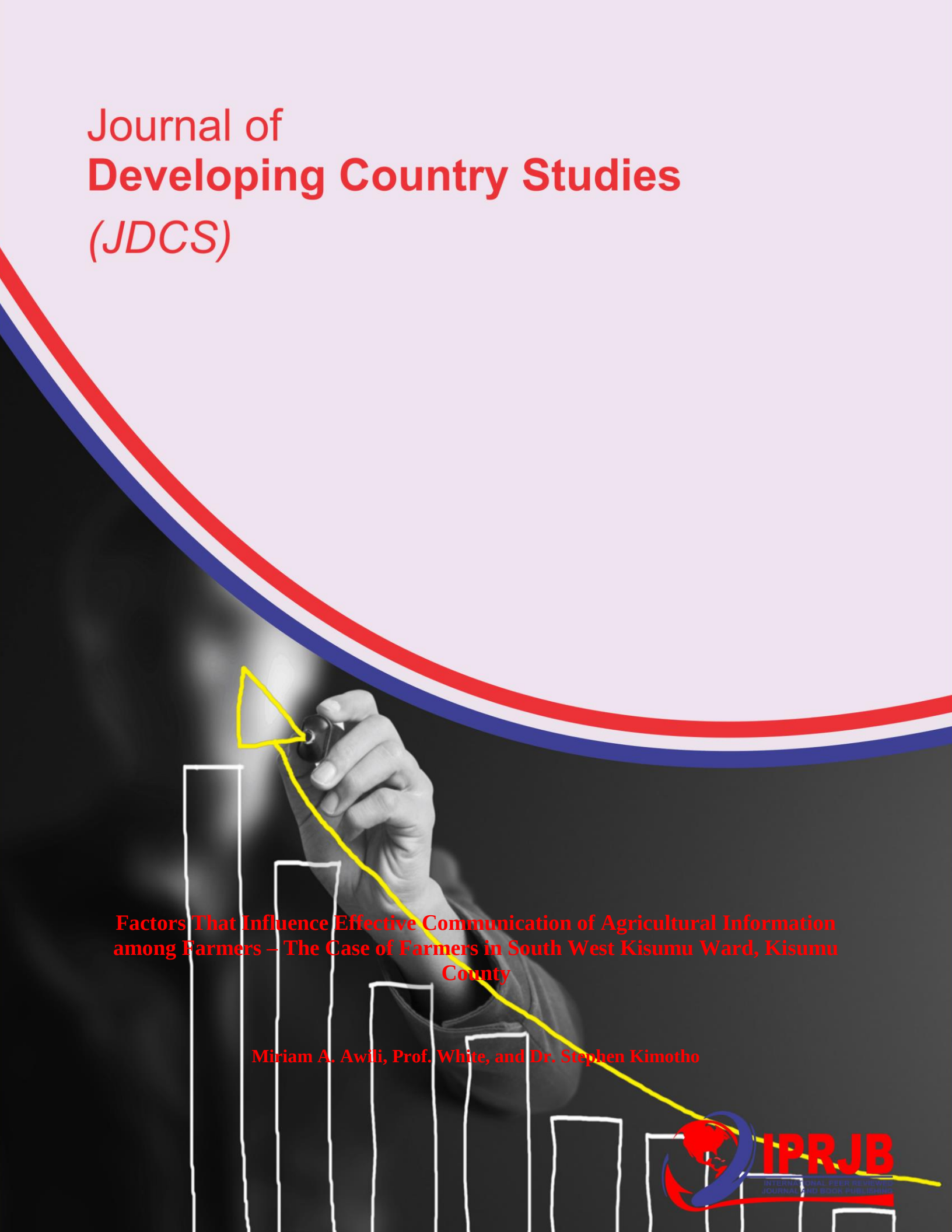
Journal of
Developing Country Studies
(JDCS)



Factors That Influence Effective Communication of Agricultural Information among Farmers – The Case of Farmers in South West Kisumu Ward, Kisumu County

Miriam A. Awili, Prof. White, and Dr. Stephen Kimotho

IPRJB
INTERNATIONAL PEER REVIEWED JOURNAL AND BOOK PUBLISHING

Journal of Developing Country Studies
ISSN xxxx-xxxx (Paper) ISSN xxxx-xxxx (Online)
Vol.1, Issue 1 No.1, pp 1-20, 2016

www.iprjb.org

Factors That Influence Effective Communication of Agricultural Information among Farmers – The Case of Farmers in South West Kisumu Ward, Kisumu County

[1*] Miriam A. Awili
[1]Post graduate Student, School of Communication, Language & Performing Arts
Daystar University
***Corresponding Author's Email: miriamokeyo@yahoo.com**

[2] Prof. White
Lecturer, School of Communication, Language & Performing Arts
Daystar University

[3] Dr. Stephen Kimotho
Lecturer, School of Communication, Language & Performing Arts
Daystar University

Abstract

Purpose: The purpose of study was to establish factors influencing effective communication of agricultural information among farmers in South West Kisumu Ward, Kisumu County.

Methodology: The study utilized a descriptive survey research design. The target population comprised of 3054 households that practice agriculture in South West Kisumu Ward (KNBS, 2013). The study used Fostgate (2012) formula to calculate the sample size. The sample size was 72 respondents. This study used stratified random sampling. The sample was distributed equally among the three (3) strata of sub-locations (namely Ojolla, Osiri and Kanyawegi). Further, the study adopted purposive sampling with the help of the sub-chiefs to identify the farmers who could be having relevant information. The study used a questionnaire and a key informant interview guide to obtain primary data. The questionnaires were self administered. The researcher also booked appointment with four (4) key informants (one from each village and an agricultural extension officer). To check the validity and reliability of the questionnaires in gathering the data required for purposes of the study, a pilot study was carried out. Data analysis included descriptive and inferential statistics.

