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Use of interpersonal communication source by the farmers in receiving agricultural information

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Abstract: The main purpose of this study was to determine the use of interpersonal communication source in receiving agricultural information by the farmers, and to explore the relationships between the selected characteristics of the farmers (age, literacy, farm size, family income, cosmopoliteness, socio-economic status, attitude towards technology, social participation, agricultural knowledge and innovativeness) and their use of interpersonal communication source. Data were collected using interview schedule from a sample of 120 farmers selected multistage random sampling procedure from eight villages of Sujalpur union under Birganj Upazila of Dinajpur district during 10 November to 15 December 2009. The use of interpersonal communication source was determined initially on four dimensions *viz.* contact, understanding, interaction and application, and finally a use of interpersonal communication source index (UICSI) was computed. The UICSI ranged from 17.47 to 236.77 with a possible range of 0 to 400. Among the seven communication sources included in the study the use of neighbours and friend was the highest and the use of Upazila Fisharies Officer was the lowest. Abut two-fifths (38.34 percent) of the farmers had low use of interpersonal communication source in receiving agricultural information while 33.33 percent had medium and 28.33 percent of them had high use. Literacy, farm size, family income, cosmopoliteness, socio-economic status, attitude towards technology, agricultural knowledge and innovativeness of the farmers had significant positive relationships with their use of interpersonal communication source, while the age of them had significant negative relationship with the use of interpersonal communication source.

Key words: Use, interpersonal communication source and agricultural information

Introduction

Agriculture contributes about 21.10 percent of the country's Gross Domestic Product (GDP) and provides employment of about 63 percent (BBS, 2007). In order to face the chronic food shortage, it is essential to increase agricultural productivity in Bangladesh. In livestock sector, the extension service has been operated through animal health and disease control. Small scale poultry and dairy have also been developed throughout the country with the extension services of Department of Livestock Service. As regards to fisheries extension service the Department of Fisheries has been doing the job with the farming community to increase the production of fresh water fisheries in the ponds, homestead mini ponds and other water bodies in the country.

Communication source has now become a very important aspect for making progress not only in technological development but also for rural development. In the rural areas, people use different source of information. Some sources are frequently used while others are used occasionally and rarely. There are reasons for slow and inadequate flow of information but as far as communication of agricultural information is concerned, it involves acquisition, processing, and utilization of the agricultural information in all the three systems i.e. research system, extension system and the client system at a reasonably short time.

Communication source play a very important role in the diffusion of technologies among the farmers. The role of course, varies from locality to locality and country to country. Especially, in case of agriculture the use of communication source is crucial for the individual entrepreneurs. It is not true that the farmers always contact with the source that are managed and offered by the government. The use of communication source by the farmers has changed correspondingly to meet their needs (Podder and Kashem, 2000).

Improved farm information and technology can be communicated through various sources to the farmers and one has to take into account the preference of the farmers for a particular information source. Out of many sources of information the farmers may use few depending on the credibility of information sources. The source credibility may vary according to type of farming, previous experience, socio-economic status, and other characteristics of receiver of communication message (Bhairamkar *et al.*, 2003). In view of the problem stated above the following objectives has been put forward for giving proper direction to the study: (i) to determine use of interpersonal communication source by the farmers in receiving agricultural information in respect of crop cultivation, livestock production and fish culture. The interpersonal communication source include–neighbours and friends, input dealers, SAAO, AEO, UAO, VS and UFO, (ii) to explore the relationship of the selected characteristics of the farmers with their use of interpersonal communication source in receiving agricultural information. The selected characteristics include- age, literacy, farm size, family income, cosmopoliteness, socio-economic status, attitude towards technology, social participation, agricultural knowledge and innovativeness.

