PROBLEMS CONFRONTED BY UPAZILA LEVEL EXTENSION PERSONNEL IN RECEIVING AND DISSEMINATING TECHNOLOGICAL INFORMATION

BY

ARAFAT HOSSAIN

REG. NO. 08-03248

A thesis
Submitted to the Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University, Dhaka
In partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE (MS)
IN
AGRICULTURAL EXTENSION AND INFORMATION SYSTEM

SEMESTER: JANUARY-JUNE, 2011

APPROVED BY:

Prof. M. Zahidul Haque
Supervisor
Agricultural Extension and Information System
SAU, Dhaka

Prof. Dr. Md. Sekender Ali
Co-Supervisor
Agricultural Extension and Information System
SAU, Dhaka

Prof. Dr. Md. Sekender Ali
Chairman
Examination Committee

DEPARTMENT OF AGRICULTURAL EXTENSION AND INFORMATION SYSTEM
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207

Memo No: SAU/

CERTIFICATE

This is to certify that the thesis entitled **"Problems Confronted by Upazila Level Extension Personnel in Receiving and Disseminating Technological Information"** submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **Master of Science in Agricultural Extension and Information System**, embodies the result of a piece of bona fide research work carried out by **Arafat Hossain**, Registration No. **08-03248** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that any help or source of information, received during the course of this investigation has been duly acknowledged.

Dated:
Dhaka, Bangladesh

Prof. M. Zahidul Haque
Supervisor
Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207

DEDICATED
TO
MY BELOVED PARENTS

ACKNOWLEDGEMENTS

All praises to Almightly and Kindfull trust on to "Omnipotent Creator" for His never-ending blessing, the author deems it a great pleasure to express his profound thankfulness to his respected parents, who entiled much hardship inspiring for prosecuting his studies, receiving proper education.

The author deems it a proud privilege to express his deep sense of appreciation and immense thanks to his supervisor M. Zahidul Haque, Professor, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, for his continuous support, cooperation, constructive criticism and helpful suggestions, valuable attitude in carrying out the research work and preparation of this thesis, without his intense co-operation this work would not have been possible.

The author feels proud to express his deepest respect, greatefulness and immense gratitude to his co-supervisor, Dr. Md. Sekender Ali, Professor, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, for his scholastic and incessant guidance, creative criticism and valuable suggestions during the entire period of the course and the research work and preparation of this thesis.

The author expresses his sincere respect to the Profsessor, Dr. Md. Rafiquel Islam, Chairman, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka and all the teachers of the Department of Agricultural Extension and Information System, SAU, for their valuable teaching, suggestions and support throughout the period of the study.

The author expresses his sincere gratitudes to his brother, sisters, relatives, well wishers and friends for the inspiration, help and encouragement they extended during the entire period of the study.

The Author

TABLE OF CONTENTS

CHAPTER	TITLE	Page
	ACKNOWLEDGEMENTS	**i**
	TABLE OF CONTENTS	**ii**
	LIST OF TABLES	**iv**
	LIST OF FIGURES	**v**
	LIST OF APPENDICES	**v**
	ABSTRACT	**vi**
1.	**INTRODUCTION**	**01**
	1.1 General Background	01
	1.2 Statement of the Problem	04
	1.3 Specific Objective of the Study	05
	1.4 Justification of the Study	05
	1.5 Scope of the Study	06
	1.6 Assumptions of the Study	06
	1.7 Limitation of the Study	07
	1.8 Definition of Terms	08
2.	**REVIEW OF LITERATURE**	**11**
	2.1 Problem confrontation in different aspects of innovation	11
	2.2 Characteristics of change agent	13
	2.3 Reliability of communication sources	16
	2.4 Source of information and dissemination	20
	2.5 Correlates of information sources	22
	2.6 Conceptual framework	23
3.	**METHODOLOGY**	**24**
	3.1 Locale of the study	25
	3.2 Population and sample of the study	25
	3.3 The research instrument	25
	3.4 Data collection procedure	26
	3.5 Measurement of Variables	26

CHAPTER	TITLE	Page
	3.6 Measurement of independent variable	27
	3.7 Measurement of dependent variable	31
	3.8 Hypothesis of the study	32
	3.9 Collection of data	32
	3.10 Data processing	32
	3.11 Data analysis	33
4.	**RESULTS AND DISCUSSION**	**34**
	4.1 Characteristics of the respondents	34
	4.1.1 Academic accomplishment	34
	4.1.2 Training exposure	35
	4.1.3 Social movement	36
	4.1.4 Job satisfaction	37
	4.1.5 Job performance	38
	4.1.6 Use of communication media	38
	4.1.7 Group communication	39
	4.1.8 Mass media communication	40
	4.2 Problems confronted by upazila level extension personnel in receiving and disseminating technological information	41
	4.3 Relationship of selected characteristics of the upazila level extension personnel and problems confronted by them in receiving and disseminating technological information	42
5.	**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**	**50**
	5.1 Summary of Major findings	50
	5.2 Conclusions	51
	5.3 Recommendations	52
	BIBLIOGRAPHY	**54**
	APPENDIX	**60**

LIST OF TABLES

	Title	Page
Table 4.1.	Distribution of extension personnel at upazila level according to their academic accomplishment	35
Table 4.2.	Distribution of extension personnel at upazila level according to their training exposure	36
Table 4.3.	Distribution of extension personnel at upazila level according to their social movement	36
Table 4.4.	Distribution of extension personnel at upazila level according to their job satisfaction	37
Table 4.5.	Distribution of extension personnel at upazila level according to their job performance	38
Table 4.6.	Distribution of extension personnel at upazila level according to their use of group communication	39
Table 4.7.	Distribution of extension personnel at upazila level according to their group communication	39
Table 4.8.	Distribution of extension personnel at upazila level according to their mass media communication	40
Table 4.9.	Distribution of the upazila level extension personnel according to the problems confronted in receiving and disseminating technological information	41
Table 4.10.	Results of Pearson's product moment correlation showing the relationship between the selected characteristics of the upazila level extension personnel and problems confronted by them in receiving and disseminating technological information	42

LIST OF FIGURE

	Title	Page
Figure 2.1.	The conceptual framework of the study	24

LIST OF APPENDIX

	Title	Page
Appendix I.	An interview schedule for the study	60
Appendix II.	Correlation Matrix	65

PROBLEMS CONFRONTED BY UPAZILA LEVEL EXTENSION PERSONNEL IN RECEIVING AND DISSEMINATING TECHNOLOGICAL INFORMATION

ABSTRACT

The objective of this study was to determine the relationship between selected characteristics of the upazila level extension personnel and problem confronted by them in receiving and disseminating technological information. Extension personnel at upazila level all over Bangladesh were assumed to be the population of the study. There were 1449 upazila level agricultural officers in Bangladesh which constituted the population of the study. Preliminary mailed questionnaire were sent to 363 upazila level officers taking 25% of the population. But only 112 upazila level agricultural officers returned the questionnaire in time. So, these 112 upazila level agricultural officers constitute the final sample of the study. Data collection was started in January and completed in March, 2012. Considering problems confronted by upazila level extension personnel in receiving and disseminating technological information, majority population (71.43 percent) of the upazila level agricultural officers belong to the group of medium level problem confrontation followed by 16.96 percent in high problem and 11.61 percent in low problem confrontation. Training exposure, job performance and use of communication media of the upazila level agricultural officers had significant negative relationship with their problems confrontation in receiving and disseminating technological information.

CHAPTER 1

INTRODUCTION

1.1 General Background

Bangladesh is predominantly an agricultural country. Agriculture is the main occupation of the people employing 51.7 percent of the labor force. This sector directly contributes 21.91 percent of the Gross Domestic product (BBS, 2009). Agriculture supplies raw material for industry and food stuff for human and animal consumption. Crop production of Bangladesh needs to be maximized in order to meet the increasing food demand and other basic requirements which mainly depends on the extension personnel at upazila level who exchange ideas of agricultural technology maintaining both top down and bottom up communication i.e. they communicate with farmers, subordinates and their super ordinates. They also visit farmers' field to know their problem and to transfer the knowledge of new technology. When a new technology is evolved, the best methods to transfer technology to the farmer level are method demonstration and result demonstrations. Printing materials (poster, leaflet, bulletins) distribution to the farmers is one of the effective way to disperse innovation and information. Extension programs concentrate on meeting the needs of farm households in particular and help them to solve the key technical problems they face in farming and homestead activities. Most extension messages and activities are based on needs, problems that are identified at farm level.

In the context of agriculture and rural development, extension agent is the communicator who starts the process of communication. The extension agents obtain the required information from research and carry it to the audience, the farmers (Ray, 1990). The credibility of the communicator and the organization and the individual represents is important for receiving and disseminating technological information. The scientists and extension agents having status, expertise, accomplishment, authority and experience are perceived as highly credible by the farmers in communicating information on agricultural technology.

There are many agencies which provide extension support to the rural people of Bangladesh. These include government agencies, for example, the Department of Agricultural Extension, Bangladesh Rural Development Board, Bangladesh Water Development Board, Bangladesh Agricultural Development Corporation, Forestry Department, Directorate of Livestock Services and Directorate of Fisheries. The Department of Agricultural Extension (DAE) is the largest public sector extension agency in the country and is responsible for all the aspects of crop production. The main function of DAE is the transfer of technologies evolved in the research station along with education, training and motivation through extension personnel. The success of technology transfer largely depends upon how the DAE maintains public relations and how the public held attitudes towards the activities of DAE. To evolve better approach the DAE organized and reorganized several times.

There were many appreciable elements in T& V system which allowed DAE personnel to come in contact with farmers and vice-versa. The mentionable elements were (i) contact farmers (ii) 14-days work schedule (iii) intensive visit and (iv) intensive training. Intensive training and visit & 14-days work schedule channelized extension service to the door step of farmers. However in the beginning of the decade of ninety NAEP (New Agricultural Extension Policy) was introduced with REA (Revised Extension Approach). It had specific mission which is "to provide efficient and effective needs based extension services to all categories of farmers, to enable them to optimize their use of resources, in order to promote sustainable agricultural and socioeconomic development". To meet up demand appropriate extension methodology supports the principle of use of a wide range of different extension methods. The extension methods are: farm and home visit, farm walks, farmers rallies, result demonstration, method demonstration, group meetings, field days, motivational tours, districts and thana fairs, folk media, training days, farmer field school, radio, newspaper, print media and audio visual aids etc. All of theses methods are used in receiving and disseminating technological information related to agriculture.

The upazila level is the basic unit for planning, implementing, monitoring, and evaluating local extension programs. Extension personnel at upazila level such as Upazila Agricultural Officer (UAO), Agricultural Extension Officer (AEO), Assistant Agricultural Extension Officer (AAEO) and Sub Assistant Agricultural Officer (SAAO) are the grassroots level workers of DAE. They are directly communicating with the rural people. The success of extension service of DAE largely depends on extension personnel at upazila level in relation with receiving and disseminating technological information. So it is very important for extension personnel at upazila level to receive technological information and ensure dissemination of these information facing minimum problem.

