

**FARMERS-EXTENSION WORKERS RELATIONSHIP IN A
SELECTED UNION OF NARAIL DISTRICT**

BY

SUDIP KUMAR DEY

REG. NO. 07-02624

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 (M.S.)

IN

AGRICULTURAL EXTENSION AND INFORMATION SYSTEM

SEMESTER: JANUARY-JUNE, 2009

APPROVED BY:



Prof. Mohammad Hossain Bhuiyan
Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Dhaka
Supervisor



Prof. Dr. Md. Rafiquel Islam
Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Dhaka
Co-Supervisor



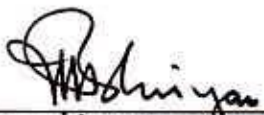
Prof. Dr. Md. Rafiquel Islam
Chairman
Examination Committee

CERTIFICATE

This is to certify that the thesis entitled “**Farmers-Extension Workers relationship in a selected union of Narail District**” 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 authentic research work carried out by **Sudip Kumar Dey**, Registration No. 07-02624 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: 29-8-2010
Dhaka, Bangladesh


Prof. Mohammad Hossain Bhuiyan
Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Dhaka
Supervisor

*DEDICATED
TO
MY BELOVED PARENTS*



ACKNOWLEDGEMENTS

The author first of all wishes to express his enormous sense of gratefulness to the Almighty God for His countless blessing, love, support, protection, guidance, wisdom and assent to successfully accomplish this research work.

The author deems it a proud privilege to express his deep of gratitude, sincere appreciation and immense thanks to his supervisor Professor Mohammad Hossain Bhuiyan, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, for his continuous guidance, cooperation, constructive criticism and helpful suggestions, valuable opinion 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, sincere appreciation and immense indebtedness to his co-supervisor Professor Dr. Md. Rsfiquel Islam, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, for his scholastic and continuous guidance, constructive criticism and valuable suggestions during the entire period of course and research work and preparation of this thesis.

The author expresses his sincere respect to the Chairman and all the teachers of the Department of Agricultural Extension and Information System, SAU, for their valuable teaching, suggestions and encouragement during the entire period of the study.

The author expresses his sincere appreciation to his brother, sisters, relatives, friends and well wishers for their inspiration, help and encouragement throughout the study.

The Author

June 2009

FARMERS-EXTENSION WORKERS RELATIONSHIP IN A SELECTED UNION OF NARAIL DISTRICT

BY

SUDIP KUMER DEY

ABSTRACT

The main objectives of the study were to determine the farmers-extension workers relationship of the farmers and to explore the relationship between farmers-extension workers relationship of the farmers and their selected characteristics. The study was conducted at Salamabad union of Kalia Upazilla under Narail District. Data were collected from a sample of 116 farmers of five villages by using pre-tested interview schedules during June 14 to June 29, 2009. Farmers-Extension workers relationship was measured on the basis of its three dimensions viz. communication, empathy and credibility of the extension workers separately. However, the overall farmers-extension workers relationship was found out by averaging the scores of these three dimensions. It was found that the overall farmers-extension workers relationship scores ranged from 8.66 to 20.66 with mean and standard deviation of 15.11 and 1.85 respectively. The majority (56.01%) of the farmers opined that they had medium relationship with extension workers compared to 39.97 percent with low relationship and only 4.02 percent high relationship. Pearson Product Moment Correlation co-efficient was computed in order to find out the extent of relationship between the dependent variable and independent variables. Competition with the fellow farmers and annual family income showed significant positive relationship and knowledge on agriculture showed significant negative relationship with Farmers-Extension workers relationship.

