Summer 11-16-2020

Information Seeking Patterns of Small Scale Farmers for Farming Activities in Katsina State, Nigeria

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Abstract
This study identified Small Scale Farmers (SSF) information seeking patterns used and types of crops produced for effective farming activities. Three research questions and one hypothesis were developed to guide the study. Cross sectional survey design was adopted in which a total of seven hundred (700) registered small scale farmers' cooperative associations from three agricultural zones of Katsina state formed the population. A total number of two hundred and eighty (280) respondents were randomly sampled using cluster sampling technique. Data were analyzed using descriptive and inferential statistics in which the null hypothesis was tested using Pearson Product Moment Correlation Coefficient (PPMCC). The findings of the study revealed that the information seeking patterns used by SSF is through asking questions, verbal conversations and collaborations then followed by chatting and referral. The findings revealed that more than seventy percent (70%) of the farmers engaged in different types of farming activities that includes rain-fed farming, livestock farming, and irrigation farming activities. The findings revealed the highest crops produced by the small holder farmers are; beans, millet, maize and sorghum.. The study recommends that government and farmers' cooperative associations should create discussion forums at local government and ward levels to attend to small holder farmers when seeking information for successful farming activities.

Keywords: Information Seeking, Farming Activities, Small Scale Farmers

INTRODUCTION

Farmers irrespective of their categories whether large or small scale all need information as well as the patterns used for seeking information for successful farming activities. This includes new technologies or innovations for their maximum productivity in the agricultural business sector. A number of researchers have stressed the importance of information support for farming activities. For example, Mabuku (2015) stressed that, information is very vital in farming activities of any community and when it is poorly disseminated, farming activities and community development becomes highly impeded. In the same vein, Kalusopa (2005) pointed out that, agricultural

development activities are based on the utilization of information. Kalusopa further emphasized that the information must be up to date and easily accessible. The information must also serve certain functions including patterns of seeking information and knowledge for decision making. To that end, information becomes a working tool for a change that could enhance productivity and assists farmers to solve their problems.

Despite the significant importance of information in supporting agricultural system, information seeking pattern is also key to enhancing the farming activities. Information seeking pattern is a behavior that leads an individual to the use of information in order to meet their information needs. It is a conscious effort to acquire information in response to a need or gap in knowledge and is used in terms of active and intentional behavior.

In order to adequately support farming system of small scale farmers (SSF), there is the need to pay serious attention to information seeking patterns. Therefore, understanding the information seeking patterns used and types of farming activities engaged by the SSF in Katsina State could help scale up productivity and socio-economic growth of the state.

The conception of the term “small scale farmers” (SSF) varies from one community to another. To that end, scholars have not provided a generic definition for the term. Qiao et al., (2018) cited in IFAD (2013, pp. 10) described small scale farmers as “marginalised people who have difficulties to access resources, capital, information and technology”. In South Africa, the term “small scale” is associated with backward, non-productive, non-commercial and subsistence agriculture (Kirsten and Zyl, 1998; pp. 552). Furthermore, Jacobs (2008) characterized small scale farmers in South Africa as poor, less educated and resides in rural communities with less developed infrastructure. An old conception of small scale farmers is that they are “isolated” and living in “closed, self-sufficient societies” (Kalusopa, 2005). This conception as argue by the author is no longer tenable due to changes in the global agric business market. In general, as noted by Awazia and Tchamba (2018), these categories of farmers mainly live in the rural areas and farming is the mainstay of their livelihood.

According to Dyck and Silvestre (2019), there are about 500 million small scale farms in developing countries. In low income nations the small scale farmers are believed to be more

efficient than large scale farmers when compared from the perspective of farm size and productivity (Kirsten and Zyl, 1998). In Nigeria, small scale farmers made up of about 80 percent of the country's farming population (Afolabi, 2010). The contribution of the small scale farmers to food security in the low income countries of the world cannot be overemphasized. However, these small scale farmers remain the most vulnerable to food insecurity, poverty and low net income. In order to address this issue, this study argues that information must play a central role in supporting agricultural productivity of the small scale farmers. Hence, determining the information needs and information sources used by the small scale farmers is therefore appropriate to this task.

