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Use of Communication Media by the Bean Farmers in Selected Areas of Pabna District in Bangladesh

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ABSTRACT

The major purposes of the study were to determine and describe some selected characteristics of the bean farmers, to determine the extent of use of communication media and to identify the factors that influence use of communication media by the bean farmers. The study was conducted in four villages of two unions under Atghoria upazilla of Pabna District. Data were collected from a random sample of 106 bean farmers by using an interview schedule during 15 Dec, 2017 to 15 Jan, 2018. Overwhelming (88.8%) of the farmers had medium to high use of communication media. Step wise multiple regression analysis indicated that knowledge on bean cultivation, training exposure, organizational participation and education had significant positive contribution with their use of communication media by the bean farmers. Overwhelming (86.8%) of bean farmers use medium to high communication media. therefore, it may be said that use of communication media by the bean farmers is a serious issue to be addressed to maximize bean cultivation.

Keywords: Problems faced, Farmers, vegetable cultivation, Bangladesh

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Introduction

Globally, has been a tremendous increase in the growth of population in the recent time. The situation in Bangladesh is no different. Bangladeshi cities are home to an estimated 320 million people, almost equivalent to 30 per cent of the total population (BBS, 2017). As evident in majority of the industrialized countries, Bangladesh is experiencing a shift over time from a largely rural and agrarian population residing in villages to urban, non-agriculture center's (Kapoor, 2012).

Communication media has a vital role to carry the messages of improved vegetable cultivation practices from sources to the intended audience. It is a fact that most of extension organizations have limited scope and time to conduct research on how different communication media influence of the bean farmers. Since their communication behaviour predisposes them to act in a predictable fashion to use and object, idea or situation to which they are exposed. It is a well-established fact that bean production can be increased significantly by improving farmers existing knowledge and timely available of inputs. A sound system of communication for the effective flow of scientific information from its sources to the ultimate users has become a burning question of the day. Rogers (1962) after reviewing many studies on sources of information sources were most important at awareness stage, and personal sources were most important at the evaluation stage in the adoption process.

Different organizations have been making great endeavour to introduce the technological knowledge among the farmers. These organizations have employed extension workers to different cadres to work with rural people.

Bean production can only be increased if appropriate technologies are used by the farmers who are the primary unit of improved practices. Diffusion of technological knowledge on modern bean varieties among the rural people demands effective communication system. This suggests that the flow of information should be as fast as possible and also should be understandable, well interpreted, accepted and liked by users. Transfer of technologies means the movement of information technologies from a research system through extension system to the client (Kashem and Halim, 1991).

The Department of Agricultural Extension (DAE) and some other Government and Nongovernment Organizations are working in the bean cultivation field in transferring information/ technologies from a research system (source of technologies) through an extension system (interpreter and dissemination of technologies) to the client system (users of technologies). Extension agents follow a number of extension methods such as Result or Method demonstration, Farm publications (leaflets, bulletins poster etc.) Agricultural Radio and Television programme, Progressive and Contact farmers, Local and Opinion leader, Field tour, Field days etc.

Advancement of technologies and communication process belongs to the same phenomenon and goes hand in hand. Again technologies must reach to the people through right media within the quickest possible time. All communication media would not be appropriate to serve the people. The mass media channels can be used for accelerating dissemination of information and regarding various aspects of bean cultivation and rural development. Previous research results like (Nuruzzaman, 2003) showed that television had been used more by the farmers in receiving agricultural information than other media like radio, folk song, agricultural fair, poster, newspaper and leaflet or bulletin. (Anisuzzaman, 2003) showed that among the mass media radio play a vital role in communicating information. The next important media were progressive farmers, TV, Result demonstration for spread-out of all the practices of bean production technologies.

Mass media channels are television, radio, video and film, magazine, newspaper, leaflet, booklet, publication, poster etc. Nowadays, most effective tool to bridge the geographical distance between the message senders and receivers. Extensive use of electronic media in support of agricultural extension, diffusion of information technologies, social reforms, education and health and so on are seen all over the world.

Different media including individual contact, group contact and mass contact etc. have a vital role to carry the message of improved bean cultivation practices from sources to the

farmers. For disseminating bean cultivation knowledge to a large number of farmers quickly printed materials also provide accurate, motivating, credible and distortion free information.