Viewing the role of extension service performed by DAE, it is apprehensive that its extension personnel at upazila level have good interaction with the rural people creating and sharing technological information about agriculture and its dissemination. But in many cases the DAE personnel face different problem in relation to receiving and disseminating technological information properly. In reality the extension personnel at upazila level can play a vital role in accelerating technological, social and economical development of the country through receiving and disseminating technological information. The extension personnel must know the target, needs, interests, resources, facilities, constraints regarding receiving and disseminating technological information. The communicator should, therefore, be careful in selecting message which are relevant to the audience, choose channels compatible to their cultural pattern and make treatment of the message appropriate to their levels of interest and understanding. Every extension officers has specific duties and responsibilities and they perform these for the sake of organizational development and the nation by receiving and disseminating technological information. But very few studies was conducted on their problem in receiving and disseminating technological information. So the researcher is keenly interested to conduct study entitled: "Problems Confronted by Upazila Level Extension Personnel in Receiving and Disseminating Technological Information".

1.2 Statement of the Problem

Upazila Agriculture Officers, Additional Agriculture Officers, Extension Officers work in Upazila Agricultural Offices. They are responsible extension personnel at upazila level for information dissemination related to agriculture. In fact, receiving information and its dissemination by extension personnel at upazila level in Bangladesh is an essential element for the development of agriculture of Bangladesh. Exposure to information pertaining to different aspects of agriculture is very essential for the farmers as Kashem and Halim (1991) found, "Contact with source of information is a pre-condition to receive information and the use of technology in real situation". Technology generation and its adoption are very much of paramount importance for the improvement of agricultural production in Bangladesh condition. To expand the cultivation of modern and high yielding crop in the country, receiving information and its dissemination by extension personnel at upazila level would be significantly contributory to design appropriate programs for widespread development of agriculture. In this regard, the answers to the following questions were supposed to be very much pertinent:

1. What are the problems confronted by upazila level extension personnel in receiving and disseminating technological information?
2. What are the characteristics of upazila level extension personnel?
3. What relationship does exist between the selected characteristics of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information?

The above mentioned questions obviously inspired the researcher for conducting a research study entitled "Problems Confronted by Upazila Level Extension Personnel in Receiving and Disseminating Technological Information".

1.3 Specific objectives of the study

1. To determine and describe the problems confronted by upazila level extension personnel in receiving and disseminating technological information

2. To determine and describe the following selected characteristics of upazila level extension personnel:

    i. Academic accomplishment

    ii. Training exposure

    iii. Social movement

    iv. Job satisfaction

    v. Job performance

    vi. Use of communication media

    vii. Group communication

    viii. Mass media communication

4. To explore the relationship between the selected characteristics of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information.

1.4 Justification of the Study

To increase agricultural production it is necessary to get information by the farmers related to new technology. Now considerable effort is being made through research and extension delivery system to increase agricultural production in our country. But the actual increase in production will depend on the problems confronted by upazila level extension personnel in receiving and disseminating technological information. The problems confronted by the upazila level extension personnel in receiving and disseminating technological information is influenced by their personal, economic, social and psychological characteristics.

Exposure to information pertaining to different aspects of agricultural production is very essential for the farmers. Technology generation and its adoption are very much important for successfully practicing innovative technology for agricultural cultivation. At this end, the extension personnel at upazila level need to come in contact with various information sources for receiving information for dissemination new and improved agricultural related technology.

But only a few researches home and abroad have conducted on this fundamental research topic. Considering the above facts in view and the practical usefulness of it researcher has become keenly interested to undertake the present research entitled- "Problems Confronted by Upazila Level Extension Personnel in Receiving and Disseminating Technological Information".

1.5 Scope of the Study

The main focus of the study was to determine the problems confronted at upazila level extension personnel in receiving and disseminating technological information. The findings of the study would be specifically applicable to Bangladesh context. The investigator believes that the findings of the study would reveal the phenomenon related to problem confronted for diffusion of innovation. These would be of special interest to the policy makers and planners in formulating and redesigning the extension programs especially for upazila level extension personnel. The findings are expected to be helpful to the field workers of different nation building departments and organizations to develop appropriate extension strategies for effective way for collecting information of modern agricultural innovations.

1.6 Assumptions of the Study

An assumption is the supposition that an apparent fact or principle is true in the light of available evidence (Goode and Hatt, 1952). The researcher had the following assumptions in mind while undertaking this study:

1) The extension personnel at upazila level included in the sample were capable of providing proper answer to the questions exerted in the interview schedule.

2) Data collected through mailed questionnaire were free from bias.
3) The responses furnished by the extension personnel at upazila level were reliable and realistic.
4) Views and opinions furnished by respondents included in the sample were representative views about the problems confronted by upazila level extension personnel in receiving and disseminating technological information.
5) The respondents were more or less conscious about the problems confronted in receiving and disseminating technological information.

1.7 Limitations of the Study

Considering the time, money and other necessary resources available to make the study manageable and meaningful, it was necessary to consider the following limitations:

1. The study was confined mainly to problems confronted by extension personnel at upazila level in receiving and disseminating technological information.
2. The study was administered all over Bangladesh but there were some extension personnel at upazila level who could not provide any information on the issue.
3. The characteristics of extension personnel at upazila level are many and varied but only 8 characteristics were selected for investigation in this study.
4. Population of the study includes only the extension personnel at upazila level.
5. The researcher was dependent on the data furnished by the extension personnel at upazila level.
6. The sample of population was drawn from only the returned filled up questionnaire.

1.8 Definition of Key Terms

Certain terms had been used in this research which were defined and interpreted as follows for clarity of understanding.

Respondents

Randomly selected people considered to be representable of the population of the study for a social survey are known as respondents. They are the people from whom a social research worker usually gets most data required for his research. In this study the respondents were the extension personnel at upazila level.

Variable

A variable is something which varies. More specifically, variables are those attributes of objects, events, things and beings which vary and can be measured. In other words variables are the characteristics or conditions that can be observed, manipulated or controlled by the researcher. Some of the characteristics of extension personnel at upazila level are academic accomplishment, training exposure, social movement, job satisfaction, job performance, use of communication media, group communication and mass media communication.

Assumption

An assumption is "The supposition that an apparent fact or principle is true in the light of the available evidence" (Goode and Hatt, 1952).

Hypothesis

Defined by Goode and Hatt (1952), a proposition this can be put to "a test to determine its validity". It may be true or false, it may seem contrary to or in accord with common sense. However, it leads to an empirical test.

Null hypothesis

The hypothesis which we pick for statistical test is null hypothesis (Ho). In this study the null hypothesis is stated that there is no relationship between the concerned variables.

Innovation

An innovation is an idea or practice perceived as new by the individual. It is the newness of the idea to the individual that determines his reaction to it.

Communication

Van den Ban and Hawkins (1988) defined communication as the process of sending and receiving message through channels which establishes common meaning between a source and a receiver.

Extension personnel at upazila level

The people who perform their jobs in upazila level under DAE are known as extension personnel at upazila level such as Upazila Agricultural Officer (UAO), Additional Upazila Agricultural Officer (Adl. UAO), Agricultural Extension Officer (AEO), Assistant Agricultural Extension Officer (AAEO) and Sub Assistant Agricultural Officer (SAAO).

Academic accomplishment

Academic accomplishment for adults can be defined as types of education that involves attainment of credit in a number of courses, is systematic and cumulative & leading to a certificate, a diploma or a degree. In this study academic achievements are solely concerned with extension personnel at upazila level.

Training exposure

Training exposure referred to organized instruction aimed at improving knowledge, skill and attitude of upazila extension officer that they can perform his/her functions more effectively. It referred to number of days the respondents received training in different aspects of agriculture from home and abroad.

Social movement

Social movement means the extent of mobility by the extension personnel at upazila level.

Job satisfaction

Job satisfaction means the extent of satisfaction or displeasure or frustration derived by an individual with his or her job content and environment of work. The

degree of satisfaction of extension personnel related to the various aspects of their job such as accomplishments in job, supervision advancement opportunity, and scope for using personal initiative, pay and enjoyment from works.

Job performance

Job performance means the degree to which the respondent accomplished and completed his task efficiently and effectively at upazila level as extension personnel.

Use of communication media

Use of communication media means what type of communication media used by what extent by extension personnel at upazila level for their individual communication for performing day to day responsibilities.

Group communication

The extension personnel at upazila level communicate with the people in groups and not as individual persons. Example: group meeting, small group training, field day or farmers' day, study tour etc.

Mass media communication

The extension personnel at upazila level communicate with a mass of people, without taking into consideration their individual or group identity. Example: mass meeting.

Problem confrontation

In means that which problems or difficulties faced in what extent by the upazila level extension personnel due to receiving and its disseminating technological information.

Individual contact

The extension personnel at upazila level communicate with the people individually, maintaining separate identity of each person. Example: farm and home visit, farmer's call, personal letter etc.

CHAPTER 2

REVIEW OF LITERATURE

This chapter deals with the review of past research works that relates to this investigation directly or indirectly. Despite frantic search, the researcher found only a few literature related to this study. The researcher came across with some expert opinions and has tried his best to collect needful information through searching relevant studies, journals, periodicals, bulletins, leaflets, internet etc. These enhanced the researcher's knowledge for better and clear understanding of the present study. This chapter has been presented in five sections as follows:

Section 2.1: Problem confrontation in different aspects of innovation

Section 2.2: Characteristics of change agent

Section 2.3: Reliability of communication sources

Section 2.4: Sources of information and dissemination

Section 2.5: Correlates of information sources

Section 2.6: Conceptual framework of the study

2.1 Problem confrontation in different aspects of innovation

Alam (1981) investigation revealed six facts about the existing problems of marketing of potato in Dhaka city which are a) lack of efficient transport b) lack of storage facilities c) improper grading d) dominance of whole sellers e) lack of proper market information and f) lack of adequate finance.

Marothia (1983) reported that the constraints in the adoption of paddy technologies in two villages in Raipur Block, Madhaya Pradesh, India. The findings revealed that the majority of farmers still adopt a partial package of recommendations, mainly due to the high cost of inputs, financial limitations and risk of crop failure. Inadequate supportive input-facilities were found to be responsible for the low adoption a paddy technology.

Arya and Shah (1984) identified five problems: i) small and skewed distributed holdings; ii) fragmented and scattered holdings; iii) shortage of lobour; iv) lack of availability of inputs and funds; v) lack of education, extension and training especially for women.

Raha *et al.* (1986) identified some common problems of cotton cultivation as perceived by the farmers in Bangladesh. Those were lack of suitable land, lack of irrigation facility, shortage of labour, shortage of cash money, lack of technical knowledge, lower price of cotton, and non-availability of seed, insecticides, and fertilizers.