Results: Result findings showed that there is a positive and significant relationship between choice of media, socio demographic characteristics and effective communication of agricultural information as supported by beta coefficients of 0.286 and 0.750 respectively. Further, results also showed that there is a negative and significant relationship between language barrier, farmers' attitude and effective communication of agricultural information as supported by beta coefficients of -0.036 and -0.069 respectively

Unique contribution to theory, practice and policy: The study recommended that the Ministry of Agriculture, through the relevant contact persons at the community level, should build the capacity of village leaders. This is to enable them effectively disseminate agricultural information without bias. Agricultural agencies working in the study area should empower the women groups with agricultural information, given that there are more female farmers than male.

Keywords: *choice of media, socio demographic characteristics, effective communication, attitude*

1.0 INTRODUCTION

Information is an important tool used in the realization of any objective or goal set by individuals. It remains the lifeblood of any individual or organization. It is a valuable resource required in any society; thus acquiring and using information are critical and important activities. Users of information use it for different reasons. Some use it for health, others for advancement in knowledge, while others for politics. To all these people, information seeking is a fundamental human process closely related to learning and problem solving. Many factors initiate the search for information. Among these are individual tasks for knowledge advancement, creativity and for future documentation. Information seeking process depends on these tasks, and the complexity of the task difficulty is an important factor that influences an individual in seeking information (Goldfrab, 2006).

Agricultural information is essential for improving agricultural production. Specifically, agricultural productivity can arguably be improved by relevant, reliable and useful information and knowledge. Agricultural information interacts with and influences agricultural productivity in a variety of ways. It can help inform decisions regarding land, labour, livestock, capital and management. Agricultural productivity can arguably be improved by relevant, reliable and useful information and knowledge. Hence, the creation of agricultural information (by extension services, research, education programmes and others) is now often managed by agricultural organisations that create information systems to disseminate information to farmers so that farmers can make better decisions in order to take advantage of market opportunities and manage continuous changes in their production systems (Demiryurek, Erdem, Ceyhan, Atasever & Uysal, 2008).

Agricultural information covers all published and unpublished knowledge on general aspects of agriculture and consists of innovations, ideas and technologies of agricultural policies (Aina, 2009). According to Ozowa (2005), agricultural information provides the data used for decision making. Agricultural information is needed for overall development of agriculture for the improvement of living standard of farmers. The objectives of agricultural information can hardly be realized if farmers have no access to information (Olawoye, 2006).

Agricultural information creates awareness among farmers about agricultural technologies for adoption. Agbamu (2006) opined that information is the first and indispensable step of an adoption process. Adefuye and Adedoyin (2003) suggested that for a steady flow of accurate understandable and actual agricultural progress, farmers must know, and act in accordance to agricultural information. Therefore, how far people progress in whatever they are doing in agriculture depends largely upon the availability and access to accurate and reliable information. Today, in the age of information and technology, the dissemination of information becomes much easier and more complex. This is because information messages must be disseminated to the farmers in ways and methods, which are appropriate, and best support its recipient (Cartmell et al., 2004).

1.2 Problem Statement

Farmers' lack of information is a paradox that continues to debilitate the efforts to improve information agriculture in most of African countries (Lwoga et al , 2011). For instance, in Kenya the prevailing agricultural situation is characterized by low levels of productivity indicating that the mechanisms of communicating agricultural information have not achieved the desired goal. The current agricultural scenario points to the fact that the information given to the rural farmer is still insufficient (Odini, 2014, Kimaro et al, 2010).

It is evident that despite having a large body of knowledge that exists in research institutions, universities, public offices and libraries, it is only a small amount of agricultural information which is eventually accessible by rural farmers. This creates a concern as to whether the mechanisms used to disseminate the same are effective and or the disseminated information tallies with the actual needs of the farmers. Information and knowledge are therefore key components of an improved agricultural sector (Ibid, 2011).

Past studies have focused on different topics related to communication of agricultural information among farmers. For instance, Nge'no (2013) analyzed the existing agricultural information systems on post harvest management of cereal crops among smallholder farmers in South Rift, Kenya. Results revealed that extension agents, mass media and public research institutions and universities were the sources of agricultural information. Bello and Obinne (2012) sought to discuss the process of communication in the Nasarawa State of Nigeria, including the various communication channels and the role of the extension service. It was observed that one major constraint in information dissemination was the limited number of trained extension workers. Oladele (2006) examined the effect of the multilingual farm broadcast on the access to agricultural information in Nigeria. The diversity of the languages in Nigeria presupposed that for farmers to have access to agricultural information through the radio and television, the language of presentation has to be based on that of the listeners. Muinde (2009) sought to investigate factors affecting the adoption of ICT for research communication among researchers in research institutions in Kenya. The findings revealed that socio-cultural, infrastructural, motivational and personal/institutional initiatives barriers to open access and called for clear institutional and policy frameworks to guide the implementation of open access communication initiatives. With reference to past studies on communication of agricultural information among farmers, no study has focused on factors that influence effective communication of agricultural information among farmers. This study sought to fill in this gap.

1.3 Research Objectives

i) To establish the influence of choice of media on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County.

ii) To determine the influence of language barrier on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County.

iii) To examine the influence of farmers' attitudes on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County.

iv) To assess the influence of farmers' socio demographics characteristics on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

Agricultural Extension Theory

There are four major models in agricultural extension: linear "top-down" transfer of technology/information; participatory "bottom-up" approaches; one-to-one advice or information exchange; and formal or structured education and training (Black, 2010). Despite criticisms of linear technology transfer models, there is still a need for access to reliable scientific information, just as there is a need to provide for active participation by farmers in research and development processes. One-to-one exchange of information and advice, whether from farmer to farmer or from professional adviser to farmer (and vice versa), will continue to be important. So too will be the lifting of levels of formal education and training among farmers. New information technologies will facilitate some forms of education, training and information exchange, but will need to be supplemented by other extension strategies. For a technology to be adopted, it must be in line with the knowledge that the farmer has as well as putting in mind their cultural norms, beliefs and values as a community. For agricultural information technologies to work well, they must be integrated with what the community uses. There is therefore a need to understand farmer's knowledge, attitudes and perceptions towards management of diseases (Mokotjo & Kalusopa, 2010).