TABLE OF CONTENTS

CHAPTER	TITLE	Page
	ACKNOWLEDGEMENTS	i
	ABSTRACT	ii
	TABLE OF CONTENTS	iii
	LIST OF TABLES	vi
	LIST OF FIGURES	viii
	LIST OF APPENDICES	viii
1.	INTRODUCTION	01
	1.1 General Background	01
	1.2 Statement of the problem	03
	1.3 Justification	04
	1.4 Specific objectives of the study	05
	1.5 Scope of the study	05
	1.6 Limitations of the study	06
	1.7 Assumptions of the study	07
	1.8 Statement of the hypothesis	08
	1.9 Definition of important terms	08
2.	REVIEW OF LITERATURE	11
	2.1 Concepts of Farmers-Extension Workers relationship	11
	2.2 Review of previous research findings related to Farmers-Extension Workers relationship	17
	2.3 Review of previous research finding related to relationship of selected characteristics and Farmers-Extension Workers relationship	19



CHAPTER	TITLE	Page
	2.4 Conceptual framework of the study	26
3.	METHODOLOGY	28
	3.1 The Locale of the study	28
	3.2 Population and Sample of the study	28
	3.3 Preparation of data gathering instrument	31
	3.4 Method of data collection	32
	3.5 Data processing and statistical analysis	32
	3.6 Selection of dependent and independent variables	32
	3.7 Independent variables	33
	3.8 Dependent variables	33
	3.9 Measurement of variables	33
4.	RESULTS AND DISCUSSION	44
	4.1 Selected Characteristics of the Farmers	44
	4.1.1 Age	46
	4.1.2 Education	46
	4.1.3 Farm size	47
	4.1.4 Competition with the fellow farmers	48
	4.1.5 Time spent for farm work	49
	4.1.6 Annual family income	50
	4.1.7 Experience in farming	51
	4.1.8 Knowledge on agriculture	52
	4.1.9 Innovativeness	52
	4.1.10 Cosmopolitaness	53

CHAPTER	TITLE	Page
	4.2 Communication behavior	54
	4.3 Empathy	55
	4.4 Credibility	56
	4.5 Overall Farmers-Extension Workers Relationship	57
	4.6 Relationship between selected characteristics of the Farmers and their Farmers-Extension workers relationship	58
	4.7 Inter-variables relationship among the independent variables	67
5.	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	68
	5.1 Summary	68
	5.2 Conclusions	75
	5.3 Recommendations	79
	BIBLIOGRAPHY	82
	APPENDIX	91



LIST OF TABLES

	Title	Page
Table 4.1.	Descriptive statistics and salient features of the characteristics of farmers	45
Table 4.2.	Distribution of respondents according to their age	46
Table 4.3.	Distribution of respondents according to their level of education	47
Table 4.4.	Distribution of respondents according to their farm size	48
Table 4.5.	Distribution of respondents according to their competition with the fellow farmers	49
Table 4.6.	Distribution of respondents according to their time spent for farm work	49
Table 4.7.	Distribution of respondents according to their annual family income	50
Table 4.8.	Distribution of respondents according to their experience in farming	51
Table 4.9.	Distribution of respondents according to their knowledge on agriculture	52
Table 4.10.	Distribution of respondents according to their Innovativeness	53
Table 4.11.	Distribution of respondents according to their Cosmopolitaness	54
Table 4.12.	Distribution of respondents according to perception for communication behavior of extension workers	55
Table 4.13.	Distribution of the farmers according to empathy of extension workers	55
Table 4.14.	Distribution of respondents according to credibility of extension workers	56

	Title	Page
Table 4.15.	Distribution of respondents according to their Overall Farmers-Extension Workers relationship	57
Table 4.16.	Correlation between dependent and independent variables (N=116)	58