In Pabna district, it is seen that unavailability of land is becoming an important issue. Even in cities where agricultural use of land has been accepted and formalized, farming is squeezed by the growth of the city boundaries for residential and commercial purposes. Water shortage is considered as serious problems in some locations. Lack of information about market demands, sudden shortages, and prices is also a limiting factor for urban farmers. When the marketing chain is long, farmers become subject to greater price fluctuations

In Bangladesh bean are cultivated in about 18230.36 ha of lands with production of 110116 metric tons (BBS 2014). A large number of farmers in Pabna districts are now engaged in commercial bean cultivation as the profitable farming has changed the lives of many people in the region. The bean farming area of Pabna districts are 445.34 ha and its productions are 1651 metric tons (BBS, 2014).

Considering the above facts the researcher felt a thrust to conduct a study with a hope to measure extent of use of communication media by the bean farmers.

1.1 To determine and describe some selected characteristics of the bean farmers.

1.2 To determine the extent of use of communication media by the bean farmers.

1.3 To identify the factors that influence use of communication media by the bean farmers.

villages by considering proportionate random sampling procedure. A reserve list of 10 farm families head (about 10% of the sample) was kept purposively if any respondent was unavailable at the time of data collection. The distribution of population and sample was shown in Table 1.

METHODOLOGY

Study area

The study was conducted in four villages under Atgharia upazilla of Pabna district. Two unions of Atgharia Upazilla, namely, Majpara and Chandva were purposively selected as the locale of the study.

Population and Sampling

The Researcher himself with the help of Upazila Agriculture Officer, Local leaders and concerned Sub-Assistant Agriculture Officer (SAAO) was collected an updated list of population of the study. The total numbers of farm families head in the selected villages were 972. According to Yamane’s (1967) formula, sample size was 106 at 9% precision level, 50% degree of variability and the value of the standard normal variable (Z)=1.96 at 95% confidence level(Kabir et al., Alam et al. and Islam et al., 2018). The given formula is stated as:

$$n = \frac{Z^2 P(1-P)N}{Z^2 P(1-P) + Ne^2}$$

Where, n = sample size

N = population size

e = the level of precision

Z = the value of the standard normal variable given the chosen confidence level (e.g. Z = 1.96 with a confidence level 95%)

P = the proportion or degree of variability

The sample was then selected from the four

Table 1. Distribution of population and sample of farmers of the selected villages

Name of the unions	Name of the villages	Population	Sample size	Reserve list
Chandva	Sonjoypur	222	24	2
	Hapania	218	24	2
Majpara	Rokonpur	278	30	3
	Khidirpur	254	28	3
Total		972	106	10

Selection and measurement of variables

In a descriptive social research, selection and measurement of the variable is a momentous task. An organized research usually contains at least two identical elements viz. independent variable and dependent variable. Considering study nature, location of study, time and other logistic support, we selected farmers’ ten characteristics/independent variables for analysis of the study. These are Age, level of education, family size, Farm size, Annual family income, bean cultivation area, Training exposure, Organizational participation, credit received and knowledge on bean cultivation. On the other hand, use of communication media by the bean farmers in the selected areas of Pabna district in Bangladesh was the dependent variable of the study. The

measurement techniques of both independent and dependent variables are discussed as follows.

Measurement of Independent Variables

Age of the farmers was measured in terms of actual years from his birth to the time of interview. Level of education was measured as the ability of an individual respondent to read and write or the formal education received up to a certain standard. It was expressed in terms of year of schooling. The family size was measured by the total number of members in the family of a respondent including him, wife, children and other dependents. Farm size of the respondents was measured as the size of his farm on which he continued his farm practices during the period of the study. Annual family income indicates total earning of a farmer and the members of his family both from agriculture and other socially acceptable regular means such as business, service etc. It was expressed in thousands taka during the previous year. The bean cultivation area of a respondent was measured on the basis of the area on which his family carried out bean cultivation operations. The area of bean cultivation was expressed in hectare. Training on bean cultivation was measured by total number of days of agricultural training received by the respondents` farmer in his/her life. Organizational participation of a respondent was measured by computing an organizational participation score according to his/her nature and duration of participation in nine (9) selected different organizations up to the time of

interview. Credit received refers to the total amount of money (in thousands) received from different sources such as NGO, Banks, Money lender, Friends, Neighbors and Relatives as borrow or a certain rate of interest for a certain period of time. Knowledge on bean cultivation of the farmers was measured on 15 basic open ended questions.

Measurement of dependent variable

Communication media contact was measured as ones extent of contact to different information sources. Each respondent was asked to indicate his nature of contact for each of 10 selected media with five alternative responses was prepared for the respondents. Following scores were assigned for each of 10 media.