This theory is relevant to this study since it is important to transfer knowledge to the community through a linear "top-down" transfer of information in order to understand what the community perceives of the knowledge through a participatory "bottom-up" approach where farmers give the informed information. In addition, having a one-to-one advice or information exchange enables an integration of knowledge and perceptions as perceived by the community and not as seen by the researcher. For instance, agricultural extension programmes staff provides formal or structured education and training to farmers. As farmers also exchange information on a one -on-one, it is easier to improve on productivity as perceptions and attitudes are shared and best adopted if learnt from fellow farmer. This theory informs the study that it is important to understand farmers' knowledge, perceptions and attitudes as these results to better reception of agricultural information and as a results increasing on the yields (Black, 2010).

Participatory Rural Communication Appraisal

Participatory Rural Communication Appraisal (PRCA) is a strategy designed to involve rural people in the identification of the essential elements for the design of effective communication approaches and programs for development (Narayanasamy, 2009). PRCA facilitates dialogue among the rural people themselves and development workers in order for all parties to reach mutual understanding and plan for action, and it is used to promote the involvement of rural people in decision-making that affect their livelihood (Anandajayasekeram, Puskur & Zerfu, 2009). The PRCA model was developed to guarantee that development communication programs are in touch with the realities of the rural community being targeted (Narayanasamy, 2009). PRCA is a combination of other participatory research methods such as Rapid Rural Appraisal (RRA); Participatory Action Research (PAR), Participatory Learning and Action (PLA) as well as more traditional communication approaches.

Anyaegbunam, Mefalopulos and Moetsabi (2004) contend that PRCA is a flexible tool that can be used to define the needs and priorities necessary to commence a development project and

correct those that have gone astray. It has effectively been implemented in rural development projects in Africa through Action Program workshops that aim to train middle-management staff in its methods. Examples of the countries that have applied this participatory communication model with successful projects include Senegal, Burkina Faso, Rwanda and Tanzania (White, 2008).

In the agricultural sector, increased productivity/ profitability is dependent on the ability to improve relationships between the farmers, buyers, extension officers and the government. This theory is relevant to this study in that dialogic information exchange between the different players will ensure that the innate wisdom and knowledge of the rural farmers is effectively incorporated in modern agricultural initiatives. This is because rural people's knowledge and modern scientific knowledge are complementary in their strengths and weaknesses, and if combined may achieve what neither would alone (Mtega, 2012).

2.2 Empirical Review

Rehman, Muhammad, Ashraf, Mahmood, Ruby, and Bibi (2013) identified various agricultural information sources of farmers, their access to agricultural information and its association with the socio- economic characteristics. A proportionate sample of 361 respondents was selected at random from the subscribers of three selected agricultural magazines. The data were collected with the help of a pre- tested and validated questionnaire and were analyzed by using computer software Statistical Package for Social Sciences (SPSS). Descriptive statistics such as simple frequency, percentage, mean, and standard deviation were used. On the basis of weighted score the rank order was determined. Also, bivariate analysis was used to test the level of association between the selected variables. The results showed that the print media and fellow farmers were the major information sources of farmers. The results further revealed that education and size of land holding had highly significant positive relationship with access to agricultural information while age and farming experience had non-significant relationship. The results of the study thus revealed that there is a dire need for the effective implementation of policies on adequate and easy accessibility of agricultural information to the farmers to enhance the agricultural production.

Nge'no (2013) analyzed the existing Agricultural information systems on post harvest management of cereal crops among smallholder farmers in South Rift, Kenya. The objectives of the study were to 1) Document information sources, requirements and accessibility on post harvest management of cereal crops among smallholder farmers. 2) Establish the role of service providers in Agriculture in enhancing smallholder farmers' access effective agricultural information on post harvest management of cereal crops. 3) Find out socio demographic characteristics of smallholder farmers which influence agricultural information on post harvest management of cereal crops. A descriptive research design was used for the study. A multi-stage sampling and simple random sampling methods were used to randomly select a total of 140 smallholder cereal farmers for the survey. Five Agricultural information service providers were purposively selected. The study used open and close ended questionnaires, semi-structured interviews and direct observations to collect primary data. Descriptive statistics were used to establish associations between agricultural information systems and selected socio-economic variables. The study yielded 136 respondents representing 97 % response rate. Results revealed that 61% of smallholder farmers reported extension agents as source of agricultural information,

48% from mass media and 1 % from public research institutions and Universities thus showing lack of information support from the institutional sources for agricultural production. The results further showed that 15.4 % of smallholder farmers have no access to agricultural information on Post harvest management, 61 % access agricultural information once/year which is inadequate for effective agricultural information dissemination since there are two cropping seasons per year. The main problems cited were low agricultural incomes and limited agricultural experience. The study recommended retraining of extension agents on new post harvest management technologies in ever changing ICT environment and closer cooperation between different actors on common post harvest activities.

Tenzer, Pudelko and Harzing (2013) investigated how language barriers influence trust formation in multinational teams (MNTs). Based on 90 interviews with team members, team leaders, and senior managers in 15 MNTs in three German automotive corporations, the study revealed how MNT members' cognitive and emotional reactions to language barriers influence their perceived trustworthiness and intention to trust, which in turn affect trust formation.

Oladele (2006) examined the effect of the multilingual farm broadcast on the access to agricultural information in Nigeria. Farm broadcast programmes on radio and television were compiled and the language of presentation examined for each of the programme. The diversity of the languages in Nigeria presupposes that for farmers to have access to agricultural information through the radio and television, the language of presentation has to be based on that of the listeners. The study recommended that information sources to farmers should explore multilingual sources to ensure farmers' access to agricultural information.