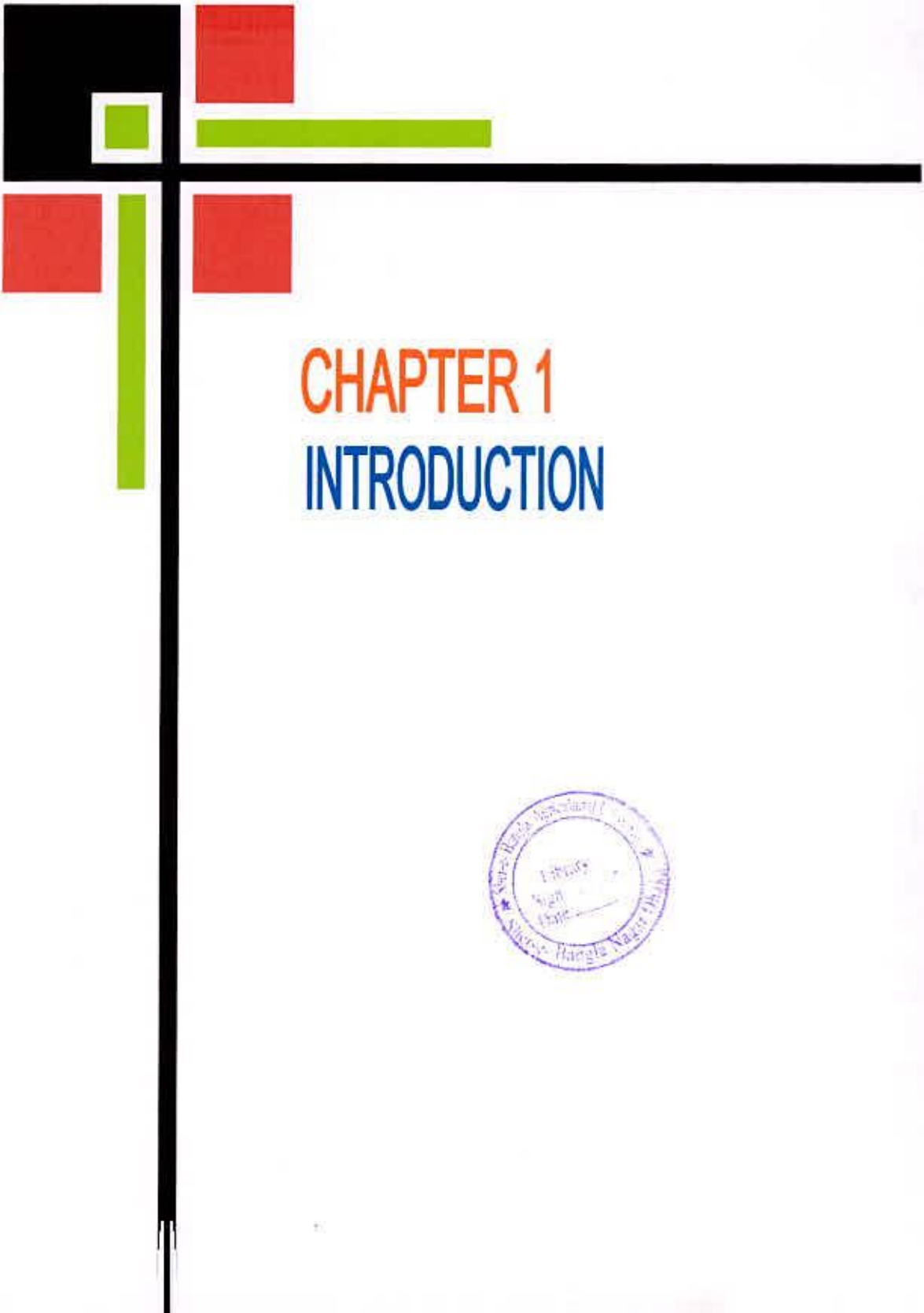


LIST OF FIGURE

	Title	Page
Figure 2.1.	The conceptual framework of the study	27
Figure 3.2	Photograph showing Narail District	30
Figure 3.1	Photograph showing Kalia Upazila	31

LIST OF APPENDIX

	Title	Page
Appendix I.	English version of the interview schedule for the study	91
Appendix II.	Correlation Matrix	103



CHAPTER 1

INTRODUCTION



CHAPTER 1

INTRODUCTION

শেখেরবাংলা কৃষি বিশ্ববিদ্যালয় গজাগার
সংখ্যাজন নং.....11.5.....
তারিখ.....MSc.....তাঃ ১৭.৭.১২

1.1 General background

Bangladesh is one of the developing countries of South East Asia, comprising of total area of 1, 47,570 sq. km. Agriculture is the back bone of Bangladesh's economy. About 48.68 percent of her people are engaged in agriculture. Agriculture contributes more than 20.60% to the gross domestic product of the country where as crops contribute 3.44%, animal farming contributes 3.46%, forest and related services contributes 5.53% and fishing contributes 4.57% (BBS, 2009). GDP growth rate of Bangladesh mainly depends on the performance of the different agricultural sectors. The present status of GDP in Bangladesh is 20.87% with per capita income 47,396 Taka (690\$) (BBS, 2009), compared to those developing countries this GDP is poor. Consequently, people of Bangladesh lead a very miserable life under economic handship.