Materials and Methods

Sujalpur union of Birganj upazila under Dinajpur district was the locale of the study. Multi-stage random sampling procedure was followed in this study. A total of 120 farmers were selected randomly from a population of 528 farmers constituted the sample of this study. The data were collected during the period from 10 November to 15 December 2009 using interview schedule. For measuring the use of interpersonal communication source, farmers' contact, understanding, interaction and application were determined. Farmer' contact with an interpersonal communication source was measured by computing the contact sub-score (CSS). The farmers were requested to indicate their contact with each of the selected interpersonal communication source. A 4-point scale such as 'high', 'moderate', 'low' and 'none' were used in this purpose and weights were assigned to each of the scale responses as 3 for 'high', 2 for 'moderate' 1 for 'low' and 0 for 'none' contact. The contact of a respondent was therefore determined by adding the score against the seven selected interpersonal communication sources. Thus, the

CSS of a respondent in receiving agricultural information could range from 0 to 21. A similar procedure were followed to measure understanding sub-score (USS), interaction sub-score (ISS) and application sub-score (ASS) for each of the farmers. For making comparative analysis of the seven interpersonal communication source with respect to contact, understanding, interaction and application, an index was calculated for each of the dimensions. First of all a contact index (CI) was calculated by using the following formula:

$$CI = \frac{P_h \times 3 + Pm \times 2 + P_l \times 1}{3}$$

Where, P_h = Percentage of farmers for high contact, P_m = Percentage of farmers for moderate contact, P_l = Percentage of farmers for low contact, CI= Contact index

Thus, the value of comparative contact index (CCI) for each of the seven interpersonal communication source could range from 0 to 100, where 0 indicated none contact with interpersonal communication source and 100 indicated high contact with interpersonal communication source. A similar procedure was followed to calculate the understanding index (UI), interaction index (II) and application index (AI). The use of interpersonal communication source index (UICSI) for the selected personal contact media were the summation of CI, UI, II and AI values. Thus the possible value of UICSI could range from 0 to 400, where 0 indicated none use of interpersonal communication source and 400 indicated high use of interpersonal communication source.

Results and Discussion

Selected individual characteristics of the farmers: In the present study ten selected characteristics of the farmers such as age, literacy, farm size, family income, cosmopoliteness, socio-economic status, attitude towards technology, social participation, agricultural knowledge and innovativeness and their use of interpersonal communication source were studied. The salient findings of the characteristics of the farmers are presented Table 1.

Table1. Characteristic profile of the farmers selected for the study

Characteristics	Measurement (unit)	Possible range	Observed range	Categories	Respondents		Mean	SD
					Number	Percentage		
Age	Actual years	-	30-74	Young (up to 35)	18	15.00	46.66	10.87
				Middle aged (36-45)	48	40.00		
				Old (>45)	54	45.00		
Literacy	Year of schooling	-	0-12	Illiteracy (0)	63	50.00	3.27	3.75
				Primary education (1-5)	33	27.50		
				Secondary education (6-10)	25	20.83		
				Above secondary education (>10)	2	1.67		
Farm size	Actual (in ha)	-	0.30-10.39	Small farm (≤ 1 ha)	26	21.67	2.17	1.68
				Medium farm (1.01-3 ha)	69	57.50		
				Large farm (> 3)	25	20.83		
Family income	Actual (1=Tk.000)	-	10.9-950.0	Low income (≤ 100)	30	25.00	213.88	155.77
				Medium income (101-200)	65	54.17		
				High income (>200)	25	20.83		
Cosmo-politeness	Rated score	-	5-18	Low (>9)	44	36.67	10.67	2.97
				Medium (10-12)	44	36.67		
				High (>12)	32	26.66		
Socio-economic status	Rated score	-	9-162	Low status (≤27)	11	9.17	53.20	26.11
				Medium status (28-79)	97	80.83		
				High status (>79)	12	10.00		
Attitude towards technology	Rated score	10-50	30-48	Unfavorable (≤39)	35	29.17	41.17	3.57
				Moderately favorable (40-43)	50	41.66		
				Favorable (>43)	35	29.17		
Social participation	Rated score	0-21	0-10	No participation (0)	70	58.33	1.32	2.14
				Low participation (1-3)	36	30.00		
				Medium participation (4-7)	8	6.67		
				High participation (>7)	3	2.50		

Farmers' contact with the selected interpersonal communication source: The farmers had contact with seven selected interpersonal communication source with varying degrees for seeking their information. Farmers were classified into four categories on the basis of their contact with each of the communication source such as 'high', 'moderate', 'low' and 'none'. The number of farmers contact with each of the categories was converted to percentage. In order to get comprehensive information about the farmers' contact; mean and contact index (CI) were computed against each of the communication source. The contact scores of each of the source ranged from 0 to 3 (possible range could be also 0 to 3), the mean varied from 0.16 to 2.28 and CI ranging from 5.30 to 75.87 (Table 2). The contact of the farmers with the seven selected sources varied to a great extent. The highest proportion of the farmers made contact with neighbours and friends and closely followed by input dealers (CI = 70.00), SAAO (CI = 59.17), VS (CI = 41.33), AEO (CI = 17.80), UAO (CI = 8.63) and UFO (UI = 5.30).