Raghuprasad, Devaraja and Gopala (2012) conducted a study in Karnataka state during the year 2011. The study sought to assess the attitude of farmers towards utilization of ICT tools in farm communication and to find out the relationship with socio-economic characteristics of farmers using these tools. Bangalore rural, Chikkaballapura and Kolar districts of Karnataka state were selected purposefully because of the proximity to the hub of IT i.e Bangalore. Most of the farmers of these districts were having access to different ICT tools and using both old and new ones. Among 120 farmers selected for the study, more than two-fifth (40.83%) of the farmers had favorable attitude towards ICT tools followed by 31.67 per cent had least favorable and 27.50 per cent had most favorable attitude. Variables such as education, land holding, annual income, economic motivation, risk orientation, scientific orientation and extension participation had positive and significant relationship with attitude of farmers towards ICT tools. The study thus recommended that farmers should be taught how to use these ICT tools for their wellbeing through proper educational activities.

Nabuzale (2014) sought to explore the farmer's knowledge, attitudes and perceptions of tospovirus infection, examining the effect of tospoviruses on farmers' livelihoods and the management practices used in controlling tospoviruses in tomatoes in Sironko district. A cross sectional research design was used to collect both qualitative and quantitative data through use of questionnaires, focus group discussions, Key informant interviews and field visit observations. The researcher administered 360 questionnaires and interviewed 20 respondents who were purposively selected using a key informant interview guide. Further, the researcher conducted 3 focus group discussions in the 3 sub counties and observations from nearby farmers' gardens were done by the farmers and the research. The study findings revealed that farmers producing tomatoes in Sironko district are not knowledgeable about tospoviruses in tomatoes. Tospoviruses

have an effect on the livelihoods of the farmers in terms of natural, physical, human, financial and social capital stocks. The farmers reported that tospoviruses affect all the capital stocks either directly or indirectly through the financial stock reductions and the spread of the disease to other crops. Financially, quality and yields produced negatively affected market prices. In line with management practises, farmers always use chemicals like dithane to control diseases irrespective of the disease type. Unlike other diseases, it is important to control vectors that spread tospoviruses than the disease itself. In conclusion, it is important to improve on the knowledge, attitude and perception of the farmers through training like on farm trainings. Effects of tospoviruses on livelihood assets can be improved through organizing the farmers into marketing groups to have a stronger voice that can fetch them better prices for their produce. The management practices can be improved by sensitizing and training farmers on disease identification and use of the recommended sprays for tospoviruses. Tomato farmers need to know the importance of weeding since weeds are hosts for the thrips that spread the tospoviruses.

Apata and Ogunrewo (2010) examined development and information need of the resource poor and the strategy adopted to meet these needs, using "town crier" as a case study. The study identified 2 states in southwest, Nigeria, based on literature/past studies, where this concept has been adopted. A focused group discussion technique and interview schedule was adopted for data collection. The study identified 141 "town criers" across the study areas through the help of key informants. Results shown all Town Criers are male, average age of 55.54 years and all have post-secondary education. Town Crier primarily source of information is from the traditional head. Main information disseminated by the Town Crier bothers on security of the town and community development and projects. The study concluded that this channel rarely meets the information need of the people, as the study revealed that only 20% of such information meets these needs. Past studies have documented that information/communication channels in Nigeria such as extension institution has collapse, there is no effective communication channels in the country again. The small number of extension officers that exists, only congregate at the urban towns, leaving behind those at the rural areas. Thus, the use of town criers in this regards can be used effectively to fill this gap and can also be trained on basic extension work.

2.3 Conceptual Framework

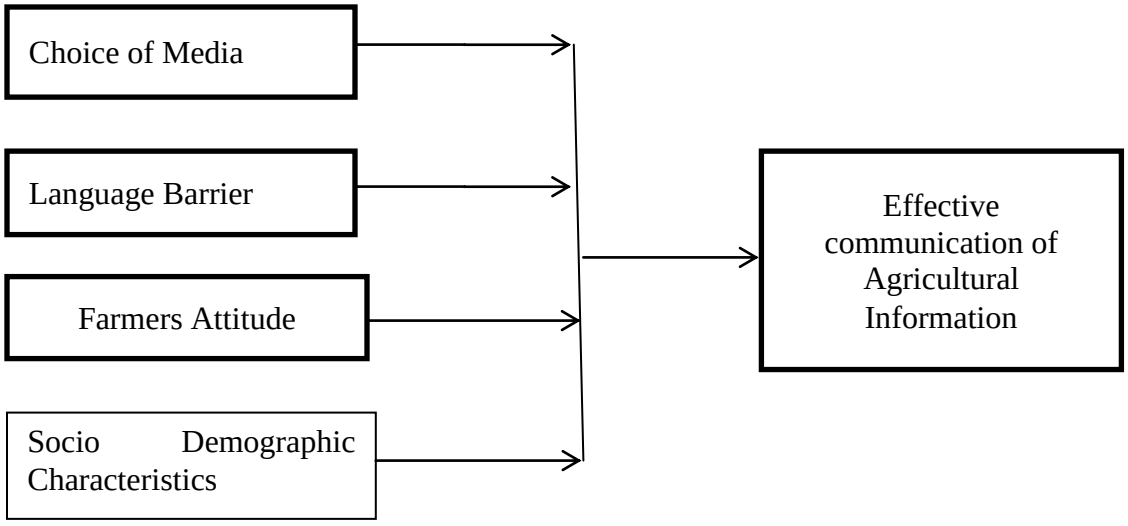


Figure 1: Conceptual framework

3.0 RESEARCH METHODOLOGY

The study utilized a descriptive survey research design. The target population comprised of 3054 households that practice agriculture in South West Kisumu Ward (KNBS, 2013). The sample size was 93 respondents. This study used stratified random sampling. The questionnaires were self administered. In this study, the data collection instrument, which is a questionnaire, was tested on 10% of the sample of the questionnaires to ensure that it is relevant and effective. It was pilot tested on 9 respondents (farmers) from South West Kisumu Ward who did not participate in the main data collection process. For construct validity, the questionnaire was divided into several sections to ensure that each section assesses information for a specific objective, and also ensure that the same closely ties to the conceptual framework for this study. To ensure content validity, the questionnaire was subjected to thorough examination by two independent resource persons, who were randomly selected among the agricultural extension officers in the location. After quantitative data is obtained through questionnaires, it was prepared in readiness for analysis to generate both descriptive statistics and inferential statistics. A linear multiple regression model was used to measure the relationship between the independent variables and the dependent variable which are explained in the model.