To develop agricultural economy of Bangladesh many government and non government extension services are engaged in rural areas with their respective development projects. In fact, the successes of the extension services are largely depend upon job performance of their change agents/extension worker's relationship with the client system and organizational support as well. Extension workers serve farmers with advanced agricultural technology and perform technical and administrative function including:

- a) Farmer's training
- b) Identification of farmers problem
- c) Extension program planning
- d) Assessments of resource requirement
- e) Conduction of different extension activities

f) Technology transfer

From the chart of extension worker's technical and administrative function it is clear that they are not only engaged in transfer of technology, they also identify farmers' problem and give solution to those problems. Effective use of inputs is another dimension of agricultural development. But it needs special skill training for the farmers, demonstration and other relevant activities. Extension workers carry out these functions at their best. In addition, with the government extension workers some NGO workers like BRAC, PROSHIKA also play all role in the socio-economic development of farmers teaching them improved agriculture practices, health and sanitation and impart training on many income generating activities. So extension workers whether belong to government or non government organization should establish firm relationship with their client system. If there is no good relationship between change agency and client system diffusion of technology and other related activities cannot be well performed. It is assume that stronger the relationship between farmers and extension workers better the development of client system.

Farmers of Bangladesh are, economically handicapped, illiterate or less educated, have poor communication ability, have no outward knowledge, and they have limitation to establish relationship with extension workers. In this condition, extension workers have a great responsibility to make a high-value relationship with their client system for the sake of their economic development. In Bangladesh no empirical research was conducted so far on farmers-extension workers relationship. The researcher developed a felt need to conduct this sort of research. So he is keenly interested to undertake research entitled "Farmers-Extension Workers Relationship in a selected Union of Narail District".

1.2 Statement of the problem

Although Bangladesh is an agricultural country she cannot yet produce sufficient food to feed her population. A large number of government and non-government organizations (NGOs) are working for the development of agriculture. Among them, DAE is an important one, which is involved in transferring of improved agricultural technologies to the farmers. While discharging their duties Extension Workers need to transfer new ideas, facts or feelings in a way of understandable to farmers. In fact, this refers to effective communication, an important aspect of extension education. Agriculture extension primarily deals with human resource development (HRD) and the transfer of technology and knowledge from agricultural research centers to farmers. Improving human resource development (HRD) within rural community is essential for agriculture and community development. Extension workers are professionals in the extension system responsible for developing individuals in the community. Hence, as the profession, it is necessary to identify leadership skills possessed by the agricultural extension workers in order to gauge their performance in the extension system. Therefore, there is a need to gauge performance of extension workers and a need to determine indicators of performance. Agricultural extension as a profession it has, a numbers of avenues through which extension workers can be key persons of agricultural development.

Job performance of extension workers depend upon the effective and productive relationship between farmers and extension workers. So, the researcher is keenly interested to conduct a study on Farmers-Extension Workers Relationship. In this regard the study aims to answer the following research questions:

- i) What are the dimensions of Farmers-Extension Workers relationship in a selected Union of Narail District?

- ii) What are the characteristics of farmers that influence the Farmers-Extension workers relationship?
- iii) What are the correlations between the selected characteristics of farmers and Farmers-Extension workers relationship?

1.3 Justification

Extension services of Bangladesh belong to government. Crop, fish and livestock production have separate extension services. DAE is responsible for diffusion of innovation regarding crop production practices. Extension workers of each of the extension services to implement the extension program working with the farmers. Extension worker has manifold functions. In fact in performing their roles they come in contact with farmers and develop a relationship among them which contribute to agricultural production. Some of the functions of extension workers are stated below:

- 1) To help farmers improve their living standards.
- 2) Help farmers achieve their long and short term objectives.
- 3) Make practical suggestions which will enable farmers to attain their goals.
- 4) Act as a link between farmers, researchers and planners.
- 5) Help farmers to devise methods of overcoming their problems. This is an innovative function, and is also problem-oriented.
- 6) Assist with the implementation of national policies.
- 7) Assist with the organization of farming structures.