Statement of the Problem

Katsina State is one of the thirty-six (36) states of the Federal Republic of Nigeria with a total population of about eight (8) million. The state has an average annual rainfall of 300-700mm. More than seventy-five (75) percent of the population of Katsina State are farmers and largely small scale farmers (Katsina State Investor's Handbook: 2016).. There are many government agencies in the state that are providing agricultural development support services to all categories of farmers. Farming activities in Katsina State has thus, contributed immensely in food security, employment generation, and raw materials for industries (Ladan, 2017).

Despite the high percentage of small scale farmers in Katsina State, farmers in the state could not produce sufficient food to meet domestic demands. This could be linked to lack of clear understanding and utilization of information seeking patterns. At present, to the best of the researchers' knowledge, there are no studies that have examined information seeking patterns used by small scale farmers in Katsina State. Researchers in developed nations have investigated farmer's information seeking patterns and their findings may not be applicable to small scale farmers in Katsina State because of varying social, political and economic factors.

The present study is intended to contribute and bridge the knowledge gap by examining the information seeking patterns of small scale farmers for more successful farming activities in Katsina State. The finding of this study is hoped to assist governments and donor agencies to redesign the information dissemination channels to provide support services of small scale farmers in Katsina State.

Objectives of the study

The objectives of this study are:

1. To identify the information seeking patterns used by small holder farmers in Katsina state for farming activities.
2. To identify the farming activities engaged by small holder farmers in Katsina state.
3. To find out the types of crops produced by small holder farmers in the area of study.

Research Hypothesis

Ho 1: There is no significant relationship between the information seeking patterns used and farming activities engaged by small holder farmers in Katsina State.

REVIEW OF LITERATURE

Information seeking is not always triggered off by the need to solve a problem or make a decision, because at times, one may desire to have more information or assurance or wish to reduce uncertainty (Case 2007). An information need may lead to a decision to seek information. Information seeking is a form of human behaviour that involves seeking for information by means of the active examination of information sources or information retrieval activities to satisfy the information need, or to solve a problem (Ingwersen & Järvelin 2005). Wilson (2006) opined that information seeking is more closely related to the concept of 'need' than it is to the concept of information itself. Case, (2007) describes information seeking pattern as a conscious effort to acquire information in response to a need or gap in one's knowledge. The individual realizes that they have a need which drives them to seek information. There were insignificant empirical investigations aimed at providing a comprehensive definition of information seeking pattern of farmers. Case, (2007) added that, information seeking takes place when a person has knowledge stored in long term memory that precipitates an interest in related information as well as the motivation to acquire it. Kingrey, (2002) views information seeking pattern as a cognitive

exercise, a social and cultural exchange, and discrete strategies applied when confronted with uncertainty, and a basic condition of humanity in which individuals exist. He postulates that information seeking serves as an umbrella overarching a set of related concepts and issues that involve the search for, and retrieval, recognition, and application of meaningful content; in other words the content is accessed, used and synthesised into personal knowledge. Kuhlthau (1991) describes information seeking as the user's constructive activity of finding meaning from information in order to extend his or her state of knowledge on a particular topic.

Odini (2014) investigated information seeking patterns of women farmers and revealed that sought information by asking friends, neighbours, talking to relatives, and discussions with those whom they thought had the needed and right information. Others listened to radio, while some women telephone using mobile phones for needed information. Mugwisi, (2013) as cited in Kuhlthau, (1999) described information seeking pattern as the user's constructive activity of finding meaning from information in order to extend their state of knowledge on a particular topic. In order to understand the context in which people seek information, he argues that it is important to first understand information seeking which is essential for designing information activities and services that respond to users' needs. He identifies the concepts as follows:

a. Process- Information seeking pattern is not only about locating sources and finding facts to answer questions and solve problems, but also a complex inquiry process that involves learning from a diverse range of inconsistent and incompatible sources and can have important implications on the way activities and services are designed. Conceptual strategies which may be developed for application in the design of more responsive activities and services include continuing, charting, composing, collaborating and conversing.

b. Constructive process of information seeking pattern- The concepts involved in this process include: acting and reflecting, feeling and formulating, predicting and choosing, and interpreting and creating. These sequences or stages enable the person to construct or develop a new understanding based on the information encountered while searching for information.