Zinyama (1988) conducted a relative observation and found that the farmers perceptions of the constraints against increased crop production in the subsistence communal farming sector. Five of the most frequently cited constraints were: (i) lack of money with which to purchase seasonal agricultural inputs, particularly fertilizers, (ii) lack of basic farming implements, notably the ox-driven single furrow plough, (iii) lack of draught cattle and (iv) inadequate arable land, and (v) inadequate family labour for agriculture work.

Kher and Halyal (1988) administered a research work to identify the constraints in adoption of sugarcane production technology. The most important constraints identified regarding the adoption of improved sugarcane production technology were an irregular and insufficient electricity supply, small size of holding for green manuring, inconvenience of inter cropping due of location specific recommendations for earthing up, lack of drought resistant varieties and lack of technical knowledge about plant protection and chemical fertilizers.

Chander *et al.* (1990) in their study identified constraints in potato cultivation. Main constraints were ignorance about time and number of irrigation, ignorance about scientific method of showing, lack of guidance of marketing of potato, high cost of improved cultivars, high cost of fertilizers, pesticides and irrigation, lack of enough space for storing potatoes scientifically and so on.

Biswas (1992) reported that farmers faced problems in cotton cultivation. Non-availability of quality seed in name, unfavorable and high cost of fertilizers and insecticides, lack of operating capital, nor getting fair weight and responsible price according to grade, effects of cattle in cotton field, lack of technical knowledge, lack of storage facility, stealing from field at maturity stage, and late buying of raw cotton by Cotton Development Board were identified as major problems of cotton farmers in Jessore district.

Faroque (1997) found that female rural youth in Bhaluka (Mymensingh) lacked cash for buying seeds, seedlings and fisheries and deprived of necessary knowledge in improved vegetable cultivation. He further added that the majority of female rural youth faced very high (54%) problems.

Muttaleb *et al.* (1998) revealed that among different constraints high fertilizer cost, high seed cost, lack of quality seed, lack of awareness, lack of technological knowledge and low price of potato at harvest period were perceived as barriers for the adoption of potato technologies.

Pramanik (2001) made an extensive study on twenty four problems of farm youth in Mymensingh villages relating to different problems in rank order were: i) local NGO take high rate of interest against a loan, ii) lack of agricultural machinery and tools, iii) lack of cash and iv) financial inability to arrange improved seeds, fertilizers and irrigation.

2.2 Characteristics of change agent

2.2.1 Academic accomplishment

Mahboob *et al.* (1978) found that the highest proportion (58 percent) of the union Assistants had Matriculation level education, while 30 percent had education below Matriculation level and 12 percent above Matriculation level.

Huque (1986) found that 93 percent of Filipino change agents had education at the bachelors level, 4 percent had above that level and only 3 percent had at the Secondary level, the letter being equivalent to SSC in Bangladesh.

Paderes (1979) found in their respective studies that majority of the extension workers had at least 10 years of schooling and reported that 57 percent of the farm management technicians (FMTs) did not have college degree and only 25 percent of the technicians had finished from 11 to 14 years schooling.

Rahman (1991) in his study observed that academic merit score of the Block Supervisors ranged from 4 to 58, with a mean of 32. The respondents were classified into three categories on the basis of their academic merit score. The highest proportion (52 percent) of the respondents had very good merit (scores of 32 and above) followed by 34 percent of poor merit (score upto 19) and 14 percent of good merit (scores of 20 to 31).

Mahboob *et al.* (1978) showed that the proportion of Union Assistants having medium academic achievement was the highest (41 percent) followed by 23 percent of high achievement 21 percent of no achievement and 15 percent of low achievement.

2.2.2 Training exposure

Rahman (1991) observed that 73 percent of the Block Supervisors had attended training in short duration followed by 16 and 4 percent of the BSs who attended to moderate and long duration of training. Total 7 percent of respondents had never attended any training courses.

Ayaso (1978) revealed that HMTs had up-to-date in service training in the areas of their job each having eight training within a six-year period.

Gapuz (1980) found that his FMTs, on the average, had attended two training during the last three years for 19 days, mostly in crop production.

2.2.3 Social movement

Mahboob *et al.* (1978) observed that social movement scores of the union assistants toward extension organization ranged from 2 to 40 with an average of 25. The scores could range theoretically from 0 to 48. However, it was indicated that almost two fifth (38 percent) of the union Assistants were unfavourable toward extension organization and 6 percent were neutral in social movement. Just half (50 percent) of the union Assistants had favourable social movement compared to 6 percent who had high favourable social movement. These meant that almost half (44 percent) of the union Assistant had unfavourable or neutral social movement toward extension organization.

Rahman (1991) found that social movement scores of the Block Supervisors toward T & V system ranged from 23 to 47 with an average of 36. The scores could theoretically range from 12 to 60. However, it was indicated that 34 percent of the subjects had unfavourable social movement (scores upto 35).

2.2.4 Job satisfaction

Kashem *et al.* (1994) focused on the Block Supervisors roles, perception and job satisfaction revealed that about two thirds (64 percent) of the respondents were highly satisfied in their job.

Islam *et al.* (1986) carried out a survey on job satisfaction of the council officials of Barangay where they found that majority (68 percent) of the respondents were moderately satisfied while 11 percent highly satisfied and the same proportion slightly dissatisfied.

2.2.5 Job performance

Kashem *et al.* (1994) focused on the Block Supervisors roles, perception and job performance revealed that about 51 percent of the respondents showed high job performance.

Mahboob *et al.* (1978) showed that the proportion of Union Assistants having high job performance was the highest (58 percent) followed by 21 percent of high job performance.

2.2.6 Media communication

Rahman (1991) observed that Block Supervisors exposure to newspaper ranged from 6 to 90 issues in a month, the average exposure level was 45 issues. Fourteen percent of the subjects were exposed to low (1-15 issues), 25 percent to moderate (16-30 issues) and 61 percent to high (over 30 issues) level.

Lazo (1963) reported that mass media have been used by the Municipal extension workers to a considerable extent.

Juliano (1981) observed that the technologists of Cagayan province seldom saw the agricultural publications and a few of them claimed to have read, but only some of those were especially exposed to mungo publication. A little over half of them read something within two years prior to data collection.

Mabesa (1980) showed that only 3 and 15 percent technicians were exposed to scientific journal to "very often" and "often" respectively and 11 and 30 percent to other agricultural publications, in that order of intensity.

2.3 Reliability of communication sources

Credibility studies of various sources have been reviewed in this section. Also studies with some relevancy to credibility of sources have also been reviewed because of lack of exact literature.

Sangha and Gupta (1985), in their study of credibility of television as a source of information, observed that television was considered as the most credible source of information for agriculture by the rural TV viewers. It was followed by the Agricultural University, radio, Block Extension staff, relatives, friends and neighbors.

Swamy (1978) in an Indian study found that farmers attributed high credibility to Gramsevak as sources of information. Other credible sources in descending order were neighbors, village leaders, progressive farmers and friends, respectively.

Patil (1982) observed that among the various sources of information consulted by the Bidi tobacco growers, the Agricultural Assistant was the most consulted source of information followed by progressive farmers, friends, neighbors and radio.

Raut (1974) found that village level worker was the most important source for securing agricultural information. Neighbors and friends were the major sources and cooperative society played a dominant role in giving information.

Gupta (1980) study of "use of communication media by village level workers" observed that village level workers had top credibility for field trips followed by transistor sets for transferring agricultural technology to farmers.

Babu and Sinha (1985) observed that the credibility accorded to the sources of information by the extension personnel in terms of both trustworthiness and expertness were the scientists as the most credible source out of the four sources. The credibility of the remaining three sources in descending order was superior officers, Extension literature and radio.

Singh and Jha (1965) reported that the village level workers were the most important source of information source of information in all stages of adoption because of having access to farmers.

Sing and Prasad (1974) observed that progressive farmers ranked the village level worker with highest credibility. On the other hand, non-progressive farmers stated demonstration as the most credible with village level worker as the second.

Girianadhar (1977) conducted a study on relative source credibility and information seeking patterns of farmers. He found that Gramsevok was the most

credible source in the areas of soil management, improved seeds, fertilizers and protection compared to neighbours, friends and mass media.

Sivaramakrishnan (1976) observed that farmers rated formal personal sources as most credible, followed by radio, other farmers, newspaper, farm information Bureau and college of Agriculture in that order of the scale.

Angadi (1984) found that Jowar farmers perceived Agricultural Assistants was the most credible source of information followed by neighbours and friends, radio, progressive farmers and self experience

Hossain (1990) conducted a study on dissemination of information and training for farm housewives. They found that the percentage of housewives having considered extension workers, radio and television as credible were 39, 27 and 4, respectively.

Ismail (1979) found that the sources of information perceived credible by the farmers differed with the specific type of message. The most credible sources for health, agriculture and education were midwives and nurses extension agent, and school teacher, respectively.

Karim (1974) in an American study found that neighbour and friend were the most credible source to the cotton farmers followed by agricultural magazine, result demonstration, meeting field tour, method demonstration, farm and home visit and other 12 sources.

Hovland and Weiss (1951) observed that the effectiveness of sources in communicating developmental information to the rural people depend on the people's perception of the credibility of these sources. A source that is perceived to be credible by the people will be more effective in persuasion.

Torres (1980) found that the top four communication media considered credible by the coconut farmers in descending order were radio, personal sources, television and magazine.

Orozco (1970) found that 94 and 1 percent of the respondents perceived the DTRI and UPCA dairy specialist as highly credible and low credible, respectively.

Huque (1982) in a Philippines study found that masagana-99 farmers attributed highest rank to extension agent. Ranks of other sources in descending order were those of neighbour and relative, community leader, radio, commercial dealer, extension publication, demonstration, magazine, television and newspaper.

Cruz (1964) reported that the percentage of respondents having considered barrio persons, radio, printed media as credible were 60, 37 and 15 respectively.

Wite (1961) reported that his agents ranked the five source media on importance by placing weekly newspaper first, followed in descending order by circular letters, daily newspaper, radio, and television.

Lindstorm (1958) found that farm advisers were considered by his respondents to be the best source of information leading to adoption followed by cooperative, members local meetings, neighbours/relatives, result demonstration, method demonstration, merchants and agricultural school.

Knox (1962) asked his respondents to rank the media used by them on importance as source of extension information. The respondents listed in descending order of frequency-circular letters, radio, daily newspaper, television and weekly newspaper.

Bettinghaus (1973) observed that if an individual was rated by the receivers as highly credible, the supposition would be that such an individual would have, because of his perceived characteristics, great persuasive abilities.

Gangappa (1975) in an Indian study found that small farmers attributed high credibility to Gramsevok as sources of information. Other credible sources in descending order were neighbors, demonstration and radio, respectively.

2.4 Source of information and dissemination

Rahman (1991) studied credibility of Block Supervisor as perceived by contact farmers on four dimensions, each having constituted of six traits. The respondents were 88 contact farmers who expressed their perception on a three point rating scale for trait.