The present study was initiated in order to have an understanding of Farmers-Extension Workers relationship during performance of extension activities by the agricultural extension workers. Findings of this study, may therefore, play a great role in gaining knowledge for the planers and experts of agricultural extension services and are expected to be helpful for the extension workers also in order to

improve extension activities of DAE. For these reasons, the researcher undertook the present study entitled “Farmers-Extension Workers Relationship in a selected Union of Narail District.”

1.4 Specific objectives of the study

The following specific objectives have been set in order to give proper direction of the study:

1. To determine and describe Farmers-Extension Workers relationship in a selected Union of Narail District.
2. To determine and describe some selected characteristics of farmers. The selected characteristics are mentioned below:
 - I. Age
 - II. Education
 - III. Farm size
 - IV. Competition with the fellow farmers
 - V. Time spent for farm work
 - VI. Annual family income
 - VII. Experience in farming
 - VIII. Knowledge on agriculture
 - IX. Innovativeness
 - X. Cosmopolitaness
3. To explore the relationship between the selected characteristics of farmers and Farmers-Extension Workers relationship.



1.5 Scope of the Study

The main focus of the study was to ascertain the Farmers-Extension Workers relationship in the study area. The findings of the study are applicable to some selected Union of Kalia upazila under Narail district. However, the findings may

also be applied for other areas of the country having similarity to the study area. The study explored the personal, economic, social and psychological factors influencing farmers' knowledge in the study area. It is expected that the finding would, in specific, be applicable to the farmers of the study area. However, considering social, cultural, economic and geographic resemblance, the findings may also be applicable in general to other parts of Bangladesh. The findings would also help the field workers of different nation building government and non government organizations to improve strategies of action essential for sustainable agriculture. Lastly, the findings would add some new information to the existing body of knowledge.

However, the present study, like other social and extension studies of this nature, had the usual limitations of time and resources. Considering time, money and other resources available to the researcher and to keep the study under manageable limit, the following limitations were considered:

1. The study was confined to only one Union namely Salamabad under Kalia Upazila of Narail district.
2. The study was restricted within a limited number of farmers.
3. It is generalized that many factors may influence the perception of a person. But only selected attributes of the farmers have been considered to discover the linkage or relation between extension workers and characteristics of the farmers.
4. The researcher relied on the data furnished by the respondents from their memory during study.

1.6 Limitations of the Study

The present study was undertaken for ascertaining the Farmers-Extension Workers' relationship and to explore its relationship with the selected characteristics of farmers. In order to keep the study manageable, meaningful, and

considering the time, money and other necessary resources available to the researcher, the following limitations were recognized:

1. The study was confined to Kalia Upazila of Narail district.
2. The characteristics of the farmers are many and varied. But only 10 characteristics were selected for this study.
3. Population for the study was kept confined to the Farmers-Extension Workers relationship during data collection.
4. For information about the study, the researcher was dependent on the data furnished by the randomly selected Farmers-Extension Workers relationship.

1.7 Assumptions of the study

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

- i) The respondents included in the sample were capable of furnishing appropriate data relevant to the questions included in the interview schedule.
- ii) The researcher who acted as the interviewer was well adjusted to the social and cultural environment of the study area. Hence the respondent furnished their opinions without hesitation.
- iii) Views and opinions furnished by the respondents included in the sample were the representative views and opinions of the whole population of the study area.
- iv) The information furnished by the respondents were reliable.

1.8 Statement of the hypothesis

The following null hypothesis was formulated to test the relationships between the selected characteristics of the farmers and farmers-extension workers relationship. The main null hypothesis for this study is stated below:

There is no relationship between selected characteristics of the farmers with farmers-extension workers relationship.

1.9 Definition of Important Terms

Some of the terms used in the present study are defined and interpreted in this section.

Change agent: Rogers (1965) defines, "Change agent is a professional person who attempts to influence adoption decisions in a direction that s/he feels desirable". In addition s/he suggests means for the solution of problems that are faced by the farmers.

Age: Age of the farmers is defined as the period of time in actual years from his birth to the time of interview.

Education: It is defined as the development of desirable knowledge, skill and attitude in an individual through his experience of reading, writing and other related activities.