Extent of exposure	Scores assigned
0	Not at all
1	Rarely
2	Occasionally
3	Often
4	Regularly

Thus, the communication media scores of bean farmers could range from 0 to 40 where '0' indicated no exposure and 40 indicated very high media exposure.

Collection and processing of data

Individual interviews were used in the survey and were conducted in a face-to-face (Bryman, 2001) situation by the researcher. A well-structured interview schedule (questionnaire) was developed based on the objectives of the study. The schedule contained both open form and closed form questions. The interview schedule was pre-tested with 10 farmers by the researcher. Necessary additions, corrections and modifications were made in the schedule on the basis of the pre-test results. Then final data were collected from the selected 106 farmers with using questionnaire. Questions were asked systematically and explanation was made whenever necessary. The respondents were interviewed at their leisure time so that they can give accurate information in a cool mind. To build rapport and motivation in the interview situations, the researcher endeavoured to provide conditions that maximum trust maintained each respondent's interest and minimized status difference. The final data were collected during 15th December to 15th January, 2018.

After completion of data collection, data were coded, compiled, tabulated and categorized according to the objectives of the study. The entire individual respondent's data were transferred into a master sheet for facilitating the required analysis. Local units were converted into standard units. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form.

Analysis of data

Bogdan and Biklen (2006) insist that data analysis is an on-going part of data collection. Descriptive statistical measures, including number, percentage distribution, range, average, and standard deviation were used. To find out the contribution of identified characteristics on use of communication media by the bean farmers, multiple regression models was used.

The model used for this analysis can be explained as follows:

$$Y_i = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + e$$

Where Y_i is the use of communication media by the bean farmers in the selected areas of Pabna district in Bangladesh; x_1 is their age; x_2 is level of education; x_3 is family size; x_4 is farm size; x_5 is annual family income; x_6 is vegetable cultivation area x_7 is training on bean cultivation, x_8 is organizational participation, x_9 is credit received and x_{10} is knowledge on vegetable cultivation. $b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8, b_9$ and b_{10} are regression coefficients of the corresponding independent variables, and "e" is random error, which is normally and independently distributed with zero (0) mean and constant Variance.

RESULTS AND DISCUSSION

Selected Characteristics of the Farmers

The salient features of the selected characteristics of the farmers like possible and observed range, number and percent distribution, mean, standard deviation and categorisation are presented in Table 2.

Table 2. Distribution of the respondents according to their characteristics

Characteristics	Scoring method	Categories	Percent	Range	Mean	SD
Age	Years	Young (up to 35) Middle (>36-50) Old (above 50)	37.7 42.5 19.8	21-70	41.20	11.07
Education	Years of schooling	Illiterate (cannot read and write) Can sign only (0.5) Primary (1-5) Secondary (6-10) Above secondary	11.3 32.1 13.2 37.7 5.7	0-15	4.37	4.09
Family size	No. of persons	Small family (Up to 4) Medium family (5-7) Large family (above 7)	33.0 46.2 20.8	2-14	5.83	2.29
Farm size	Hectare	Landless farm (< 0.2) Small farm (0.201-.99 Medium farm (1-3) Large farm (above 3)	0.9 67.0 29.3 2.7	0.18-4.11	0.94	0.68
Annual family income	(000) Taka	Low income (up to 120) Medium income (> 120-240) High income (above 240)	34.0 46.2 19.8	44-1150	187.66	140.79
Bean cultivation area	Hectare	Small (up to 0.1) Medium (0.1- 0.35) Large (above 0.35)	11.3 73.6 15.1	0.07-1.33	0.23	0.18
Training On bean cultivation	Days	No training (0) Low training (up to 10) Medium training (above 10)	34.9 46.2 18.9	0-20	5.94	5.54
Organizational participation	Scores	No participation (0) Low participation (up to 8) Medium participation (above 8)	34.9 39.9 25.5	0-15	5.40	4.76
Credit received	(000) taka	No Low (up to 30) Medium (> 30-50) High (above 50)	38.7 25.5 34.0 1.8	0-60	20.75	19.22
Knowledge on bean cultivation	Scores	Low knowledge (up to 17) Medium knowledge (18-21) High knowledge (Above 21)	26.4 54.7 18.9	12- 27	19.20	2.75