The perceived scores under four dimensions of twenty four traits in descending order were as follows:

Safety dimension	: Honest-191, Safe-169, Just-168, Friendly-167, Kind-157, Dependable-156.
Qualification Dimension	: Knowledgeable-163, Attractive-163, Skilled-160, Experienced-154, planning ability-150 Communication ability-149.
Dynamism dimension	: Frank-155, Fast-155, Emphatic-151, Bold, 147, Active-139, Energetic-132.
Sociablity dimension	: Gentle-178, Accommodative-162, Approachable-158, Hospitable-158, pleasant-150, Cheerful-148.

It was observed that the comprehensive score for Safety, Sociability, and Dynamisms were 1008, 954, 939 and 897, respectively. Based on this Qualification, the author found that a credible agent is one who is first, Safe; Second, Sociable; third, Qualified; and fourth, dynamic.

Sooksamrit (1987) conducted a study on credibility of community development workers in Thailand. He found that the community development workers were perceived by the respondents as credible only when the were first, dynamic; second, sociable; third, competent and fourth, trustworthy under these for dimensions.

Somuatanasak (1987) directed a study on contact farmers' perception of the credibility characteristics of Tambol agents (Extension agents) in Thailand. Results showed that the contact farmers perceived the Tambol agent to be credible if he possessed all four dimensions of credibility characteristics in this order of importance: first, dynamic, second, qualified, third, sociable, and fourth, safe. The

contact farmers perceived their Tambol agents possessed safety and sociability enough to be credible but still they were lacking in the qualification and dynamism dimensions of credibility.

The pioneering work on source credibility in the Philippines was that of Canedo (1976). He studied Maranao rice farmers' perception of a credible extension agent on normative conceptual framework with four dimensions, each having constituted of eight traits. The respondents were 150 rice farmers who expressed their perception on a three-point raging scale. The perceived scores under four dimensions of thirty two traits in descending order were as follows:

Safety dimension	:	Friendly-448, Kind-447, Muslim (similar religion)-446, Maranao (same ethnic group) - 444, Honest-442, Just-440, safe-438, and similar values-431.
Qualification dimension	:	Informed-447, Trained-446, Authoritative-445, Experienced-444, Skilled-443, Higher education- 427, Higher status-386, older-382.
Dynamism dimension	:	Active-449, Energetic-449, Emphatic-449, Fast-447, Frank-446, Aggressive-441, Bold-427, Forceful-390.
Sociability dimension	:	Approachable-449, Congenial-449, Gentle-449, Hospitable-449, pleasant-449, Forgiving-448, Cheerful-445, Agreeable-444.

It was revealed that the comprehensive score for Sociability, Safety, Dynamism and Qualifications were 3582, 3536, 3497 and 3420, respectively. Based on this, the author observed that a credible agent is one who is first, sociable, second, safe; third, dynamic; and fourth qualified.

Torres (1980) found that the perception scores of his respondents for Sandiwa (a community newspaper) measured on nine dimensions were as follows: newsworthiness (2131), understandability (2116), community leadership (2113), objectivity (2093), content (2068), accuracy (2054), integrity (2035), responsibility (1993) and lay-out and legibility (1943).

2.5 Correlates of information sources

In this section, findings showing relationships of clients' characteristics to their attributed credibility on sources are presented.

Ismail (1979) observed that farmers' age, contact with extension agent, and exposure to mass media were not related to their perception of the interpersonal sources. However, education and cosmopoliteness were related to their perception.

Bhat (1980) observed that Agricultural Assistants' experience, training, social participation was found to influence the source credibility pattern to greater extent. But age, education had no influence on their source credibility.

Shastri (1984) in his study in India found that source of information showed no relationship between age, education, scientific orientation, risk preferences and socio-economic status. However, relationship was found between farm size and economic motivation of farmers with their most credible source of information. It was also noted that older farmers considered formal source of information more credible than middle age group farmers.

Shridhar (1978) in an Indian study revealed that clients' education, cosmopoliteness, economic motivation, size of holding, social participation and scientific orientation positively influenced source credibility pattern of farmers. But age had no influence on the source credibility.

Angadi (1984) revealed that the socio-economic characteristics i. e. education, socio-political participation, caste and socio-economic status had influence on source credibility pattern of jowar farmers. By contrast, land holding and material possession had no influence on source credibility pattern of those farmers. Level of adoption also had no influence on source credibility pattern of jowar farmers.

Torres (1980) found no significant relationship between coconut farmers' age and income to their perceived credibility of radio, interpersonal communication and

television. However, education was significantly related to the credibility of interpersonal communication but not to the credibility of radio and television.

Dhande (1982) observed that panchayat 'samati' members' education and organizational participation had significant influence on source credibility pattern.

Canedo (1976) found that of the five characteristics of the rice farmers' age and farming experience were not related to their perception of a credible extension agent. However, education, exposure to extension agents and exposure to other information sources were significantly related to their perception.

2.6 Conceptual Framework

In scientific research, selection and measurement of variables constitute an important task. The hypothesis of a research while constructed properly consist at least two important elements i.e.: a dependent variable and an independent variable. A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variables (Townsend, 1953). An independent variable is that factor which is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. Variables together are the causes and the phenomenon is effect and thus, there is cause effect relationship everywhere in the universe.

The conceptual framework of Rosenberg and Hovland (1960) was kept in mind while making structural arrangements for the dependent and independent variables. This study is concerned with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. Thus, the problems confronted by extension personnel at upazila level in receiving technological information and its dissemination was the dependent variable and 8 selected characteristics of the extension personnel at upazila level were considered as the independent variables. Problems confronted by upazila level extension personnel in receiving and disseminating technological information of an individual may be affected through interacting forces of many independent variables. It is not possible to deal with all independent variables in a single study.

It was therefore, necessary to limit the independent variables. For this study academic accomplishment, training exposure, social movement, job satisfaction, job performance, use of communication media, group communication and mass media communication included for this study as independent variables.

Considering the above mentioned discussion, a conceptual framework has been developed for this study, which is diagrammatically presented in the following Figure 2.1.

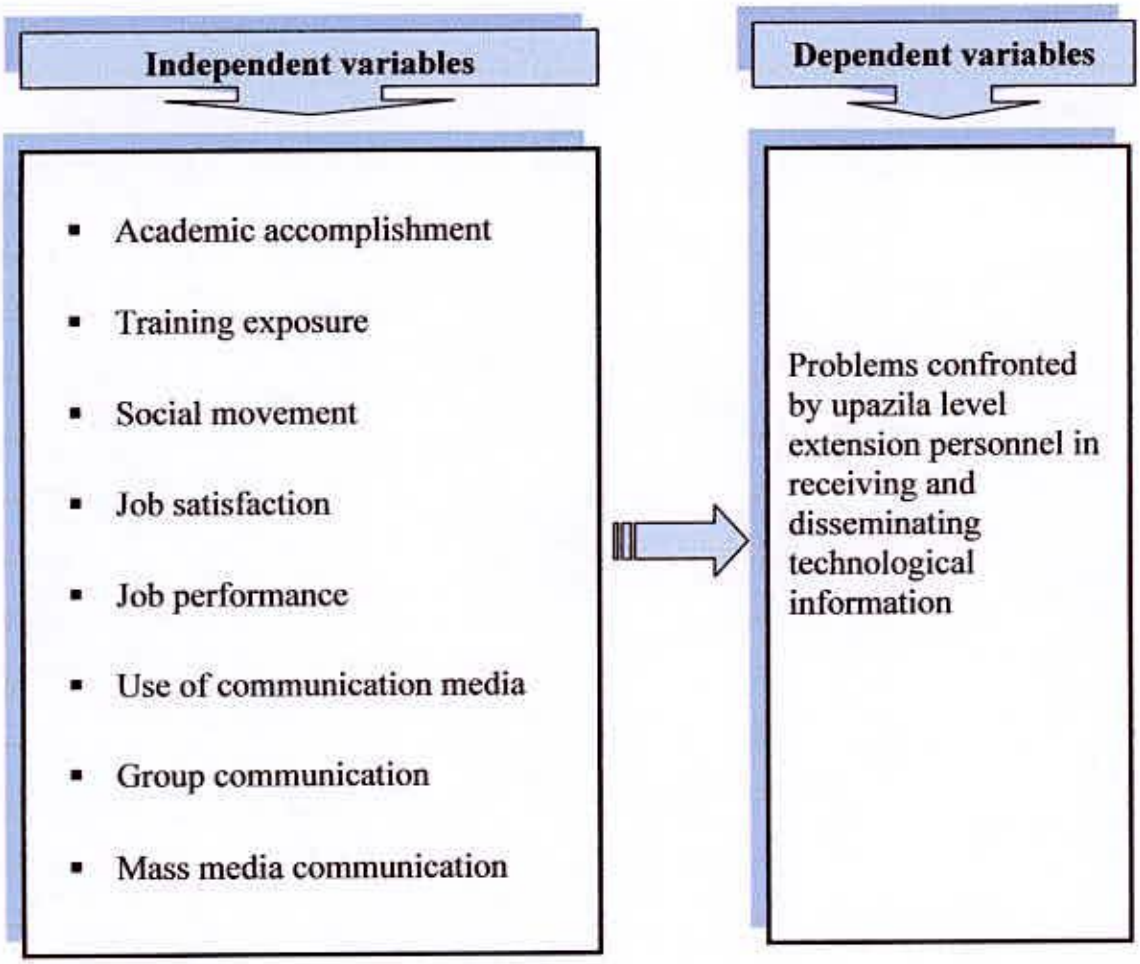

Figure 2.1 The conceptual framework of the study

CHAPTER 3

METHODOLOGY

Methodology would be enabling the researcher to collect valid information. It is impossible to conduct research work smoothly without proper methodology and it is very difficult to address the objectives with a scientific manner. It requires a very careful consideration on the part of the researcher to collect valid and reliable data and to analyze the same for meaningful conclusion. A sequential description of the methodologies followed in conducting this research work has been presented in this chapter.

3.1 Locale of the study

Upazila level extension personnel at all over Bangladesh were considered for the study. Therefore all Bangladesh constituted the locale of the study.

3.2 Population and sample of the study

There are 483 upazila agriculture offices all over Bangladesh. Each upazila consists of three extension officers – Upazila Agriculture Officer (UAO), Additional Upazila Agriculture Officer and Agriculture Extension Officer (AEO) and they are known as the extension personnel at upazila level. Accordingly, there are 1449 upazila level extension personnel of DAE. The agriculture extension personnel of DAE of the selected upazila constituted the population of the study. Mailed questionnaire were sent to 25% of the population i.e., 363 upazila level extension officers which constituted the preliminary sample of the study. All the respondent extension personnel did not return duly filled up questionnaire. Only 133 officers returned their questionnaire. But twenty one (21) of them were excluded for incomplete and faulty information. Therefore, the sampling size became 112 for the study.