Farm size: Farm size refers to the total area of land on which a farmer's family carries on farming operation, the area being estimated in terms of full benefit to the farmer's family.

Annual family income: Annual family income refers to the total earnings of a farmer and the members of his/her family both from agriculture and other socially acceptable regular means such as business, service, day labor etc.

Time spent for farm work: Time spent for farm work means the total time spent by a farmer of the study area in his farming activities daily. More time s/he spent

for farm activities s/he would have more contact with extension agents and extension services.

Innovativeness: Innovativeness is the degree to which an individual adopts an innovation relatively earlier than other members of a social system (Rogers, 1983). This was comprehended by the quickness of accepting innovations by an individual in relation to others, and was measured on the basis of time dimension.

Cosmopolitanness: It referred to the degree or the frequency of movement of a farmer to outside places from his own working place, his exposure to the nearest village; own upazila sadar, other upazila, other district sadar and capital or big cities.

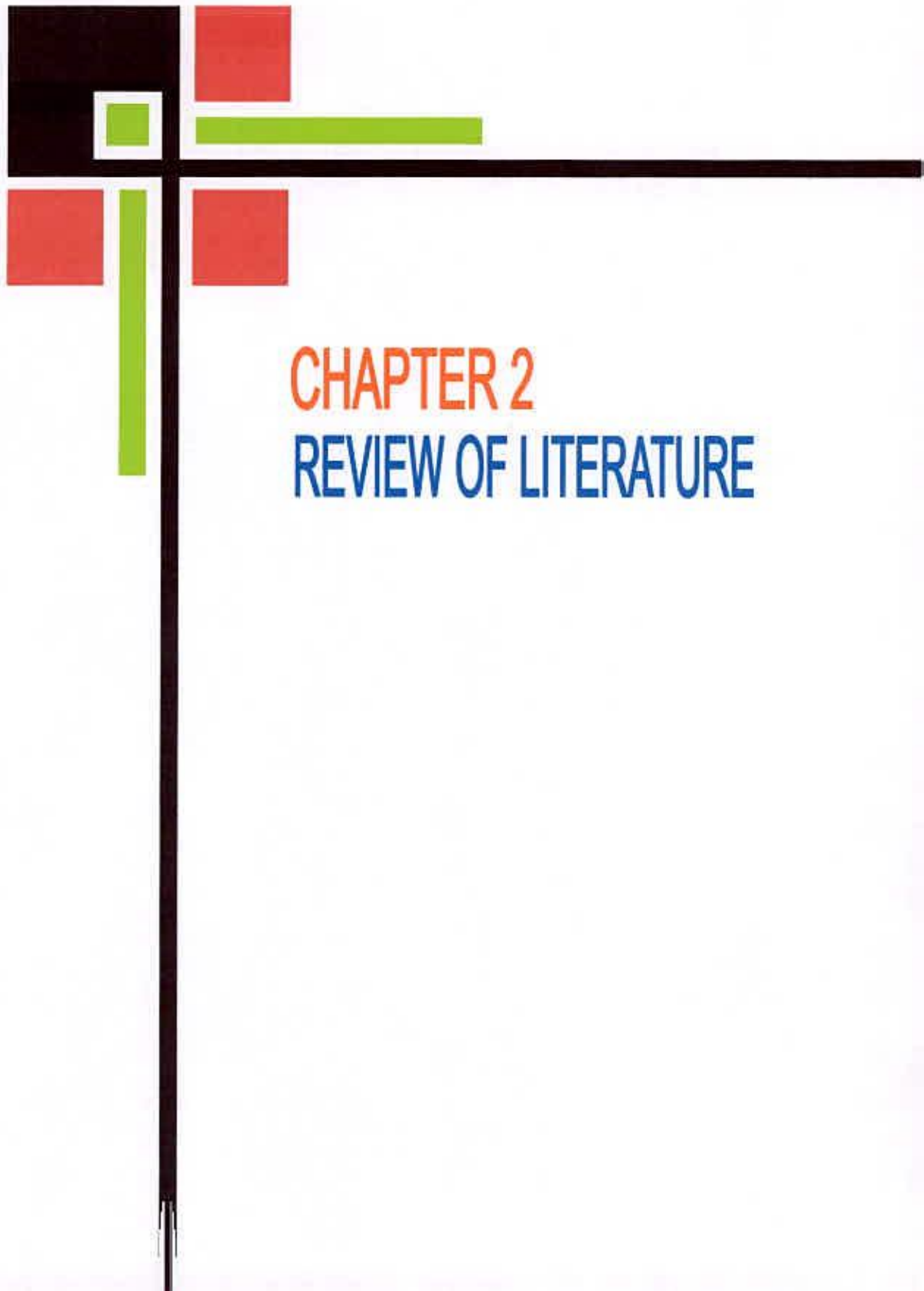
Competition with the fellow farmers: Competition with fellow farmers means contesting the race of farmers in agricultural production. Farmers have undeclared aspiration to harvest more production than their neighbors.