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Effective Communication of Agricultural Information

X_1 = Choice of Media

X_2 = Language Barrier

X_3= Farmers Attitude

X_4= Socio Demographic Characteristics

ε = Error term

4.0 RESULTS AND DISCUSSIONS

4.1 Response Rate

The number of questionnaires that were administered was 89. A total of 65 questionnaires were properly filled and returned. This represented an overall successful response rate of 73.03 % as shown in Table 1.

Table 1: Response Rate

Response	Frequency	Percent
Returned	65	73.03%
Unreturned	24	26.97%
Total	89	100%

4.2 Demographic Characteristics

4.2.1 Gender of the Respondents

The respondents were asked to indicate their gender. The majority of the respondents were female who made up 56.9% of the sample while 43.1% were male. The results imply that majority of the farmers in South West Kisumu Ward were female. This can be explained by the fact most males who are heads of the family are fishermen, given that the study area is close to Lake Victoria and thus were not present during the time of data collection.

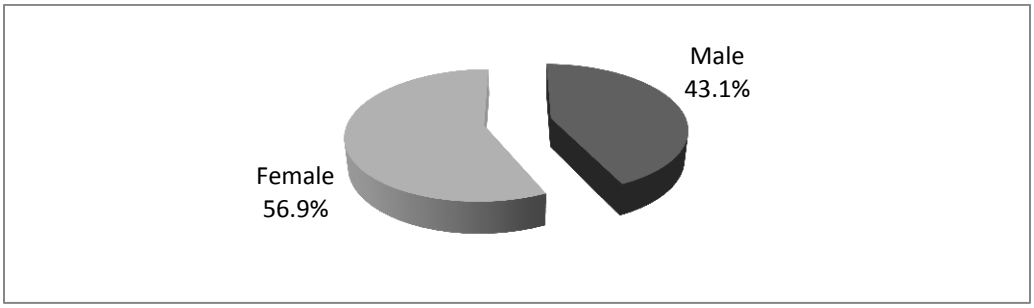


Figure 2: Gender of Respondents

4.2.2 Age of the Respondents

The respondents were asked to indicate their age. Results revealed that 35.4% were of the respondents were between 41 – 50 years, 24.6% of the respondents were between 31 – 40 years, 24.6% of the respondents were between 18 – 30 years while 15.4% of the respondents were above 50 years. This implies that most the respondents were middle aged. This also shows that most of the people in South West Kisumu Ward were in their productive age.

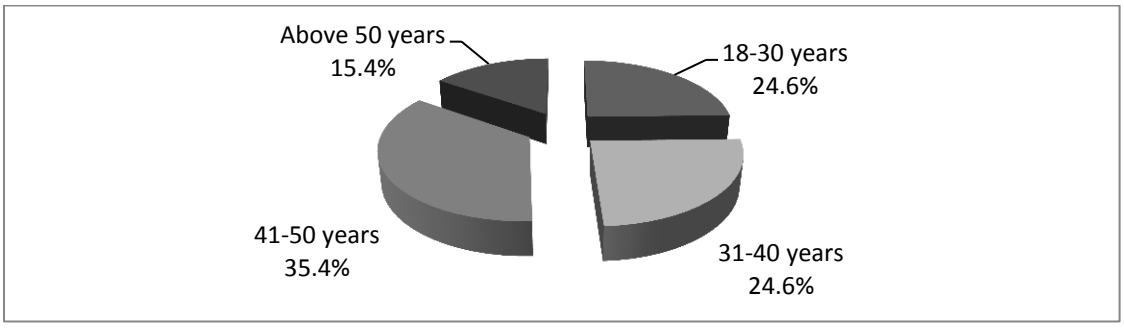


Figure 3: Age of Respondents

4.2.3 Level of Education

The respondents were asked to indicate their level of education. Results revealed that 43.1% of the respondents had attained education up to primary level, 29.2% of the respondents had attained education up to secondary level, 15.4% of the respondents had attained education up to college level, 7.7% of the respondents had attained education up to university level while only 4.6% of the respondents had no education or rather had never had a chance to acquire formal education. This implies that the residents of South West Kisumu Ward were not very educated

but had some level of literacy. This implies that they are capable of internalizing and implementing information.

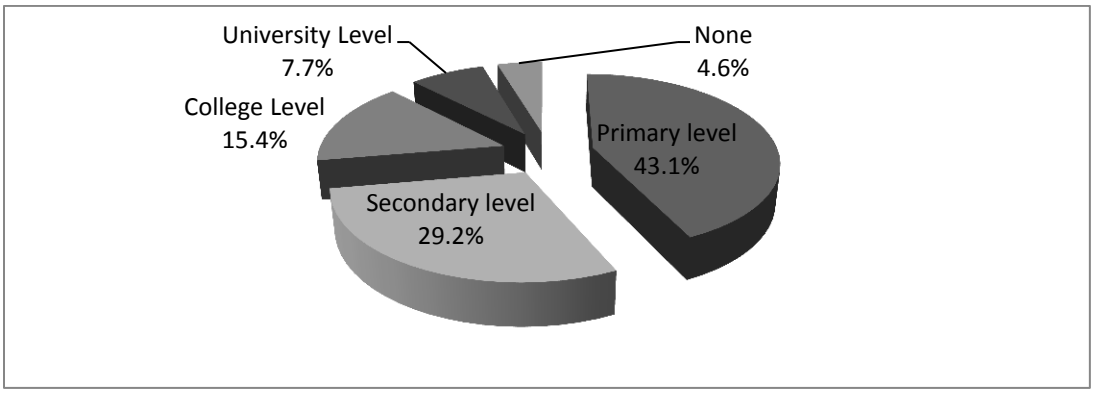


Figure 4: Level of Education of the Respondents

4.2.4 Ownership of Farm

The respondents were asked to indicate whether they had a farm. Majority, 95.4%, of the respondents indicated that had a farm while only 4.6% of the respondents indicated that they had no farm. This implies that most residents in South West Kisumu Ward had taken had taken initiative to acquire legal documents with regard to land ownership. In addition, it can imply that the county government of Kisumu has sensitized the residents to acquire legal land ownership documents.