c. Uncertainty. Uncertainty is considered to be a natural, essential characteristic of information seeking pattern (as opposed to the reduction of uncertainty as the primary objective of information seeking). It incorporates the user's perspective of information seeking, and can only be considered in context. It is context that reveals the relationship between uncertainty, confidence, uniqueness, redundancy, stance and interest, and their implications on the theoretical framework.

d. Complexity. Complexity is essential in understanding the experiences of uncertainty in the information seeking process, the argument being that it is an individual's perception of the complexity of a task that determines his/her experiences of process and degree of uncertainty. Task complexity, which is relatively new, is an important concept for understanding why and when the stages of the information search process are experienced by users in contrast to information seeking which is considered to be a more straightforward source-location and question-answering undertaking.

e. The concept of enough. Enough relates to seeking meaning in a quantity of information by determining what one needs to know and by formulating a perspective on which to build. The concept of enough may be applied at every stage of the process, e.g. incorporating the ability to

recognize an information need, to explore information on a general topic and to formulate a specific focus.

Adetimehin, Okunlola, and Owolabi, (2018) stated that smallholder farmers prefer to seek information from farmers, agricultural professionals, health extension workers, radio and mobile-phone. Smallholder farmers seek information from personal extension workers (78.9%), woreda agricultural extension experts (57.2%), family (51.3%), farmers development group members (45.9%), friends and neighbors (37.5%), cell phone (26.3%), conference and meeting (21.7%), radio (29.6%), printed materials (22.4%), cooperatives (17.1%), different level of administrative members (19.7%), agricultural researchers (7.2%), demonstration and field days (10.5%) and agricultural input suppliers (5.3%). However, Daudu, et al., (2009) conducted a study on information use and seeking pattern of farmers and the result revealed that low percentage of use of Radio Benue and Libraries (18.33%) and (8.2 %) which could be attributed to inaccessibility of libraries and non availability of radios due to cost of procuring them. It could also be due to the fact that both are one-way processes of communication. The goal of information seeking is to identify potential knowledge, data, information, or raw material that will contribute to the theoretical or empirical development of a field or to the solution of a practical problem. (Mugwisi 2013).

There are insignificant literatures on information seeking pattern of farmers, it can understand that, information seeking pattern of farmers simply means an activity by individual farmers in locating available sources of information, finding facts and use it effectively to solve problems related to farming activities through various information channels that includes: relatives, friends, extension workers, traditional leaders and newspapers. Therefore, information seeking pattern of small holder farmers is very critical for farming activities, despite that, it has not been investigated within the geographical location of the area of study, and most of the empirical studies were carried out in developed nations very few were conducted in developing

nations. Information seeking pattern assist farmers to articulate their information need. However, based on the available literatures, one can understand that, information seeking pattern is vary according to demographic characteristics like age, gender, education, exposure, information sources, content, and medium among others.

METHODOLOGY

The study adopted survey research design with emphasis on cross sectional design. Sedgwick (2014) emphasizes that, the cross sectional survey is generally quick, easy, and cheap to perform. The cross-sectional design was used to assess the hypothesized relationships between the information needs and information sources used among the small scale farmers. The rationale for employing the survey in this study is to have a bigger perspective through a bigger sample than what is usually obtainable through interviews.

The study population comprises all the seven hundred (700) small holder farmers that are registered with a farmer's cooperative association in Katsina state. The cluster sampling technique was used to select sample for the study. Cohen, Manion and Morrison, (2007) state that, when a population is too large a minimum of thirty per cent (30 %) can be employed as sample size. In this study, forty percent (40%) of the population was used as sample size. Two clusters were randomly selected out of three clusters from three selected local government areas in the state.

In this study, the instrument used for data collection was survey questionnaire. The questionnaires were pre-tested to ensure the reliability of the instrument. The reliability was tested in terms of the Cronbach Alpha reliability coefficient which was 0.642. According to Al Barki & Kisswani (2014), a Cronbach alpha coefficient of 0.70 or more is more accepted, however, approximately 0.60 percent is argued as the most widely supported.