Large portion (42.5%) of the farmers were middle aged group while 37.7 percent and 19.8 percent farmers fell in the young and old aged category respectively with an average of 41.20 years. Majority of the farmers (37.7 %) had secondary level of education followed by can sign only (32.1%). A few of (13.2%) the farmers had primary education and (5.7 percent) of farmers had above secondary level with (11.3 percent) of illiterate farmers. However, average

literacy of the respondents was below primary level of education. About half of (46.2 %) farmers maintained medium family compare to small sized (33.0%) while only (20.8 percent) had large family with an average of 5.83. The farm size score ranged from 0.18 to 4.11 hectares with the average being 0.94 hectare. Among the respondents (67.0 percent) Of the respondents were small farmers while (29.3%) of the farmers were medium farmers, (2.7

percent) of the farmers were large and only (0.9 percent) of the farmers were marginal. Farmers' annual income ranged from 44 to 1150 thousands with an average of 187.66 thousands. Among the farmers (46.2%) were in medium income group followed by low (34.0%) income and high (19.8%) income group. Vegetable cultivation area of the farmers ranged from 0.07 to 1.33 hectare with an average of 0.23 hectare of lands. Among the respondents (73.6 percent) of the vegetable farmers had medium vegetable cultivation area followed by large (15.1%) and small (11.3%). Training exposure of the vegetable farmers ranged from 0-20 with an average of 5.94 days. Majority of the vegetable farmers (46.2%) had low training followed by no training (34.9 percent) and medium training (18.9 percent). Organizational participation of the farmers ranged from 0 to 15 with an average of 5.40. About half (39.9%) of the vegetable farmers had low organizational participation, (34.9 percent) had no and (25.5 percent) of the farmers had medium organizational participation. According to the table no 2 credit receive of the vegetable farmers ranged from 0 to 60 thousands with an average of 19.20 thousands. Majority (38.7%) of the farmers did not receive credit while (34.0%) had received medium credit, (25.5% had low and (1.8%) of the farmers had received high credit. Knowledge level of the bean farmers ranged from 12-27 with an average of 19.19. Majority (54.7%) of the farmers had medium level of knowledge while (26.4 percent) had low and only (18.9 percent) of the vegetable farmers

had high level of knowledge.

Use of communication media by the bean farmers

Use of communication media by the bean farmers was the dependent variable of this study. Use of communication media by the bean farmers was measured by computing communication scores according to extent of implementing communication media to cope with each of 10 selected items in bean cultivation. Use of communication media by the bean farmers range from 8 to 32 against the possible range of 0 to 40 with the mean and standard deviation of 17.89 and 4.49 respectively. On the basis of use of communication media scores, the respondents were classified into three categories namely, low, medium and 'high media contact. The distribution of the respondents according to communication media under the study is given in Table 3.

Table 3. Distribution of the farmers according to use of communication media by the bean farmers

Categories (scores)	Respondents farmers		Mean	Standard deviation
	Number	Percent		
Low (up to 13)	14	13.2	17.89	4.49
Medium (> 13-21)	71	66.9		
High (above 21)	21	19.9		
Total	106	100		

Table 3 indicates that among the respondents the highest (66.9 percent) vegetable farmers belongs to the group of medium communication media in bean cultivation and the lowest percent (13.2%) in low communication followed by high communication (19.9%) of the bean

farmers in bean cultivation. Overwhelming (86.8%) of the bean farmers had medium to high use of communication media.

The Contribution of the selected characteristics of the respondents to their use of communication media by the farmers in bean cultivation

The contribution of the selected characteristics of the respondents to their use of communication media in bean cultivation has been shown in Table 4. Success of a research to a considerable extent depends on the successful selection of the variables. Irrational, inappropriate and inconsistent selection of variables may lead to misleading and unfruitful results. The researcher keeping all these in mind took adequate care in selecting the variables of the study. Moreover, the researchers visited the study

area several times and talked to the bean cultivation farmers intimately. Therefore, based on knowledge about dependent variable. To identify the significant factors, stepwise multiple regression analysis was done. The output of the analysis reveals that out of 10 variables four namely level of education, knowledge on bean cultivation, training on bean cultivation and organizational participation were significant. Among these four variables, knowledge on bean cultivation was significant at 1% level of confidence and the rest three variables were significant at 5% confidence level (Table 4). Moreover, the stepwise regression model showed that four significant variables explained about 56.6% variation of the model (Table 5). From the result it can be said that the data as well as the selection of analysis was appropriate.