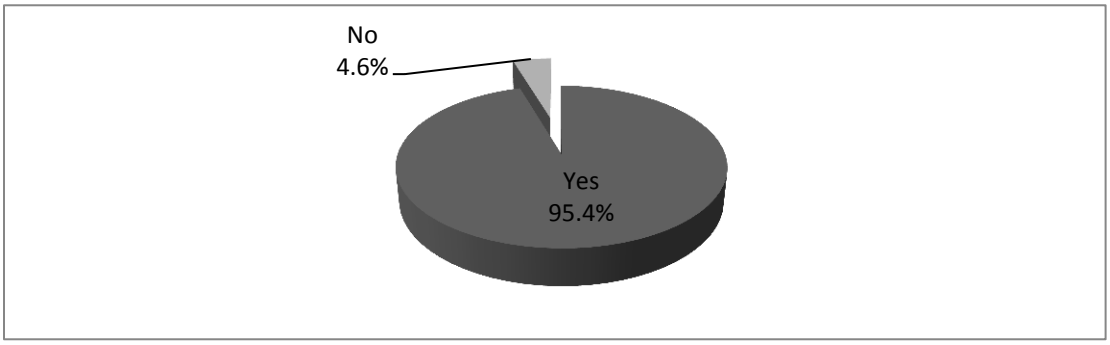


Figure 5: Ownership of Farm by the Respondents

4.2.5 Type of Farming

The respondents were asked to indicate what type of farming they practised. Results indicated that majority, 89.7%, of the respondents practiced small scale farming, 5.9% practiced large scale farming while 4.4% of the respondents practiced no type of farming. This implies that most of the residents of Kisumu South Ward practiced small scale farming. This can also imply that most of the residents had not viewed farming as a commercial activity and were just practicing it for sustenance and probably have not embraced available information on how to practice better farming.

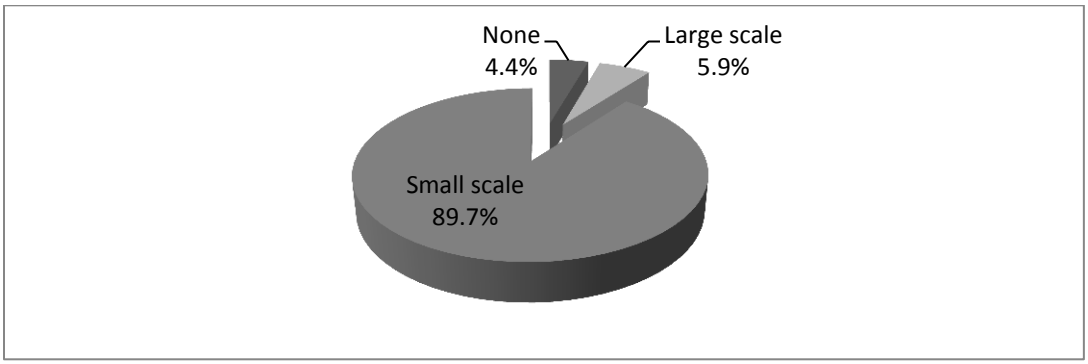


Figure 6: Type of Farming Practiced by the Respondents

4.2.6 Marital Status

The respondents were asked to indicate their marital status. Results indicated that majority, 76.9%, of the respondents were married, 13.8% of the respondents were single, 4.6% of the respondents were widowed while 4.6% of the respondents were divorced. This implies that most of the residents of South West Kisumu Ward are living in family units.

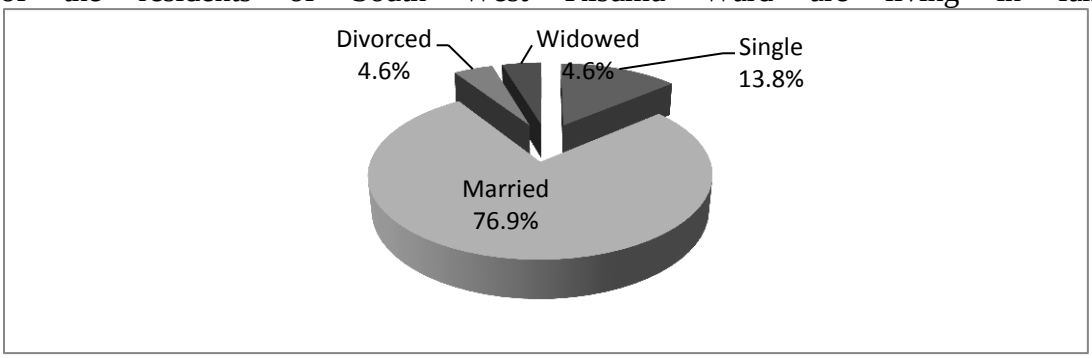


Figure 7: Marital Status of the Respondents

4.3 Descriptive Statistics

4.31 Choice of Media and the Effectiveness of Communicating Agricultural Information

Results in table 2 revealed that majority, 50.8%, agreed that farmers embrace agricultural information obtained from consulting extension officers. Results also revealed that majority, 53.9%, of the respondents agreed that farmers embrace agricultural information obtained from input suppliers/agro dealers. Results also revealed that majority, 73.8%, of the respondents agreed that farmers embrace agricultural information obtained through radio and television. Further, results revealed that majority, 72.3%, of the respondents agreed that farmers embrace agricultural information obtained through interpersonal communication (fellow farmers, neighbors and relatives). Results also revealed that majority, 60%, of the respondents agreed that farmers embrace agricultural information obtained from village leaders. Results also revealed that majority, 72.3%, of the respondents agreed that farmers embrace agricultural information obtained from farmers' groups/associations while majority, 75.4%, of the respondents agreed that farmers embrace agricultural information obtained during social gathering (church, market days, funerals).