Knowledge on Agriculture: The Agriculture Knowledge means acquiring agricultural information on topics ranging from crops and livestock production and related technologies, government programs and services, and farm business management. It is the extent of basic understanding of the farmers in different aspects of agricultural subject matters i.e. crop, vegetable, livestock, fisheries etc. It includes the basic understanding of the use of different agricultural inputs and practices.

Communication behavior: Communication is the process by which information is passed from source to receiver for the purpose of affecting a desired result. Communication is closely related to decision making; a decision can only be as good as the information on which it is based. Effective communication between members of an organization is dependent on feedback.

Empathy: Empathy is the phenomenon to put oneself in the place of another. The ability to empathize is directly depended on one's ability to feel emotionally other's problem.

Credibility: Credibility is the phenomenon the degree to which the technical advice of the extension worker is believed by his clients. Credibility refers to the objective and subjective components of the believability of a source or message.



CHAPTER 2
REVIEW OF LITERATURE

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this chapter is to review the past researches related to the present investigation. The reviews are conveniently presented based on the major objectives of the study.

The present research was concerned with the Farmers-Extension workers relationship in selected union of Narail District. The researcher observed no directly related literature representing the study readily available in Bangladesh as well as in abroad. However the researcher came across with some expert opinion about the concept of Extension workers and tried his best to collect required information through searching relevant studies, journals and bulletins. Reviews are arranged in this chapter with the following three sections:

Section 2.1: Concepts of Farmers-Extension workers relationship

Different persons and sources have defined Farmers-Extension workers relationship in different ways. Some of these are as follows:

The relationship between Farmers and Extension workers is perhaps one of the most important predictive variables affecting a successful organizational change intervention. Students learn and use the collaborative consulting approach at each stage of a simulated consulting process. Special emphasis is placed on techniques for managing client resistance and transference issues, common concerns also encountered in the relationship between psychotherapist and patient (Microsoft Encarta, 2006).

The change agents can bring about changes in farmer's knowledge, skills, thoughts, and attitudes. In other words, they influence the client systems to make changes in a direction that will lead them to have better farms, homes and community life. Change agents help the people to help themselves and teach the clients how best to

solve their own problems with minimum Government aid. Further they help the rural people to understand the complex social, economic and national problems confronted by them (Encyclopedia Britannica, 2005).

Rahman (1966) conducted a study on the use of communication sources by the registered jute seed growers of kalia Upazila. The percentages of farmers using the sources were as follows:

- Extension agent, 99%
- Friend and neighbor, 68%
- Model farmer and manager, 52%
- Office call, 52%
- Upazila training and development centre, 36%
- Farm and home visit, 43%

Sawhney (1968) conducted a research to explore the relationship the use of information sources to the adoption stages and also to the characteristics of farmers. He categorized seventeen information sources into personal-localite, personal-cosmopolite, and mass media. Personal-localite sources included family members, neighbors and friends, cooperative storeman, shop keepers and farmers own observation from the neighbor's farms. The personal cosmopolite category divided into individual contact media such as farm and home visits, result demonstrations and office calls and group contact media such as method demonstration meeting, informal group discussion and field days. The mass media included exhibits, films, posters and flannelgraphs, publications, radio and newspapers. The extent of use of 8 media was measured by the percentage of citations which were as follows:

- Farm and home visits, 20.9%
- Method demonstrations, 18.4%
- Result demonstration meetings, 11.6%
- Family members, 9.8%
- Neighbours and friends, 7.4%



- Informal group discussion, 7.1%
- Office calls, 4.2%
- Film, posters, and flannelgraph, 2.2%

Razzaq and Chaudhuri (1963) in a study found that demonstrations, lectures, meetings and exhibitions were mostly used while radio and personal contacts were occasionally used as sources of information by their clients.