Farmers' understanding of information received from the selected interpersonal communication source: Information received by the farmers from the selected interpersonal communication source may or may not always be understood by them. In case of non understanding, they usually make further contact with

other selected source/(s) to clarify the information as they received it earlier from the contacted interpersonal communication source. As of contact of the farmers with the interpersonal communication source farmers were also classified into four categories based on the understanding of information. In order to get comprehensive information about the farmers' understanding of the received information from the selected interpersonal communication source mean and co-efficient of variation were computed against each of the communication source. The understanding scores of each of the interpersonal communication source ranged from 0 to 3, with the mean ranged from 0.09 to 1.73 and UI 3.06 to 57.53 (Table 3). In order to ascertain the importance of different interpersonal communication source the contact index (UI) was computed. The findings indicated that farmers had the highest contact with neighbours and friends (UI = 57.53) followed by, input dealers (UI = 50.23), SAAO (UI = 35.00), VS (UI = 21.66), AEO (UI = 8.90), and UFO (UI =3.83). The least contacted source was UAO (UI=3.06).

Table 2. Distribution of the farmers according to their contact with the selected communication source

Interpersonal communication source	Percentage of farmers				Mean	CI
	High	Moderate	Low	None		
Neighbours and friends	55.0	29.2	4.2	11.7	2.28	75.87
Input dealers	38.3	44.2	6.7	10.8	2.10	70.00
SAAO	46.7	18.3	0.8	34.2	1.78	59.17
AEO	14.2	5.0	0.8	80.0	0.53	17.80
UAO	7.5	1.7	0	90.8	0.26	8.63
VS	25.8	23.3	0	50.8	1.24	41.33
UFO	4.2	0.8	1.7	93.3	0.16	5.30

Table 3. Distribution of the farmers according to understanding of information received from the selected source

Interpersonal communication source	Percentage of farmers				Mean	UI
	High	Moderate	Low	None		
Neighbours and friends	29.2	25.0	35.0	10.8	1.73	57.53
Input dealers	8.3	43.3	39.2	9.2	1.51	50.23
SAAO	8.3	21.7	36.7	33.3	1.05	35.00
AEO	0	6.7	13.3	80.0	0.27	8.90
UAO	0	0	9.2	90.8	0.09	3.06
VS	3.3	9.2	36.7	50.8	0.65	21.66
UFO	0.8	3.3	2.5	93.3	0.12	3.83

Farmers' interaction with selected interpersonal communication source: After understanding of the information, farmers usually interact with the reliable communication source for verification and confirmation of the information. The interaction with each of the interpersonal communication sources by the farmers were also classified into four categories as were used in case of contact and understanding. The number of farmers in relation to interaction with each of the categories was also converted in percentage. The mean and CV were computed against each of the selected sources. The interaction scores of the seven sources ranged from 2 to 3; the mean being 0.07 to 1.19 and II 2.43 to 63.87 (Table 4). In order to ascertain the importance of different interpersonal communication sources the interaction index (II) was also calculated. It was found that the farmers had the highest interaction with the neighbours and friends (II = 63.87) followed by the input dealers (II = 39.77), SAAO (II=16.60), AEO (II = 6.10), UFO (II = 3.37), VS (II = 2.77) and UAO (II = 2.43).

Table 4. Distribution of the farmers according to their interaction with the selected source

Interpersonal communication source	Percentage of farmers				Obs. range	Mean	II
	High	Moderate	Low	None			
Neighbours and friends	38.3	26.7	23.3	11.7	3	1.08	63.87
Input dealers	6.7	35.0	29.2	29.2	3	1.19	39.77
SAAO	3.3	8.3	23.3	65.0	3	.50	16.60
AEO	0	5.8	6.7	87.5	2	.18	6.10
UAO	.8	.8	3.3	95.0	3	.07	2.43
VS	0	2.5	3.3	94.2	2	.08	2.77
UFO	0	4.2	1.7	94.2	2	.10	3.37

Farmers' application of information received form the selected interpersonal communication source: The farmers applied the received information to their farming activities after interacting with different interpersonal communication source. Similar to contact, understanding and interaction it was also categorized into four categories. The observed information application scores of each of the source ranged from 0 to 3. The mean and AI ranged from

0.15 to 1.84 and 4.97 to 61.37 respectively (Table 5). The findings were evident from Table 5 that the farmers had highest application of those information which they received from input dealers followed by, neighbours and friends (AI=39.50), SAAO (AI = 38.63), VS (AI=31.13), AEO (AI = 16.10), UAO (AI = 6.9) and UFO (AI = 4.97).