Table 2: Choice of Media

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Farmers embrace agricultural information obtained from consulting extension officers.	23.10%	23.10%	3.10%	44.60%	6.20%
Farmers embrace agricultural information obtained from input suppliers/agro dealers.	7.70%	24.60%	13.80%	43.10%	10.80%
Farmers embrace agricultural information obtained through radio and television.	4.60%	13.80%	7.70%	60.00%	13.80%
Farmers embrace agricultural information obtained through interpersonal communication (Fellow farmers, neighbors and relatives).	6.20%	9.20%	12.30%	44.60%	27.70%
Farmers embrace agricultural information obtained from village leaders.	9.20%	21.50%	9.20%	55.40%	4.60%
Farmers embrace agricultural information obtained from farmers' groups/associations.	3.10%	13.80%	10.80%	41.50%	30.80%
Farmers embrace agricultural information obtained during social gathering (church, market days, funerals,).	4.60%	3.10%	16.90%	58.50%	16.90%

4.3.2 Language Barrier and the Effectiveness of Communicating Agricultural Information

Results in table 3 revealed that majority, 70.8%, agreed that language barrier hinders effective communication of agricultural information by the consulting extension officers. Results also revealed that majority, 63%, of the respondents agreed that language barrier hinders effective communication of agricultural information during social gathering meetings. Results also revealed that majority, 56.9%, of the respondents agreed that language barrier hinders effective communication of agricultural information through radio stations. Further, results revealed that majority, 64.6%, of the respondents disagreed that language barrier hinders effective communication of agricultural information by village leaders. Results also revealed that majority, 58.5%, of the respondents agreed that language barrier hinders effective communication of agricultural information by input suppliers/agro dealers.

Table 3: Language Barrier

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Language barrier hinders effective communication of agricultural information by the consulting extension officers.	3.10%	13.80%	12.30%	46.20%	24.60%
Language barrier hinders effective communication of agricultural information during social gathering meetings.	6.20%	20.00%	10.80%	49.20%	13.80%
Language barrier hinders effective communication of agricultural information through radio stations.	6.20%	21.50%	15.40%	35.40%	21.50%
Language barrier hinders effective communication of agricultural information by village leaders.	35.40%	29.20%	16.90%	12.30%	6.20%
Language barrier hinders effective communication of agricultural information by input suppliers/agro dealers.	3.10%	15.40%	23.10%	47.70%	10.80%

4.3.3 Farmers' Attitudes and the Effectiveness of Communicating Agricultural Information

Results in table 4 revealed that majority, 58.5%, agreed that negative attitude towards consulting extension officers hinder effective communication of agricultural information. Results also revealed that 46.1% of the respondents agreed that negative attitude towards input suppliers/ agro leaders hinder effective communication of agricultural information. Results also revealed that majority, 58.4%, of the respondents agreed that negative attitude towards village leaders hinder effective communication of agricultural information. Further, results revealed that majority, 52.3%, of the respondents agreed that negative attitude towards agricultural information communicated during social meeting hinder effective communication of agricultural information. Results also revealed that majority, 58.5%, of the respondents agreed that negative attitude towards fellow farmers hinder effective communication of agricultural information while majority, 53.9%, of the respondents agreed that negative attitude towards agricultural information obtained from farmers' groups/associations hinder effective communication of agricultural information.

Table 4: Farmers Attitudes

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Negative attitude towards consulting extension officers hinder effective communication of agricultural information.	10.80%	20.00%	10.80%	40.00%	18.50%
Negative attitude towards input suppliers/ agro leaders hinder effective communication of agricultural information.	7.70%	24.60%	21.50%	36.90%	9.20%
Negative attitude towards village leaders hinder effective communication of agricultural information.	7.70%	26.20%	7.70%	44.60%	13.80%
Negative attitude towards agricultural information communicated during social meeting hinder effective communication of agricultural information.	10.80%	21.50%	15.40%	43.10%	9.20%
Negative attitude towards fellow farmers hinder effective communication of agricultural information.	6.20%	23.10%	12.30%	46.20%	12.30%
Negative attitude towards agricultural information obtained from farmers' groups/associations hinder effective communication of agricultural information.	12.30%	23.10%	10.80%	30.80%	23.10%

4.3.4 Socio Demographic Characteristics and the Effectiveness of Communicating Agricultural Information

Results in table 5 revealed that majority, 63.1%, agreed that farmers' education level hinders effective communication of agricultural information. Results also revealed that majority, 63%, of the respondents agreed that farmers' level of income hinders effective communication of agricultural information. Results also revealed that 44.6% of the respondents disagreed that farmers' age hinder effective communication of agricultural information. Further, results revealed that majority, 58.5%, of the respondents agreed that farmers' land resources hinder effective communication of agricultural information. Results also revealed that majority, 55.4%,

of the respondents disagreed that farmers' family group hinder effective communication of agricultural information while majority, 64.6%, of the respondents agreed that the climatic conditions can hinder effective communication of agricultural information.

Table 5: Socio Demographic Characteristics

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Farmers' education level hinders effective communication of agricultural information.	0.00%	15.40%	21.50%	36.90%	26.20%
Farmers' level of income hinders effective communication of agricultural information.	1.50%	26.20%	9.20%	41.50%	21.50%
Farmers' age hinder effective communication of agricultural information.	12.30%	32.30%	15.40%	30.80%	9.20%
Farmers' land resources hinder effective communication of agricultural information.	1.50%	23.10%	16.90%	47.70%	10.80%
Farmers' family group hinder effective communication of agricultural information.	18.50%	36.90%	10.80%	23.10%	10.80%
The climatic conditions can hinder effective communication of agricultural information.	4.60%	13.80%	16.90%	36.90%	27.70%

4.3.5 Effectiveness of Communicating Agricultural Information

Results in table 6 revealed that majority, 78.5%, agreed that choice of media can hinder effective communication of agricultural information. Results also revealed that majority, 89.2%, of the respondents agreed that language barrier can hinder effective communication of agricultural information. Results also revealed that majority, 75.4%, of the respondents agreed that farmers' attitude can hinder effective communication of agricultural information. Further, results revealed that majority, 70.8%, of the respondents agreed that socio demographic characteristics can hinder effective communication of agricultural information.