3.3 The research instrument

A well structured interview schedule was developed based on objectives of the study containing direct and simple questions in closed form keeping in view the

dependent and independent variables of the study. Appropriate scales were developed to measure both independent and dependent variables.

The interview schedule was pre-tested with five upazila level extension personnel in actual situation before finalized it for collection of data. Necessary corrections, additions, alternations, rearrangements and adjustments were made in the interview schedule based on pretest experience. The interview schedule was then multiplied by printing in its final form. A copy of the interview schedule is presented into Appendix I.

3.4 Data collection procedure

The researcher sent the questionnaire to Upazila Agricultural Offices by mail. After completion of the filling up of the questionnaire providing necessary information it was came back to the address of researcher. Out of 363 set only 123 questionnaire were sent back. Otherwise no serious problem was faced by the investigator during data collection rather obtained cooperation from the respondents. Data collection was started in January and completed in March, 2012.

3.5 Measurement of variables

The variable is a characteristic, which can assume varying, or different values in successive individual cases. A research work usually contains two variables viz. independent and dependent variables. An independent variable is that which is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variable (Townsend, 1953). In the scientific research, the selection and measurement of variable is a significant task. According to this conception, the researcher reviewed literature to understanding about the natures and scopes of the variables relevant to this research. Finally, the researcher selected 8 independent and one dependent variable. The independent variables were: academic accomplishment, training exposure, social movement, job satisfaction,

job performance, use of communication media, group communication and mass media communication. The dependent variable was the problems confronted by upazila level extension personnel in receiving and disseminating technological information. The methods and procedures in measuring these variables are presented below:

3.6 Measurement of independent variables

The 8 characteristics of the respondents upazila level extension personnel mentioned above constituted the independent variables of this study. The following procedures were followed for measuring the independent variables-

3.6.1 Academic accomplishment

Academic achievement of an extension personnel at upazila level was measured by considering his/her performance in examinations of Schools/College/ University/Technical Institutions of Bangladesh. An academic achievement score of an individual was computed on the basis of two dimensions, namely, name of examinations and results of examinations.

The name of examination (E) was scored as follows:

Name of Examination	Assigned score
BSc. Ag. (Hons.)	1
MS	2
PhD	3

The result obtained (R) in each examination for the corresponding course was scored in the following manner:

Result obtained	Sub-score
1st class/Division	3
2nd class/Division	2

Academic achievement score of an Upazila level extension personnel was obtained by using the following formula:

Academic achievement score = $\sum\{(E) \times (R)\}$

Where,

E = Score for examinations

R = Score for the result of the examinations

The highest score would be $3 \times 3 \times 3 = 27$ and the lowest score would be $3 \times 2 \times 3 = 18$.

3.6.2 Training exposure

Training exposure of an upazila level extension personal was measured in terms of total number of days participated in all of the in-service training. One score was assigned for each day of in-service training. Score of training exposure were added together.

3.6.3 Social movement

Social movement of extension personnel at upazila level was measured by computing a social movement score. A total of 6 items of social movement related statements were used for the calculation of social movement. Each etension personnel at upazila level was asked to indicate his/her extent of social movement. Extent of social movement was categorized with continuative degree as regularly, often, moderately, rarely and not at all with assigned score 4, 3, 2, 1 and 0, respectively. For every statement, weights assigned to the 5 alternative responses were as follows:

Item	Weights
Regularly	4
Often	3
Moderately	2
Rarely	1
Not at all	0

Social movement score of extension personnel at upazila level was determined by summing the weights for their responses to all the 6 statements. Thus, social movement scores could range from 0 to 24, where 0 score indicated no social movement and 24 indicates very high social movement.

3.6.4 Job satisfaction

A total of 18 job items were listed to measure the extent of job satisfaction. The score were assigned on the basis of degree of job satisfaction high, medium, low and no satisfaction and score assigned as follows:

Extent of job satisfaction	Weights
High	3
Medium	2
Low	1
No satisfaction	0

Job satisfaction score of extension personnel at upazila level was determined by summing up the weights for their responses to all the 18 items. Thus, job satisfaction scores could range from 0 to 54, where 0 score indicates no job satisfaction and 54 indicates high job satisfaction.

3.6.5 Job performance

A total of 15 job performance related items were listed to measure the extent of job performance. The score were assigned on the basis of degree of job performance very high, high, medium, low and very low and score assigned as follows:

Extent of job satisfaction	Weights
Very high	5
High	4
Medium	3
Low	2
Very low	1

Job performance score of extension personnel at upazila level was determined by summing up the weights for their responses to all the 15 items. Thus, job performance scores could range from 0 to 75, where 0 score indicates no job performance and 75 indicates high job performance.

3.6.6 Use of communication media

Use of communication media were measured on the basis of 8 different defined statements related to use of communication media and the frequency of practicing of these statements in number per year. If the extension personnel at upazila level practiced one activity in a year then the assigned score of use of communication media would be 1. Total score for use of communication media was measured by adding all the frequency of these statements for each year.

3.6.7 Group communication

Group communication was measured on the basis of 12 different defined statements related to group communication and the frequency of practicing of these statements in number per year. If the extension personnel at upazila level practiced one statement in a year then the assigned score of group communication would be 1. Total score for group communication was measured by adding all the frequency of these statements for each year.

3.6.8 Mass media communication

Mass media communication was measured on the basis of 7 different defined statements related to mass media communication and the frequency of practicing of these statements in number per year. If the extension personnel at upazila level practiced one statement in a year then the assigned score of mass media communication would be 1. Total score for mass media communication was measured by adding all the frequency of these statements for each year.

3.7 Measurement of dependent variable

Problem confronted in receiving and disseminating technological information by extension personnel at upazila level was measured in the following ways:

i. Sources of receiving innovation by the extension personnel at upazila level were first identified. The score were assigned on the basis of degree of problem confrontation for receiving innovation and they were very high, high, medium, low and very low and score assigned as follows:

Extent of problem confrontation	Weights
Very high	4
High	3
Medium	2
Little	1
Not at all	0

Problem confrontation in receiving innovation score of extension personnel at upazila level was determined by summing up the weights for their responses to all the 6 items. Thus, problem confrontation in receiving innovation could range from 0 to 24.

ii. Disseminating innovation by the extension personnel at upazila level were first identified. The score were assigned on the basis of degree of problem confrontation in disseminating innovation were very high, high, medium, low and very low and score assigned as follows:

Extent of problem confrontation	Weights
Very high	4
High	3
Medium	2
Little	1
Not at all	0

Problem confrontation in disseminating innovation score of extension personnel at upazila level was determined by summing up the weights for their responses to all the 6 items. Thus, problem confrontation in disseminating innovation could range from 0 to 24.

(iii) Then problem confrontation ability in receiving and disseminating innovation was measured by adding problem confrontation in receiving innovation and disseminating innovation and the score would be 0-48, where 0 score indicates no problem and 48 indicates high problem confrontation in receiving and disseminating innovation. Problem confrontation in receiving and disseminating innovation categorized on the basis of summated frequency 'high use', 'moderate' and 'low'.

3.8 Hypothesis of the study

In the present study the following null hypotheses were formulated:

"There are no relationships between each of eight selected characteristics of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information".

3.9 Collection of data

The investigator himself collected data with mail communication using courier services and also personal contact on the basis of objectives to test the hypothesis.

3.10 Data processing

For data processing and analysis the following steps followed:

3.10.1 Compilation of data

A total of 112 interview schedule those were compiled, tabulated and analyzed according to the objectives of the study. In this process all the responses in the questionnaire were given numerical coded values. The responses to the question in the questionnaire were recorded and transferred to a master sheet to facilitate tabulation. Tabulation was done on the basis of categories developed by the investigator himself.

3.10.2 Categorization of respondents

For describing the various independent and dependent variables the respondents were classified into various categories. In developing categories the researcher was guided by the nature of data and general consideration prevailing on the social system. The procedures have been discussed while describing the variable in the sub-sequent sections of next chapter.

3.11 Data analysis

Data collected from the respondents were complied, coded, tabulated and analyzed in accordance with the objectives of the study. Various statistical measures such as frequency counts, percentage distribution, average, and standard deviation were used in describing data. SPSS (version 11.5) computer program were used for analyzing the data. The categories and tables were used in describing data. The categories and tables were also used in presenting data for better understanding.

For determining the association of the selected characteristics of the upazila level extension personnel with the problems confronted in receiving and disseminating technological information Pearson Product Moment Correlation was used. Five percent (0.05) level of probability was used as the basis for rejecting any null hypothesis. In order to find out the relationship between the selected dependent and independent variables correlation co-efficient was done.

CHAPTER 4

RESULTS AND DISCUSSION

The findings of the study were presented in this chapter in accordance with the objectives. This chapter contains findings of the study and possible interpretation of the recorded information. The chapter has three sections. The first section deals with the characteristics of the respondent extension personnel at upazila level. The second section deals with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. The third section deals with the relationship between individual characteristics of the extension personnel with problems confronted by them in receiving and its disseminating technological information.

4.1 Characteristics of the respondents

Different interrelated characteristics of the respondents extension personnel that might influence the problems confronted by them in receiving and disseminating technological information. It was therefore, hypothesized that the characteristics of the respondents under the study would have an effect on the problems confronted by them in receiving and disseminating technological information. However, the most important features of ten selected characteristics of the respondent extension personnel at upazila level such as academic accomplishment, training exposure, social movement, job satisfaction, job performance, use of communication media, group communication and mass media communication are presented and discussed below:

4.1.1 Academic accomplishment

Academic accomplishment of the extension personnel at upazila level was measure by adding different examinations namely BSc. Ag (Hons.), MS and PhD. Academic accomplishment score of the respondents ranged from 3 to 6 with the mean and standard deviation of 5.48 and 0.55 respectively. Based on their academic achievements, the respondents were classified into three categories such

as 'low academic accomplishment (upto 3), 'medium academic accomplishment (4-5), and high academic accomplishment (above 5). The distribution of the extension personnel at upazila level according to their academic accomplishment is presented in Table 4.1.

Table 4.1 Distribution of extension personnel at upazila level according to their academic accomplishment

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low academic accomplishment (upto 3)	1	0.90	5.48	0.55
Medium academic accomplishment (4-5)	55	49.10		
High academic accomplishment (above 5)	56	50.00		
Total	112	100.00		

Data contain in the table 4.1 reveal that majority (50.00%) of the extension personnel at upazila level belong to high academic accomplishment, whereas about 49.10 percent of them had medium academic accomplishment and only 0.90% were low academic accomplishment. It is appreciable that, extension personnel at upazila level had good academic careers and who are supposed to perform their assigned jobs efficiently and effectively. Most of their assigned jobs are communicative along wit planning, administrative, motivation and leadership which need high academic achievements. The success of DAE largely depends upon how the extension personnel at upazila level hold academic achievements and they are skilled in communication, administration, planning, motivation and leadership function. So it is assumed that higher the academic achievements have minimum problem in receiving and disseminating technological information.