Table 4. Stepwise multiple regression coefficients of the contributing variables related to their use of communication media by the bean farmers

Variables	Unstandardized coefficients		Standardized Coefficients	t	Sig
	B	Std. error	Beta		
Education	.252	.097	.247	2.611	.010
Knowledge on bean cultivation	.371	.109	.267	3.413	.001
Training on bean cultivation	.176	.070	.239	2.517	.013
Organizational participation	.177	.086	.185	2.061	.042

Table 5, Summary of the use of communication media by the bean farmers

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654 ^a	.427	.422	3.728
2	.716 ^b	.512	.503	3.457
3	.752 ^c	.565	.552	3.281
4	.763 ^d	.582	.566	3.230

- a. Dependent Variable: contact
- b. Predictors: (Constant), education
- c. Predictors: (Constant), education, knowledge
- d. Predictors: (Constant), education, knowledge, training
- e. Predictors: (Constant), education, knowledge, training, organization

The majority of the farmers were in medium to high use of communication media by the bean farmers though about only 13.2% of the farmers were in low use of communication media group. This means that the use of communication media by the bean farmers is not satisfactory level while still there is a scope to improve the scenario. Level of education knowledge on bean cultivation, training on bean cultivation and organizational participation were significantly influenced the farmers in use of communication media bean cultivation.

It was revealed from the analysis that education of the farmers was positive and significantly contributed (significant at 5% level, $p < 0.010$) with the use of communication media by the farmers on bean cultivation. This finding means that increase of level of education of the farmers will also increase their use of communication media by the farmers in bean cultivation. The finding is similar with the study of Hossain (2002), Salam (2003) and Bhuiyan (2002).

It was revealed from the analysis that knowledge on bean cultivation of the farmers was positive and significantly contributed (significant at 1% level, $p < 0.01$) with the use of communication media by the farmers in bean

cultivation. This finding means that increase of knowledge of the farmers will also increase their use of communication media. The finding is similar with the study of Ali (1999), Haque (2006) and Basher (2006).

he contribution of training on bean cultivation was positive and significant which indicates that the higher the training on bean cultivation the higher the use of communication media. This was the highest important factors influencing use of communication media in bean cultivation (Table 4). Basher (2006) and Ahmed (2002) also found similar results. During the discussion, the bean farmers mentioned that they had gained more knowledge and skills in the use of practices by attending the training program.

Data presented in Table 4 revealed that organizational participation of the farmers was positive and significantly contributed (significant at 5% level, $p < 0.042$) with their use of communication media. This finding indicated that farmers' have more organizational participation will increase use of communication media by the farmers in bean cultivation. The finding is similar with the study of Rahman (2006), Aziz. (2006) and Nahid (2005).

CONCLUSION AND RECOMMENDATIONS

The study was conducted in a region where the farmers cultivated huge amount of bean. An overwhelming majority (86.8%) of the farmers had medium to high use of communication media. The farmers were also influenced by communication media contact in bean cultivation. It was likely that farmers with high communication media contact exposure more information of farm affairs which strengthened the base of their bean cultivation knowledge. Such knowledge was probably conducive to motivate the farmers toward use of communication media which helped the farmers in bean cultivation. The contribution of training was positive and significant which indicates that the higher the training exposure the higher the use of communication media in bean cultivation. In fact, training program (FFS) is conducted under IPM promotion project and they provide in-depth training on bean cultivation. During the discussion, the bean farmers mentioned that they had gained more knowledge and skills in the use of communication media by attending the training program. As it had a significant contribution, knowledge on vegetable cultivation increases the outlook of the farmers which make to increase use of communication media in bean cultivation. Therefore, it can be recommended that initiative should be taken by the DAE with the help of other relevant organizations to increase these facilities (significant factors) to improve the scenario regarding to use of communication media by

the bean farmers. Organizational participation had highest contribution to their bean cultivation. It also showed that majority of the respondents had lower organizational participation. The result concluded that establishment of more organization and farmers involvement will increase the use of communication media by the farmers in bean cultivation. . High literacy and educational level among the farmers influenced higher cultivation practices which able the farmers higher the use of communication media in bean cultivation since level of education of the farmers proved as an important contributing factor. Effective steps should be taken by the Department of Agricultural Extension (DAE) and Non-Government Organizations (NGOs) for strengthening the farmers' qualities in favour of bean cultivation to a higher degree for their use of communication media. It can be done by increasing organizational participation, enhancing educational level of bean farmers, imparting sound knowledge about bean cultivation etc. Extension worker and other concerned authorities should provide supports to fulfil the above mentioned recommendations as well as motivating farmers to enhance their bean cultivation knowledge and also their organizational participation.

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