Two hundred and eighty (280) copies of the questionnaires were distributed to the sample respondents and two hundred and fifty five (255) copies representing (91.1%) were returned and found useful. The data were analyzed using descriptive and inferential statistics. The descriptive statistic was used to answer the research questions and to show some demographic information about the respondents, while the inferential statistics was used to test the hypothesized

relationships between information seeking patterns used and farming activities engaged by small holder farmers using Pearson Product Moment Correlation Coefficient (PPMCC).

RESULTS

Demographic Data

The demographic data of small holder farmers in Katsina state included the gender of the respondents, the age, the educational level and farming experiences. Concerning the gender of the small scale farmers, the survey data revealed most (85.1%) of the respondents are male compared to (14.9%) female. In terms of the respondent's age group, the result demonstrated wide differences with few (5.10%) of the respondents below 20 years of age, (22.8%) are between twenty one to thirty years, (19.2%) thirty one to forty years, most (32.6%) forty one to fifty years and (20.8%) are between fifty one years and above. With respect to the respondents' educational level, the study demonstrated that most (37.7%) of the respondents possessed the National Certificate of Education (NCE) and the Ordinary National Diploma (OND) and only a few 25.5% are holders of the Secondary School Certificate. The least (12.9%) possessed the Primary School Leaving Certificate, (4.31%) are holders of Adult Mass Literacy Certificate and (19.6%) other certificates. With regards to farming experience, the result revealed wide differences whereby (10.9%) of the respondents indicated that they have between one to five years experience, (23.1%) six to ten years, (22.8%) eleven to twenty years, most (25.5%) twenty-one to thirty years and (17.7%) have thirty one years and above.

Table 1.1 information seeking patterns used by small holder farmers in Katsina State

SN	Information seeking patterns used and obtained through	Agree (%)	Undecided (%)	Disagree (%)
1	Referral to information units	183 (71.76)	4 (1.57)	68 (26.67)
2	Asking questions	245 (96.08)	1 (0.39)	9 (3.53)
3	Social media chatting	207 (81.18)	7 (2.75)	41 (16.08)
4	Verbal conversation	230 (90.20)	-	25 (9.80)
5	Collaboration with extension workers	229 (89.80)	7 (2.75)	19 (7.45)

Source: Field data (2018) by using SPSS version 16.0

From table 1.1, revealed that smallholder farmers prefer to seek information through asking questions with (96.08%), followed by verbal conversation (90.20%), collaboration with

extension workers (89.80%), social media chatting (81.18%) and referral to information units (71.76%) came last. These could be attributed to the personal interactions verbally or in writing and educational background of farmers to seek and obtain information among themselves and extension workers.

Table 1.2: Farming activities engaged by small holder farmers in Katsina state

SN	Farming activities engaged	Yes (%)	No (%)
1	Rain fed farming	219 (85.88)	36 (14.12)
2	Irrigation farming	185 (72.55)	70 (27.45)
3	Fadama farming	133 (52.16)	122 (47.84)
4	Livestock farming	217 (85.10)	38 (14.90)
5	Other farming	166 (65.10)	89 (34.90)

Source: Field data (2018) by using SPSS version 16.0

The farming activities engaged by small holder farmers in Katsina state according to table 1.2 indicated that farmers were fully engaged in all different types of farming activities. Rain fed farming (85.88%) tops the list. This is followed by livestock farming (85.10%), irrigation farming (72.55%) while 65.10% engaged in other farming activities. These could be attributed that farming is their main occupation.

Table 1.3: Types of crops produced by small holder farmers in Katsina state

SN	Crops produced	Yes (%)	No (%)
1	Sorghum crops	194 (76.08)	61 (23.92)
2	Maize/corn crops	218 (85.49)	37 (14.51)
3	Millet crops	222 (87.06)	33 (12.94)
4	Beans crops	247 (96.86)	8 (3.14)
5	Any other crops	226 (88.63)	29 (11.37)

Source: Field data (2018) by using SPSS version 16.0

From table 1.3, beans are the highest crops produced by small holder farmers in Katsina state with (96.86%). This is followed by millet (87.06%), maize/corn (85.49%) and sorghum (76.08%). It is also indicated that, the small holder farmers cultivate other different types of

crops which representing 88.63% in the study area. This signifies that, there are significant percentage of the varieties of crops produces by farmers in Katsina state.