4.1.2 Training exposure

The training exposure score of the respondents ranged from 73 to 264, with an average of 154.00 and standard deviation of 48.48. Based on training exposure score, the upazila level extension personnel were classified into the three categories i.e., low, medium and high. The distribution is shown in the Table 4.2.

Table 4.2 Distribution of extension personnel at upazila level according to their training exposure

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low (below 110)	26	23.21	154.00	48.48
Medium (110-145)	12	10.72		
High (above 145)	74	66.07		
Total	112	100.00		

Data contains in the Table 4.2 reveal that the major percent (66.07%) upazila level extension personnel had high training exposure whereas 23.21 percent low and 10.72% had medium training exposure. The respondents upazila level extension personnel training exposure indicate that the respondents of the study area needs to more training for their professional development. Most of the AEO received minimum number of training in their service tenure. DAE also play minimum role for training them. So it is necessary to organize more training by DAE for the professional development of the extension personnel for performing their duties and responsibilities effectively.

4.1.3 Social movement

The score of social movement of the upazila level extension personnel ranged from 13 to 24 with the mean and standard deviation of 19.11 and 2.30, respectively. According to social movement, the respondents were classified into three categories viz. low, medium, high level social movement. On the basis of their observed social movement the distribution of upazila level extension personnel is presented in Table 4.3.

Table 4.3 Distribution of extension personnel at upazila level according to their social movement

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low social movement (below 18)	14	12.50	19.11	2.30
Medium social movement (18-21)	94	83.93		
High social movement (above 21)	4	3.57		
Total	112	100.00		

Data in Table 4.3 indicate that major portion (83.93 percent) of the upazila level extension personnel had medium social movement followed by low social movement (12.50 percent) and high social movement (3.57 percent), respectively. From the data it was found that a significant number of respondents medium level social movement.

4.1.4 Job satisfaction

Job satisfaction score of the respondents ranged from 28 to 50 against the possible range from 0-54 with a mean and standard deviation of 35.67 and 4.55, respectively. Based on job satisfaction, the respondents were classified into three categories. These categories were low, medium and high job satisfaction group. The distribution of the respondents is presented in Table 4.4.

Table 4.4 Distribution of extension personnel at upazila level according to their job satisfaction

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low job satisfaction (below 30)	8	7.14	35.67	4.55
Medium job satisfaction (30-40)	90	80.36		
High job satisfaction (above 40)	14	12.50		
Total	112	100.00		

Findings from the Table 4.4 revealed 80.36 percent of the respondents had medium group in their job satisfaction compared to 12.50% and 7.14% high and low job satisfaction group, respectively. Among the respondents about 92.86 percent had medium to high level job satisfaction but majority have medium satisfaction in their job as upazila level extension personnel. It is necessary to improve the job satisfaction level of the respondents for the development of the agriculture of Bangladesh. For the increase of job satisfaction living standard of the upazila level extension personnel also take in consideration.

4.1.5 Job performance

Job performance score of the respondents ranged from 32 to 66 with a mean and standard deviation of 48.71 and 6.41, respectively. Based on job performance, the respondents were classified into three categories. These categories were low, medium and high job performance group. The distribution of the respondents is presented in Table 4.5.

Table 4.5 Distribution of extension personnel at upazila level according to their job performance

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low job performance (below 45)	16	14.28	48.71	6.41
Medium job performance (45-50)	55	49.11		
High job performance (above 50)	41	36.61		
Total	112	100.00		

Findings from the Table 4.5 found that 49.11 percent of the respondents had medium group in their job performance compared to 36.61% and 14.28% high and low job performance group, respectively. Among the respondents about 85.72 percent had medium to high job performance. It is necessary to improve the job performance level of the respondents for the development of the agriculture of Bangladesh. For that job related training may be organize for the extension personnel at upazila level.

4.1.6 Use of communication media

Use communication media score of the respondent ranged from 900 to 1500 with a mean and standard deviation of 1259 and 150.81, respectively. According to use of group communication score the respondents were classified into three categories viz. Low, medium and high use of group communication. The distribution of the upazila level extension personnel according to their use of group communication is presented in Table 4.6.

Table 4.6 Distribution of extension personnel at upazila level according to their use of group communication

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low (below 1200)	22	19.64	1259	150.81
Medium (1200-1400)	67	59.82		
High (above 1400)	23	20.54		
Total	112	100.00		

Data in Table 4.6 indicates that majority (59.82 percent) of the respondents were the medium level use of group communication compared to 20.54 percent in high use of group communication and 19.64 percent in low use of group communication group. Overwhelming majority (80.36.00 percent) constitutes the high and medium use of group communication group as upazila level extension personnel. So, proper use of group communication of upazila level extension personnel helps to improve agricultural development of Bangladesh.

4.1.7 Group communication

Group communication score of the respondent ranged from 288 to 643 with a mean and standard deviation of 457.07 and 71.50, respectively. According to the group communication score the respondents were classified into three categories viz. low, medium and high group communication. The distribution of the upazila level extension personnel according to their group communication is presented in Table 4.7.

Table 4.7 Distribution of extension personnel at upazila level according to their group communication

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low (below 400)	24	21.43	457.07	71.50
Medium (400-500)	61	54.46		
High (above 500)	27	24.11		
Total	112	100.00		

Data in Table 4.7 indicates that majority (54.46 percent) of the respondents were the medium group communication score compared to 24.11 percent in high group communication and 21.43 percent in low group communication group. Overwhelming majority (88.57 percent) constitutes the high and medium in group communication as upazila level extension personnel.

4.1.8 Mass media communication

Mass media communication score of the respondent ranged from 998 to 3990 with a mean and standard deviation of 1727.19 and 377.96, respectively. According to the mass media communication score the respondents were classified into three categories viz. low, medium and high mass media communication. The distribution of the upazila level extension personnel according to their mass media communication is presented in Table 4.8.

Table 4.8 Distribution of extension personnel at upazila level according to their mass media communication

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low (below 1700)	57	50.89	1727.19	377.96
Medium (1700-2000)	39	34.82		
High (above 2000)	16	14.29		
Total	112	100.00		

Data in Table 4.8 indicates that majority (50.89 percent) of the respondents were the low mass media communication score compared to 34.82 percent in medium mass media communication and 14.29 percent in high group mass media communication group. Overwhelming majority (83.71 percent) constitutes the low and medium in mass media communication as upazila level extension personnel.

4.2 Problems confronted by extension personnel at upazila level in receiving technological information and its dissemination

Problems confronted by upazila level extension personnel in receiving and disseminating technological information ranged from 13-41 against the possible range of 0-48 with the mean and standard deviation of 21.54 and 4.06, respectively.

Problems confronted by upazila level extension personnel in receiving and disseminating technological information was measured using 6 item for each in receiving information and disseminating technological information. Problem confrontation score of a respondent was determined by adding the score obtained from all the statements. Based on score in problems confronted by upazila level extension personnel in receiving and disseminating technological information the respondents were classified into three categories as shown in Table 4.9.

Table 4.9 Distribution of the upazila level extension personnel according to the problems confronted in receiving and disseminating technological information

Categories	Respondents		Mean	Standard deviation
	Number	Percent		
Low problem (below 18)	13	11.61	21.54	4.06
Medium problem (18-24)	80	71.43		
High problem (above 24)	19	16.96		
Total	112	100.00		

Among the respondents, problems confronted by upazila level extension personnel in receiving and disseminating technological information the highest 71.43 percent belong to the group of medium level problem group followed by 16.96 percent in high problem group and 11.61 percent in low problem group. Therefore, it was found that an overwhelming majority (88.39 percent) of the respondent have medium to high level of problem in receiving and disseminating technological information.

4.3 Relationship of selected characteristics of the extension personnel at upazila level and problems confronted by them in receiving technological information and its dissemination

Pearson Product Moment Correlation co-efficient was computed to find out the extent of relationship between the dependent variable and independent variables (Table 4.10). To reject the null hypothesis 0.05 and 0.01 level of significance was used.

Table 4.10. Results of Pearson's product moment correlation showing the relationship between the selected characteristics of the extension personnel at upazila level and problems confronted by them in receiving technological information and its dissemination

Dependent variable	Independent variables	Tabulated value		Value of co-efficient of correlation
		0.05 level	0.01 level	
Problems confronted by upazila level extension personnel in receiving and disseminating technological information	Academic accomplishment	0.204	0.262	-0.028
	Training exposure			-0.209*
	Social movement			-0.049
	Job satisfaction			-0.041
	Job performance			-0.319**
	Use of communication media			-0.308**
	Group communication			0.026
	Mass media communication			-0.006

**: Correlation is significant at the 0.01 level *: Correlation is significant at the 0.05 level

4.3.1 Relationship between academic accomplishment of extension personnel at upazila level and problems confronted by them in receiving technological information and its dissemination

The coefficient of correlation between academic accomplishment of the respondent extension personnel at upazila level and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.028. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.028) was found to be smaller than the tabulated value of 'r' (0.204) with 110 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was not rejected.*
- *The relationship between the concerned variables was statistically non significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that academic accomplishment had non significant negative relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. This represent that academic accomplishment of the respondents was not an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.2 Relationship between training exposure of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between training exposure of the respondent upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.209.

The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.209) was found to be greater than the tabulated value of 'r' (0.204) with 110 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that training exposure had significant negative relationships with the problems confronted by extension personnel at upazila level in receiving technological information and its dissemination. This represent that training exposure of the respondents was an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.3 Relationship between social movement of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between social movement of the respondent upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.049. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.049) was found to be smaller than the tabulated value of 'r' (0.204) with 110 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was not rejected.*

- *The relationship between the concerned variables was statistically non significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that social movement had non significant negative relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. This represent that social movement of the respondents was not an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.4 Relationship between job satisfaction of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between job satisfaction of the upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.041. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.041) was found to be smaller than the tabulated value of 'r' (0.204) with 110 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was not rejected.*
- *The relationship between the concerned variables was statistically non significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that job satisfaction had non significant negative relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

This represent that job satisfaction of the respondents was not an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.5 Relationship between job performance of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between job performance of the respondent upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.319. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.319) was found to be greater than the tabulated value of 'r' (0.262) with 110 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that job performance had significant negative relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. This represent that job performance of the respondents was an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.6 Relationship between use of communication media of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between use of communication media of the respondent upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.308. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.308) was found to be greater than the tabulated value of 'r' (0.262) with 110 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that use of communication media had significant negative relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. This represent that use of communication media of the respondents was an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.7 Relationship between group communication of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between group communication of the respondent upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be 0.026.

