty in obtaining information and lack the awareness to connect technology with agribusiness. A perusal of Table 3 reveals that the preference of friends, family and neighbors as popular sources of agricultural marketing information cuts across the social profile especially for farmers from the local government areas, while extension agents and farmers' meetings are preferred by the Olam farmers. In an IT survey carried out by Shanmugavelan (2000), to determine the existing communication channels and habits among rural villages in India, it was discovered that the predominant sources of information are the local (petty) shopkeeper, the market place, and the (agri) input supplier. They also found that a very considerable amount of information transaction takes place between the rural poor households, which also acts as a primary source of information. In other words, the information channels start and terminate within the immediate locality. This implies that the sources of agricultural marketing information available to farmers in Benue State are the primary sources, and this is more so for the vulnerable groups, which includes the women, the young and the aged who depend mainly on family, friends and neighbors for agricultural marketing information.

Table 1. Percentage distribution of respondents according to the form in which produce is sold and general market knowledge.

	Frequency	Percentage
Form of Produce		
Raw	116	67.1
Processed	9	5.2
Both Raw and Processed	48	27.7
Total	173	100.0
Knowledge of price of produce in big cities		
No Response	12	6.9
Yes	28	16.2
No	133	76.9
Total	173	100.0
Variable		
No Response	11	6.4
Yes	147	85.0
No	15	8.7
Total	173	100.0
Knowledge of customers' destination		
No Response	10	5.8
Yes	78	45.1
No	85	49.1
Total	173	100.0

(Source: Field Survey, 2008)

Table 2. Percentage distribution of respondents according to their cosmopolitaness.

Variable	Frequency	Percentage
Purpose of visit to big cities		
Never	31	17.9
Business	37	21.4
Work	5	2.9
Social Visit	38	22.0
Social and Business	62	35.8
Total	173	100.0
Knowledge of the internet		
Yes	78	45.1
No	95	54.9
Total	173	100.0
Use of the internet		
Never used	163	94.2
Used	10	5.8
Total	173	100.0
Ownership of cell phone		
Yes	72	41.6
No	101	58.4
Total	173	100.0
Use of cell phone for agricultural marketing information		
Always	29	16.8
Sometimes	48	27.7
Never	96	55.5
Total	173	100.0

(Source: Field Survey, 2008)

Table 3. The access of marketing information sources available to respondents.

Socio-economic Characteristics	Sources of Agricultural Marketing Information							Total
	Family, Friends, Neighbours	Distant Clients	Media	Farmer Organization meeting	'Baranda'	Church/Mosque	Family, Friends & Extension	
Farmer Groups								
Ukum	23	10	0	0	0	0	8	41
Gboko	15	6	3	1	8	3	5	41
Otukpo	22	13	3	0	1	0	3	42
Olam	0	3	0	14	11	0	21	49
Sex								
Male	26	17	6	9	11	1	24	94
Female	34	15	0	6	6	2	13	79
Annual Income in Naira								
</=10,000.00	10	5	4	0	0	2	0	21
</=20,000.00	23	4	2	0	1	1	0	31
</=30,000.00	26	5	0	5	11	0	0	47
</=40,000.00	1	18	0	8	7	0	17	51
>/=50,000.00	0	0	0	2	0	0	20	22

(Multiple responses recorded; Source: Field Survey, 2008)

Table 4. Binomial probit estimation results showing the relationship between source of useful agricultural market information and the socio-economic characteristics of the respondents.

Variable	Estimated Parameters	Standard Error	t-ratio
Constant	-1.121	0.338	-3.32*
Level of education	0.019	0.011	1.71*
Income	0.399	0.139	2.87*
Information sought	-0.018	0.029	-0.63
Limitation to information	0.004	0.02	0.20
Household size	0.1298	0.043	2.99*
Number of cities visited	0.136	0.055	2.45*
Location	0.3185	0.038	8.37*
Sex	-0.408	0.091	-4.47*
Age	-0.029	0.044	-0.67
Log likelihood	-619.399		
Akaike	7.276292722		
Hannan-Quinn	7.350239041		
Schwarz	7.458563913		

(t-ratio is significant at 5% level; Source: Field Survey, 2008)

FAO (1995) attributes the poor performance of the agricultural sector in developing countries partly to poor market intelligence of farmers especially those with small holdings. Hence farmers shy away from large scale processing that would require high technical skill, except for those that require indigenous technology, because it is hard for them to know where to turn for technical assistance and advice. Farmers' poor knowledge of prices in other big cities, and the destination of their clients, is further proof of their poor access to information and the market. Umeh (2000), pointed out the lack of standardization of measures in the agricultural market as one of the major contributors to the poor performance of the Nigerian agricultural market functions, and this could contribute to the lack of knowledge of the farmers on the prices of their commodities in other distant markets since these measures vary from one market to another.

The result in Table 4 implies that at 5% level of significance, education, income, household size, number of cities visited in search of useful agricultural marketing information and location all have positive and significant influence on useful sources of agricultural marketing information, indicating a direct relationship with useful sources of agricultural marketing information, while sex has negative and significant influence on useful sources of agricultural marketing information, indicating an inverse relationship with useful sources of agricultural marketing information among the respondents.

The result is explained from the point of view of low capacity utilization of the farmers over time arising from low functionality and utility of available communication through AMIS. Theoretically, communication has been identified to precede development. Consequently, communication facilities must be available in sufficient quantity and quality to ensure effective development process. Implicitly, large and geographically dispersed economies as it obtains in the Middle belt zone of Nigeria in particular and Nigeria in general, require careful programming of social overhead capital so that scarce resources do not become locked up in unproductive infrastructure service.

Conclusion

The empirical results generally support the fact that communication by way of AMIS is positively related to increased agricultural production of farmers. This holds true for the categories of farmers considered. The preference of Extension and Farmers' Organization meeting as source of marketing information for participating farmers of Olam out-growers scheme is an indication of the potentials of private extension service. Explicitly, the result so indicates that although communication plays a crucial role in stimulating agricultural production, the presence of complementary variables like efficient and functional Farmers' Organizations to enhance farmers' market access is crucial. The result also indicates that Government public extension service must be responsive to the agricultural marketing information needs of their farmers to remain relevant. There is every reason to believe that whenever these facilities are provided possibly through the joint efforts of the public and private sectors, and are functional and efficiently utilized, *ceteris paribus*, there would be improvement in the efficiency of our farmers and productivity would be enhanced and hence improvement on the whole Nigerian economy.

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