Table 6: Effective Communication

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Choice of media can hinder effective communication of agricultural information.	1.50%	12.30%	7.70%	63.10%	15.40%
Language barrier can hinder effective communication of agricultural information.	0.00%	1.50%	9.20%	61.50%	27.70%

Farmers' attitude can hinder effective communication of agricultural information.	4.60%	1.50%	18.50%	52.30%	23.10%
Socio demographic characteristics can hinder effective communication of agricultural information.	6.20%	6.20%	16.90%	47.70%	23.10%

4.4 Inferential Statistics

4.4.1 Regression Analysis

The results presented in table 7present the fitness of model used of the regression model in explaining the study phenomena. Choice of media, language barrier, farmers' attitudes and socio demographic characteristics were found to be satisfactory variables in explaining effective communication of agricultural information. This is supported by coefficient of determination also known as the R square of 63.9%. This results further means that the model applied to link the relationship of the variables was satisfactory.

Table 7: Model of Fitness

Indicator	Coefficient
R	0.8
R Square	0.639

Table 8 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variables are good predictors of effective communication of agricultural information. This was supported by an F statistic of 26.586 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 8: Analysis of Variance

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.498	4	4.375	26.586	0.000
Residual	9.873	60	0.165		
Total	27.371	64			

Regression of coefficients results in table 9 shows that there is a positive and significant relationship between choice of media, socio demographic characteristics and effective communication of agricultural information as supported by beta coefficients of 0.286 and 0.750 respectively. This implies that an increase in the unit change of choice of media and socio demographic characteristics would result to an increase in effective communication of agricultural information. These results also show that there is a negative and significant relationship between language barrier, farmers' attitude and effective communication of agricultural information as supported by beta coefficients of -0.036 and -0.069 respectively. This implies that an increase in the unit change of language barrier and farmers' attitude would result to a decrease in effective communication of agricultural information.

Table 9: Regression of Coefficients

Variable	B	Std. Error	t	Sig.
(Constant)	7.594	0.515	14.753	0.000
Average Choice of Media	0.286	0.143	2.004	0.050
Average Language Barrier	-0.036	0.024	-1.525	0.004
Average Farmers Attitude	-0.069	0.007	-9.324	0.003
Average Socio Demographic Characteristics	0.750	0.219	3.425	0.001

5.0 DISCUSSION CONCLUSIONS AND RECOMMENDATIONS

5.1 Findings

The first objective was to establish the influence of choice of media on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County. Results revealed farmers embrace agricultural information obtained from consulting extension officers. Results also revealed that farmers embrace agricultural information obtained from input suppliers/agro dealers. Results also revealed that farmers embrace agricultural information obtained through radio and television. Further, results revealed that farmers embrace agricultural information obtained through interpersonal communication (Fellow farmers, neighbours and relatives). Results also revealed that farmers embrace agricultural information obtained from village leaders. Results also revealed that farmers embrace agricultural information obtained from farmers' groups/associations and that farmers embrace agricultural information obtained during social gathering (church, market days, funerals).

The second objective was to determine the influence of language barrier on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County. Results revealed that language barrier hinders effective communication of agricultural information by the consulting extension officers. Results also revealed that language barrier hinders effective communication of agricultural information during social gathering meetings. Results also revealed that language barrier hinders effective communication of agricultural information through radio stations. Further, results revealed that language barrier hinders effective communication of agricultural information by village leaders. Results also revealed that language barrier hinders effective communication of agricultural information by input suppliers/agro dealers.

The third objective was to find out the influence of farmers attitudes on the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County. Results revealed that negative attitude towards consulting extension officers hinder effective communication of agricultural information. Results also revealed negative attitude towards input suppliers/ agro leaders hinder effective communication of agricultural information. Results also revealed that negative attitude towards village leaders hinder effective communication of agricultural information. Further, results revealed negative attitude towards agricultural information communicated during social meeting hinder effective communication of agricultural information. Results also revealed that negative attitude towards fellow farmers

hinder effective communication of agricultural information. Results also revealed that negative attitude towards agricultural information obtained from farmers' groups/associations hinder effective communication of agricultural information.

5.2 Conclusions

According to the study findings, there were more women involved in farming than men in South West Kisumu Ward. This indicates that women groups in the community can be effective media for communicating agricultural information. The study also shows that the transition level to higher institutions of learning is quite low in the study area. This has greatly contributed to language barrier as an impediment to effective communication of agricultural information.

Based on the findings it is possible to conclude that the choice of media influences the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County. Based on the findings it is also possible to conclude that the language barrier influences the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County. Based on the findings it is also possible to conclude that the farmers' attitudes influence the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County. Further, based on the findings it is also possible to conclude that the socio demographic characteristics influences the effectiveness of communicating agricultural information among farmers in South West Kisumu Ward, Kisumu County.

5.3 Recommendations

The study recommended that the Ministry of Agriculture, through the relevant contact persons at the community level, should build the capacity of village leaders. This is to enable them effectively disseminate agricultural information without bias. Agricultural agencies working in the study area should empower the women groups with agricultural information, given that there are more female farmers than male. Further, the county government, through the Ministry of Agriculture, should increase agricultural extension personnel so as to reach more farmers. It should also develop communication structures that can effectively improve information exchange between the officers and the farmers.

5.4 Suggestions for Further Studies

Based on the study findings, the study suggested further study on the specific kind of agricultural information that small scale farmers need, a study on how information exchange between agricultural agencies and small scale farmers can be improved.

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