Null Hypothesis of the Study

$H0_1$ There is no significant relationship between the information seeking patterns and farming activities engaged by small holder farmers in Katsina state.

Table 2. Correlations between Information Seeking patterns and Farming Activities

		Information Seeking Patterns	Farming Activities Engaged
Information Seeking Patterns	Pearson Correlation	1	.480**
	Sig. (2-tailed)		.000
	N	255	255
Farming Activities Engaged	Pearson Correlation	.480**	1
	Sig. (2-tailed)	.000	
	N	255	255

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 above represents the Pearson's Product Moment Correlation (PPMC) of the first hypothesis of the study on the level of information seeking patterns and farming activities engaged of the farmers in Katsina state. The analysis revealed that the correlation coefficient is significant at the 0.01 level (2-tailed) and the relationship is positive ($r(253) = .480$, $n=255$, $p=.000$, i.e. less than 0.05). This analysis revealed a strong correlation between the variables, about 50% in the variation of the level of information seeking patterns of farmers is explained by the variation in engaged level of farming activities of small holder farmers in Katsina State. While the remaining percentage of the variations is being influenced by other factors in farming activities engaged in Katsina state.

Accepting or Rejecting the Null Hypothesis

If the P value significant level is less than 0.05 ($p < .05$) the Null Hypothesis of the study will be rejected, while if the P value significant level is greater than 0.05 ($p > .05$) the Null Hypothesis of the study will be retained. Therefore, according to this analysis, the Null Hypothesis 2(**$H0_2$**) is rejected ($p < 0.05$ i.e. Sig = 0.000), because there is sufficient evidence of significant correlation ($r(253) = .480$, $n=255$, $p=.000$, i.e. less than 0.05) between the level of Information Seeking patterns and extent of farming activities engaged by small holder farmers for effective farming activities in Katsina State.

That is, there is a statistically significant relationship between the information seeking patterns used and extent of effective farming activities engaged by small holder farmers in Katsina state. The variations in the mean of the dependent variable (effective farming system) is not happening by chance but as the result of the influences of information seeking patterns adopted by the small holder farmers.

DISCUSSION

The study identified information seeking patterns of small holder farmers in the study area and revealed that farmers were significantly obtained information through asking questions, verbal conversations, collaboration with extension workers than social media charting and referral to local area information units of their LGAs to solve problems related to the farming activities.

These findings are similar to those of other studies on farmers information seeking patterns, Mugwisi (2013) who conducted a research on information needs and challenges of agricultural researchers and extension workers in Zimbabwe, and also similar to that of Odini (2014) who revealed that farmers sought information by asking friends, neighbours, talking to relatives, and discussions. It is also similar to the findings of Adetimehin, et al (2018) revealed that smallholder farmers seek information through asking questions from friends, family, and farmers, through collaboration with extension workers, agricultural researchers, and social media chatting with mobile-phone. The result of this study indicated that small holder farmers use

information seeking pattern to identify their information need and sources. In addition, the study also revealed the major farming activities engaged by small holder farmers in Katsina state that includes; rain fed, irrigation and livestock farming activities while the major types of crops produced and cultivated include; sorghum, maize, millet and beans.

Conclusion

The study revealed major farming activities engaged by farmers which include; rain fed, irrigation and livestock farming, while beans, millet, maize and guinea corn were identified to be the major crops produced. In line with the commitment of government both state and federal to diversify and broaden the economy sector through agricultural development, one can understand the potentialities of seeking and utilizing information support agricultural developmental activities. It is hoped that suggestions of this study should be used by government and relevant agencies to address the problems and ensure that policies are tailored at helping farmers to meet their information needs by using appropriate patterns for information seeking, this will go along way different in angles and facilitate farming activities of small scale farmers in Katsina state.

Recommendations

Recommendations are based on the research outcomes, that Katsina state government should have a well organized and functional integrated agricultural unit as well as farmers cooperative associations for knowledge and information seeking that will link all farmers' extension workers and agricultural dealers. Government should focus on increasing small scale farmers' level of awareness towards use of technology tools and new innovation for information seeking for successful farming activities as a key success source for information as well as the use of community radios and television stations to disseminate information to the rural small scale farmers.

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