The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (0.026) was found to be smaller than the tabulated value of 'r' (0.204) with 110 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was not rejected.*
- *The relationship between the concerned variables was statistically non significant at 0.05 level of probability.*
- *The relationship showed a positive trend between the concerned variables.*

Based on the above findings it was concluded that group communication had non significant positive relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. This represent that group communication of the respondents was not an important factor regarding the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4.3.8 Relationship between mass media communication of upazila level extension personnel and problems confronted by them in receiving and disseminating technological information

The coefficient of correlation between mass media communication of the respondent upazila level extension personnel and problems confronted by them in receiving and disseminating technological information is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be -0.006. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables:

- *The calculated value between the concerned variables 'r' (-0.006) was found to be smaller than the tabulated value of 'r' (0.204) with 110 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was not rejected.*

- *The relationship between the concerned variables was statistically non significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that mass media communication had non significant negative relationships with the problems confronted by upazila level extension personnel and problems confronted by them in receiving and disseminating technological information. This represent that mass media communication of the respondents was not an important factor regarding the upazila level extension personnel and problems confronted by them in receiving and disseminating technological information.

CHAPTER 5

SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Major Findings

5.1.1 Selected characteristics of the respondents

Academic achievement: Majority (50.00%) of the extension personnel at upazila level belong to high academic accomplishment, whereas about 49.10 percent of them had medium academic accomplishment and only 0.90% were low academic accomplishment.

Training exposure: The major percent (66.07%) upazila level extension personnel had high training exposure whereas 23.21 percent low and 10.72% had medium training exposure.

Social movement: Major portion (83.93 percent) of the upazila level extension personnel had medium social movement followed by low social movement (12.50 percent) and high social movement (3.57 percent), respectively.

Job satisfaction: Total 80.36 percent of the respondents had medium group in their job satisfaction compared to 12.50% and 7.14% high and low job satisfaction group, respectively.

Job performance: Total 49.11 percent of the respondents had medium group in their job performance compared to 36.61% and 14.28% high and low job performance group, respectively.

Use of communication media: Majority (59.82 percent) of the respondents were the medium level use of group communication compared to 20.54 percent in high use of group communication and 19.64 percent in low use of group communication group.

Group communication: Majority (54.46 percent) of the respondents were the medium group communication score compared to 24.11 percent in high group communication and 21.43 percent in low group communication group.

Mass media communication: Majority (50.89 percent) of the respondents were the low mass media communication score compared to 34.82 percent in medium mass media communication and 14.29 percent in high group mass media communication group.

Problems confronted by upazila level extension personnel in receiving and disseminating technological information:

Problems confronted by upazila level extension personnel in receiving and disseminating technological information the highest 71.43 percent belong to the group of medium level problem group followed by 16.96 percent in high problem group and 11.61 percent in low problem group.

Hypothesis testing

Training exposure, job performance and use of communication media had significant negative relationship with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. Group communication had non significant positive relationship with problems confronted by upazila level extension personnel in receiving and disseminating technological information but academic accomplishment, social movement, job satisfaction and mass media communication had non significant negative relationships.

5.2 Conclusions

1. The findings indicate that about 71.43 percent of the respondents belonged to the medium level problem confrontation in receiving and disseminating technological information. This fact leads to the conclusion that it is necessary to take measures so that they face less problem in receiving and disseminating technological information.

2. Training exposure had significant negative relationships with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. Among the respondents about 66.07%percent upazila level extension personnel constituted the highest proportion that has high level training exposure. These facts lead to the conclusion that respondent training

exposure could affect the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

3. Group communication had non-significant positive relationship with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. It suggests that all of this characteristic could affect the problems confronted by upazila level extension personnel in receiving and disseminating technological information.

4. Job performance and use of communication media had significant negative relationships relationship with the problems confronted by upazila level extension personnel in receiving and disseminating technological information. It is necessary to consider these for problems confronted by upazila level extension personnel in receiving and disseminating technological information.

5.3 Recommendations

5.3.1 Recommendations for policy implications

Recommendations formulated on the basis of experience, observation and conclusions drawn from the findings of the study and have been prescribed to the concerned authorities, planners and executioners are given below:

1. Reasons behind the low and medium problems confronted by extension personnel at upazila level in receiving and disseminating technological information need to be identified and necessary attempt should be made to identify the possible reason overcoming this situation through DAE with increasing information flow mechanism thorough line ministry.

2. Training exposure could influence the problems confronted by upazila level extension personnel in receiving and disseminating technological information. Therefore, it may be recommended that training exposure should be consideration for problems confronted by upazila level extension personnel in receiving and disseminating technological information. DAE should undertake proper initiative for organizing training.

3. Job performance could influence the problems confronted by extension upazila level personnel in receiving and disseminating technological information. Therefore, it may be recommended that job performance should be consideration for problems confronted by upazila level extension personnel in receiving and disseminating technological information. DAE should arrange proper technical support for upazila level extension personnel for increasing job performance.
4. Use of communication media could influence the problems confronted by extension personnel at upazila level in receiving technological information and its dissemination. Therefore, it may be recommended that use of communication media should be consideration for problems confronted by extension personnel at upazila level in receiving technological information and its dissemination. DAE should arrange proper technical support for extension personnel at upazila level for increasing use of communication media.

5.3.2 Recommendations for further study

On the basis of scope and limitations of the present study and observation made by the researcher, the following recommendations are made for future study.

1. Other factors might have influence the problems confronted by upazila level extension personnel in receiving and disseminating technological information, which needs to be identified by further study.
2. The study was conducted in 121 upazilas but there are 483 upazila agriculture offices all over the Bangladesh. Similar studies are required to be conducted in all over the country and also with district level agriculture extension personnel.
3. The study investigated the direct and indirect effects of some selected characteristics of upazila level agriculture extension personnel. Future studies should be conducted to explore the direct and indirect effects of all the variables under investigation.

BIBLIOGRAPHY

Alam, M.A. 1981. Existing problems of marketing of potato in Dhaka city. *Bangladesh Journal of Extension Education.* **1**(1): 13.

Angadi, G. 1984. Credibility of Different Sources of information as Related with the Socio-economic characteristics of Jower Farmers in Belgaum district. *Thesis Abstract.* **12**(2): 11-13.

Arya, P.K. and Shah, D. 1984. Problem related to using improved technology for crop production. *Bangladesh Journal of Training and Development.* **3**(1): 25-29.

Ayaso, T.B. 1978. Role Performance of the Bureau of Agricultural Extension Management Technicians in The Nutrition Program of Leyte, *Unpublished M. S. Thesis* UPLB.

Babu, A.R. and Sinha, B.P. 1985. Communication Bahaviour of Extension Personnel with Regard to Modern rice technology. *Indian Journal of Extension Education.* **21**(3&4): 9.

BBS. 2009. Bangladesh Bureau of Statistics, Ministry of Planning, Government of People's of Bangladesh. Dhaka.

Bettinghaus, E. 1973. Persuasive communication. N. Y. : Holt. Rinehat and Winston, Inc.

Biswas, P. 1992. Farmers Faced Problems in Cotton Cultivation. *M.S. (Ag. Ext. Ed.). Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Canedo, F.M. 1976. Maranao Rice Farmers perception of a credible Extension Agent. Philippine Agriculturist. 60.

Chander, P., Singh, N.P. and Gill, S.S. 1990. Constraints in potato cultivation. *Indian Journal of Extension Education*. **23**(3): 31-36.

Cruz, E. D. 1964. Availability and Use of Mass Media as Supplements in class room Teaching and Extension in ACAP Schools. *B.S.A. Thesis,* UPCA.

Faroque, M. G. 1997. Knowledge regarding improved vegetable cultivation of female rural youth in Bhaluka (Mymensingh). *M.S. (Ag. Ext. Ed.). Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Gapuz, J.A. 1980. Profile and Problems of Farm Management Technicians in the Province of Leyte. *M. S. Thesis,* UPLB.

Girianadhar, P.V. 1977. A study on Relative Source credibility and information seeking patterns of Farmers. *Thesis Abstract*, **11**(4): 110-111. Hariana Agricultural University.

Goode, W. J. and Hatt, P. K. 1952. Methods of Social Research. New York: Mc Grow-Hill Book Company, Inc.

Gupta, M.P. 1980. Use of Communication Media by village level workers, Indian Journal of Extension Education, 16: (3&4): 19.

Hossain, S. 1990. Dissemination of information and training for farm housewives. Unpublished M.S. (Ag. Ext. Ed.) Thesis, Bangladesh Agricultural University, Mymensingh.

Hovland, C.I. and Weiss, W. 1951. The Influence of Source Credibility on communication Effectiveness. Public Opinion Quarterly. **5**(3): 45-46.

Huque, M.M. 1982. Masagana-99 Farmers' Perception of the Effectiveness of Communication Media and their use in Bay, Laguana. *M.S. Thesis,* UPLB.

Huque, M.M. 1986. The Relative Effectiveness of Two Extension Publications in English and Cebuanu on change Agents' cognitive and Affective Domoins in Rice Technology Diffusion. Ph.D. Dissertation, Gregorio Araneta University.

Islam, M.M., Depositario, W.C. and Valeva, J.B. 1986. Determinants of job Satisfaction of the Barangay council officials of Laguna Provinces, Philippines. *Bangladesh Journal of Extension Education.* **1**(2): 17.

Ismail, N. 1979. Farmers perception of the Credibility of Interpersonal Sources of Development Information. M.S. Thesis, UPLB.

Juliano, V.A. 1981. The Effectiveness of a Vernacular Farmer's Bulletin in communicating Agricultural Information. *M.S. Thesis,* UPLB.

Karim, M.A. 1974. Relationships of Selected Economic, Social, and psychological characteristics of the Union Assistants of Mymensingh Agricultural District with their problem confrontation. *M.Sc. (Ag. Ext. Ed.) Thesis*, BAU.

Kashem, M.A., Rahman, M.Z. and Islam, K.M.M. 1994. A study on the Block Supervisors, Job Satisfaction. *Bangladesh Journal of Training and Development.* 7(1): 20.

Kashem, M.A. and Halim, A. 1991. Information is a pre-condition to receive information and the use of technology. *Bangladesh J. Trin. Dev.,* **4**(1): 21-25.

Kher, A. and Halyal, M. 1988. Identify the constraints in adoption of sugarcane production technology. *M.S. (Ag. Ext. Ed.). Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Knox, J.W. 1962. Relative value of Mass Media. Review of Extension Research. U. S. D. A, Extension Service circular. 541.

Lazo, O.J.S. 1963. Proposal for an in-service training in mass communication media for Philippines Municipal Extension Wormers. Research Co-operative Extension work, 7th in a Series (Dept. of Agril. Ext. Ed.).

Lindstorm, D.E. 1958. Diffusion of Agricultural and Home Economics Practices in a Japans Rural Community. *Rural Sociology*, **23**: 68-69.

Mabesa, M.K. 1980. Agricultural Publications Dissemination and Usefulness. *Indian Journal of Extension Education*, **4**(1): 22-25.