Table 5. Distribution of the farmers according to their application of information received from the selected source

Interpersonal communication source	Percentage of farmers				Mean	AI
	High	Moderate	Low	None		
Neighbours and friends	1.7	26.7	60.0	11.7	1.18	39.50
Input dealers	20.8	52.5	16.7	10.0	1.84	61.37
SAAO	6.7	37.5	20.8	35.0	1.16	38.63
AEO	10.0	8.3	1.7	80.0	o.48	16.10
UAO	3.3	5.0	.8	90.8	o.21	6.90
VS	1.7	40.8	6.7	50.8	1.42	31.13
UFO	2.5	3.3	.8	93.3	o.15	4.97

Comparison among the dimensions of use of interpersonal communication source: In this section comparison was made among CI and UI, UI and II and II and AI. The minimum gap between CI to UI, and UI to II of a interpersonal source indicates good performance, while maximum gap indicates less performance of that source, but the gap between II to AI could be reversed (Table 6). The index value contained in Table 6 indicates that the least gap between contact index and understanding index was found in case of UFO (0.1.47) followed by UAO (5.57), AEO (8.9) and so on. The highest gap was found in case of SAAO (24.17).

Table 6. Distribution of the farmers according to their gap between dimensions

Sources	CI	UI	CI-UI	UI	II	UI-II	II	AI	II-AI
NF	75.87	57.53	18.34	57.53	63.87	-6.34	63.87	39.50	24.37
ID	70.00	50.23	19.77	50.23	39.77	10.46	39.77	61.37	-21.60
SAAO	59.17	35.00	24.17	35.00	16.60	18.40	16.60	38.63	-22.03
AEO	17.80	8.90	8.90	8.90	6.10	2.80	6.10	16.10	-10.00
UAO	8.63	3.06	5.57	3.06	2.43	0.63	2.43	6.90	-4.47
VS	41.33	21.606	19.67	21.66	2.77	18.89	2.77	31.13	-28.36
UFO	5.30	3.83	1.47	3.83	3.37	0.46	3.37	4.97	-1.60

The least gap between contact index and understanding index of UFO might be due to the reason that delivery of information among the limited fish farmers by UFO could recognize the importance of fish farming. On the other hand, the highest gap between contact index and understanding index of SAAO might be due to the reason that the SAAO remained busy in distributing fertilizer among the farmers at the time when the researcher conducted this study. The farmers probably failed to talk to SAAO regarding their farm problems.

In case of gap between UI and II, least gap between was found in case of neighbors and friends (-6.34) followed by UFO (0.46), UAO (0.63), AEO (2.8) and so forth. The highest gap was found in case of VS (18.4).

On the other hand, the findings related to the gap between II and AI indicates that the highest gap was found on neighbours and friends (24.37) followed by UFO (-1.6), UAO (-4.47) and so on. The least gap was found on VS (-28.36). The probable reason for highest gap on neighbours and friends might be due their lack of modern technological knowledge. The least gap was on VS; this may be due to the reason that VS was the only one professional source of information on livestock and the farmers contacted with this source for their animal and poultry diseases. Farmers probably thought that the information provided by the VS was valid, reliable and so they made less interaction with other sources after understanding of received information.

Use of interpersonal communication source: The use of interpersonal communication source index (UICSI) for each of the seven selected interpersonal communication sources were the summation of contact index (CI), understanding index (UI), interaction index (II) and application index (AI). The UICSI value of each of the selected interpersonal communication source ranged from 17.47 to 236.77 against the possible range of 0 to 400 (Table 7). The findings show that the highest portion of the farmers used neighbours and friends (UCCI=236.77) in receiving their agricultural information followed by input dealers (UCCI=221.37, SAAO (UCCI=147.40), VS (UCCI=96.89), AEO (UCCI=48.90 UAO (UCCI=21.02) and UFO (UCCI=17.47).