Mahboob, S.G., Rasul, G., Alam, M.S. and Islam, M.M. 1978. A study of Union Assistants in Bangladesh. Department of Agricultural Extension & Teachers Training, Bangladesh Agricultural University.

Marothia, P.A. 1983. Rural Development and Technology Generation. *Thesis Abstract*, **14**(1): 35-39. Hariana Agricultural University.

Muttaleb, M.A., Karim, K.S. and Hossain, M.M. 1998. Barriers for the adoption of potato technologies. Paper Presented in Conference on Appropriate Agricultural Technologies for Farm Women, held at Dhakaa, June 15, 1998.

Orozco, A.U. 1970. Some Factors Associated with the Effectiveness of the Informational Materials of the Loss Banos Milk Collection Scheme. M.S. Thesis, UPLB.

Paders, A.S. 1979. Attitudes, Problems and Role Performance of the PCC Field Technicians in cotton production program. *M. S. Thesis*, UPLB.

Patil, N.B. 1982. A study of Factors Associated with knowledge and Adoption Behaviour of Farmers in Relation to recommended Practices of Bidi Tobacco cultivation. *Thesis Abstract*, **10**(1-4): 53-55.

Pramanik, S.U. 2001. farm youth in Mymensingh villages relating to different problems farm youth in Mymensingh villages relating to different problems. *M.S. (Ag. Ext. Ed) Thesis*. Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University, Mymensingh.

Raha P.H., Bachchu, B.A. and Ali, A. 1986. Farmers' Knowledge in Irrigated Modern Boro Paddy. *M.S. (Ag. Ext. Ed) Thesis*. Department of Agricultural Extension and Teacher's Training, Bangladesh Agricultural University, Mymensingh.

Rahman, M.Z. 1991. Credibility of Block Supervisors in Savar Upazila under Mymensingh District. *Unpublished M.Sc. (Ag. Ext. Ed.) Thesis,* BAU, Mymensingh.

Raut, J.B. 1974. Village level worker and the important source for securing agricultural information. *Rural Sociology*, **34**: 28-31.

Ray, G.L. 1990. Agricultural information and communication. McGraw-Hill-Book Company, Inc.

Rosenberg, M. and Hovland. 1960. Research on communication and attitude coated in Triandis, H.C. 1971. Attitude and attitude change, John Willey Publisher, New York.

Sangha, G.S. and Gupta, M.P. 1985. Credibility of Television as a source of information. *Indian Journal of Extension Education*, **11**(1&2): 21.

Sing, N.P. and Prasad, C. 1974. Communication Bahaviour and Source credibility pattern of Young Farmers. *Indian Journal of Extension Education*, **10**(1&2): 16.

Singh, B.N. and Jha, P.N. 1965. Utilization of Farm informatiom in Relation to Adoption of Improved Agricultural Prectices. *Indian Journal of Extension Education*, **1**(1): 27.

Sivaramakrishnan, H. 1976. A Comparative Study of Information Source Credibility of Judged by Farmers on Extension Workers, Experts and Program Administrator in Trivandrum District of Kerala State. *Thesis Abstract*, **2**(3): 25.

Somuatanasak, D. 1987. Contact farmers' perception of the credibility characteristics of Tambol agents [extension agents] in Singburi, Thailand. college, Laguna (Philippines).

Sooksamrit, P. 1987. Credibility of community development workers is Thailand. College, Laguna (Philippines).

Swamy, B.N. 1978. A comparative study of Adoption Behaviour consultancy pattern and information source credibility of small, marginal and other Farmers is Banglalore District of Karnnataka State. **5**(1): 79-80.

Torres, A.P. 1980. Communication Behaviour of coconut Farmers in Queen Provence. M. S. Thesis, UPLB.

Townsend, J.C. 1953. Introduction of Experimental Methods. International Student Edition, New York. McGraw-Hill-Book Company, Inc.

Van den Ban and Hawkins. 1988. Communication and Information Sources. New York. McGraw-Hill-Book Company, Inc.

Wite, M.E. 1961. The Wisconsin County Agricultural Agent and his use of Mass Media, Ph. Thesis, Review of Extension Research. USDA; Extension Service Circular, 334.

Zinyama, P.P. 1988. Farmers perception of the constraints against increased crop production in the subsistence communal farming sector. *India Journal of Extension Education*, **21**(3): 93-95.

Appendix I. Interview Schedule

DEPARTMENT OF AGRICULTURAL EXTENSION AND INFORMATION SYSTEM
SHER-E-BANGLA AGRICULTURAL UNIVERSITY
DHAKA 1207

Questionnaire for collecting data for the study entitled:

"Problems Confronted by Upazila Level Extension Personnel in Receiving and Disseminating Technological Information"

Sl. No. .....

Name of the respondent .....

Name of the Upazila.....District.....

Contact No.....E-mail.....

Please answer the following questions

Official Position

Please put tick (√) mark about your official position?

Sl. No.	Position	Tick(√)
1.	AEO	
2.	UAO	
3.	UAO(additional)	

1. Academic Accomplishment

Please indicate your level of educational by putting tick mark

Sl. No.	Name of examination	1st Class/ Division	2nd Class/ Division
1.	BSc. Ag. (Hons.)		
2.	MS		
3.	PhD		

2. Training Exposure

Provide information of your training attended during the tenure of your service till date as per the following arrangements

Sl. No.	Name of the training	Duration (days)
1.		
2.		
3.		
4.		
5.		

3. Social movement

Please mention your extent of mobility on the following aspects as performed by you

Sl. No.	Item	Extent of social movement				
		Regularly	Often	Moderately	Rarely	Not at all
1.	**Acceptance of challenge**					
2.	**Courage** (Protest against anti-social activities)					
3.	**Empathy** (priorities to farmers needs)					
4.	**Punctuality** (perform right work at right time)					
5.	**Hard work** (hard work as per need)					
6.	**Problem handling** (Handling problematic situations)					

4. Job Satisfaction

Please indicate your extent of job satisfaction with each of the following aspects of your job environment by putting tick mark (✓) against each item

S1. No.	Items of job satisfaction	Extent of job satisfaction			
		High	Medium	Low	No satisfaction
1.	Pay and allowance				
2.	Residential accommodation				
3.	Transport facility				
4.	Office facilities like telephone, mobile, desk, office decoration materials, stationeries etc.				
5.	Training facility				
6.	Relationship with high officials and subordinates				
7.	Scope for promotion				
8.	Social recognition				
9.	Place of posting				
10.	Leave facility				
11.	Job security				
12.	Availability of inputs in time of need				
13.	Recognition from higher authorities				

14.	Recognition from farmers				
15.	Appreciations of my service by the superior officials				
16.	Direct involvement in crop production plan				
17.	Opportunity of exercise technical knowledge and skill				
18.	Independent decision-making scope				

7. Job Performance

Mention the extent of your job performance in the following activities (✓)

Sl. No.	Activities	Extent of performance				
		Very high	High	Medium	Low	Very Low
1	Familiar with the personnel of District Agriculture office					
2	Knowledge on innovations					
3	Diffusion of innovation of Agricultural technology related to cultivation					
4	Capacity to identify the farmers problem					
5	Capacity in selection of farmers for different activities like demonstration					
6	Helping in developing Upazila level Agricultural Development Plan					
7	Monitoring each season's agricultural Development program					
8	Maintaining a daily dairy					
9	Conducting training for the SAAOs and farmers					
10	Preparation and submission of report					
11	Achievement of land related target					
12	Achievement of production related target					
13	Motivating the farmers for cultivating recommended varieties of crops					
14	Making suggestion for pest management, irrigation and drainage					
15	Extent of communication with other GO and NGOs personnel					

8. Use of communication media:

Please indicate the extent of use of the following Personal communication media.

Sl. No.	Statement	Number/Year
1.	Letters written to the high officials	
2.	Letters written to the sister organizations (like- ULO,UFO,NGO's) and other upazila level officers	
3.	Letters written to the subordinates	
4.	Farm and home visit made	
5.	Telephone Call to super ordinates	
6.	Telephone Call to subordinates	
7.	Telephone Call to farmers	
8.	Email contact with others	

9. Group communication:

Sl. No.	Statement	Number/Year
1.	Seminar and workshop attended	
2.	Meetings attended at district or national level	
3.	Meetings attended at sister organizations(like- ULO,UFO,NGO's)	
4.	Meetings called in upazila agricultural office	
5.	Group discussion meeting attended	
6.	Upazila planning workshop conducted	
7.	District extension planning committee attended	
8.	Conduction of upazila agricultural extension co-ordination committe meeting	
9.	Field days attended	
10.	Result demonstration meeting attended	
11	Demonstration plot visited	
12	Method demonstration visited	

10 . Mass media communication:

Sl. No.	Statement	Number/Year
1.	Upazila or District agricultural fair organized and attended	
2.	Posters and various agricultural issues prepared and distributed	
3.	Leaflet prepared and distributed	
4.	Multi location testing attended	
5.	Articles written in Magazine, Newspaper	
6.	TV programs conducted/attended	
7.	Web site browsing	

9. Problem Confronted in Receiving and Disseminating innovations

Please indicate the extent of your problem confrontation in receiving and disseminating by putting tick (✓) *in appropriate column for each item*

A. **Receiving innovation**

Sl. No.	Items	Problem confrontation				
		Very High	High	Medium	Little	Not at all
1	Lack of communication with research institutes					
2	Lack of electronic media (TV, radio) for receiving information					
3	Lack of electricity to operate TV					
4	Lack of print media					
5	Unavailability of internets facilities					
6	Difficulty to arrange result and *method demonstration*					

B. **Disseminating innovation**

Sl. No.	Items	Problem confrontation				
		Very High	High	Medium	Little	Not at all
1	Providing ideas in Thana Planning Workshop (TPW)					
2	Assisting farmers to obtain information					
3	Coordination with Sub Assistant Agricultural Officers					
4	Attending Thana Meetings and Trainings					
5	Monitoring the implementation of extension events					
6	Discussion with farmers about new concept or technology					

Thanks for your co-operation

Signature of the Interviewer with Date

Appendix II. Correlation Matrix

Characters	A	B	C	D	E	F	G	H	I
A	1.00								
B	0.299**	1.00							
C	-0.091	0.118	1.00						
D	0.075	0.142	0.337**	1.00					
E	0.333**	0.179	0.213*	0.082	1.00				
F	0.111	-0.030	-0.056	0.131	0.188*	1.00			
G	-0.086	-0.148	0.055	-0.089	0.008	0.000	1.00		
H	0.042	0.091	0.239*	0.098	0.223*	-0.171	-0.146	1.00	
I	-0.028	-0.209*	-0.049	-0.041	-0.319**	-0.308**	0.026	-0.006	1.00

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level

A: Academic accomplishment B: Training exposure C: Social movement D: Job satisfaction

E: Job performance F: Use of communication media G: Group communication H: Mass media communication

I: Problems confronted by extension personnel at upazila level in receiving technological information and its dissemination