Overall use of information received from interpersonal communication source: The possible scores of using interpersonal communication source by the farmers could range from 0 to 84. The computed interpersonal communication source using scores ranged from 5 to 45 with an average of 23.52, SD 7.48 and coefficient of variation 31.80 percent. Based on their interpersonal communication source using scores the respondents were classified into three categories as shown in Table 8. Data presented in Table 8 show that a little less than two-fifths (38.34 percent) of the respondents had low use of interpersonal communication source in receiving agricultural while 33.33 percent had medium and 28.33

percent of them had high use of interpersonal communication source.

This might be due to the availability of these sources at the door step of the farmers. The professional sources are technically more sound and well equipped compared to non-professional sources but the findings indicate that the use of SAAO and VS out of five professional sources were moderately satisfactory. The remaining three were non-satisfactory compared to non-professional sources like neighbours and friends, and input dealers. This might be due to the reason that deliberates and continuous follow of farm information of professional source (i.e. AEO, UAO and UFO) were not so far satisfactory to meet farmers' needs and interest.

Table 7. Distribution of index value of four dimensions for calculation of use of interpersonal communication source index of the selected sources

Interpersonal communication source	Dimensions value				UICSI
	CI	UI	II	AI	
Neighbours and friends	75.87	57.53	63.87	39.50	236.77
Input dealers	70.00	50.23	39.77	61.37	221.37
SAAO	59.17	35.00	16.60	38.63	149.4
AEO	17.80	8.90	6.10	16.10	48.9
UAO	8.63	3.06	2.43	6.90	21.02
VS	41.33	21.66	2.77	31.13	96.89
UFO	5.30	3.83	3.37	4.97	17.47

Note: CI = Contact Index, UI = Understanding Index, II = Interaction Index, AI = Application Index and UICSI = Use of Interpersonal Communication Source Index

Table 8. Use of interpersonal communication source by the farmers in receiving agricultural information

Interpersonal communication source user farmers categories	Farmers		Observe range	Mean	SD	CV
	Number	Percent				
Low (5-20)	46	38.34				
Medium (21-27)	40	33.33	5-45	23.52	7.48	31.80
High (>27)	34	28.33				
Total	120	100.00				

Table 9. Relationships between the selected characteristics of the farmers and their use of interpersonal communication source in receiving agricultural information (N=120)

Dependent variable	Independent variables	Values of correlation coefficient ('r')
Use of interpersonal communication source	Age	-0.347**
	Literacy	0.296**
	Farm size	0.238**
	Family income	0.305**
	Cosmopoliteness	0.274**
	Socio-economic status	0.294**
	Attitude towards technology	0.227*
	Social participation	0.177
	Agricultural knowledge	0.292**
	Innovativeness	0.295**

** significant at 1% level of probability , * significant at 5% level of probability

Relationship between the selected characteristics of the farmers and their use of interpersonal communication source in receiving agricultural information: The purpose of this section is to examine the relationships of ten selected characteristics of the farmers with their use of interpersonal communication source in receiving agricultural information from the input dealers. The findings have been shown in Table 9.

The findings at Table 9 reveal that literacy, farm size, family income, cosmopoliteness, socio-economic status, attitude towards technology, agricultural knowledge and innovativeness of the farmers had significant positive relationships with their use of interpersonal communication source, while the age of them had significant negative relationship with the use of interpersonal communication source; social participation had no relationship. From the findings it is clear that if the literacy level of the farmers and their knowledge can be increased through some means of non-formal education, it is expected that their use of interpersonal communication source in receiving agricultural information for interpersonal communication sources as well as other sources. This is of course important for the administrators and concerned others for policy implications.

Farmers use those communication sources which are available in their locality. The local interpersonal sources are local culture oriented and cordial which can be called 'the anchored relation' (Goffman, 1971). A more or less

similar finding was reported by Islam *et al.* (1998). They found that the sugarcane growers maintained more contact with local interpersonal sources for obtaining information compared to group and mass media. In this regard Kadam and Sable (1983), and Patil and Kibey (1984) further added that the local communication source more particularly the input dealers played significant roles to promote their commodities and to an established prestige and position in the community supplied more information to the farmers. That is why the farmers become more dependent to interpersonal communication source in receiving agricultural information.

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