Gray (1950) indicated that few researches have so far been conducted in Bangladesh on client- change agent relationship for farming information. It was therefore, necessitated to undertake a research to ascertain the extent of relationship between the change agents of different agricultural agencies on the one hand and the farmers on the other. What personal characteristics of the farmers were related to their extent of contact with the change agents, in addition to exploring other associated phenomena involved in the process.

Components of Farmers-Extension Workers relationship

Krech et al. (1962) have defined Farmers-Extension workers relationship as systems of interrelated components in the following explanations:

NAADS seeks to explore the use of community extension workers to overcome some of the issues outlined above, but most of all to ensure that adequate advisory services reach all categories of farmers cost-effectively and sustainably. The main elements of the community extension worker concept include the community, the community extension workers, and the service providers.

The Community is described as group of people living and or working in a defined geographical and social boundary; has leadership and decision making processes; and consists of diverse social, cultural and economic groups. They are the direct or indirect beneficiaries of the services.

The Community Extension Worker is the main actor, living and deriving a livelihood within the community, but is not necessarily born there. Hence a CEW is accessible and understands the community's strengths, vulnerabilities and aspirations better than usually more educated, professional extension agents. S/he knows the language and has intrinsic understanding of community cultural norms, customs and practices. CEWs are capable animators who can persuade or attract others to good farm practices through teaching, visiting and demonstration in the process of carrying out their farm work.

Formation of Farmers-Extension Workers relationship

It is important to know the process of Farmers-Extension workers relationship formation within the individual in order to ensure more accurate prediction about their behavior and to have greater control over action. Many factors are responsible to Farmers-Extension workers relationship formation. Because the overt behavior of an individual is the result of interaction of several factors (Kendler, 1963).

From the results of different experiments and observations, Krech et al. (1962) enlisted individual's wants, information, group affiliations, and personality as factors for Farmers-Extension workers relationship formation. They said that, the individual develops Farmers-Extension workers relationship while coping with various problems in trying to satisfy his wants and unfavorable Farmers-Extension workers relationship towards-objects and persons that block the achievement of his goal.

Individual's physical condition, heredity, environment, knowledge, habits religious beliefs, and psychological motives have also been incorporated as the factors for the erection and development of Farmers-Extension workers relationship (Canfield, 1960). By including these factors actually many of the personality traits were made responsible for attitude construct.

According to Asch (1952) a Farmers-Extension workers relationship is formed through organization of experiences and on the basis of data with reference to an

object. Whereas, Goode (1945) in his Dictionary of Psychology explained that Farmers-Extension workers relationship are the by-product of an individual's experience, and have their bases in inner urges, acquired habits and the environmental influence by which he is surrounded.

Doob's (1948) analysis of Farmers-Extension workers relationship formation takes into account the following factor:

- **Goal response** - the response pattern or patterns which are anticipated.
- **Afferent** - habit strength - the strength of the bond between the existing Farmers-Extension workers relationship and the evoking stimulus patterns, including the gradients of generalization discrimination.
- **Efferent** - habit strength - the strength of the bond between the existing Farmers-Extension workers relationship and evoked responses including over time.
- **Perception** - the drive orienting the individual to play attention to the stimulus pattern evoking the attitude.
- **Drive** - the strength of the stimuli.
- **Interaction** - the strength of the other Farmers-Extension workers relationship.
- **Social significance** - the evaluation in the society of the Farmers-Extension workers relationship along with its direction (e.g. positive, negative, neutral, etc.)

Changes of Farmers-Extension Workers relationship

Islam *et al.* (2000) stated that the Farmers-Extension workers relationship of an individual is not a static phenomenon. There are several factors which will help to change Farmers-Extension Workers relationship, while there are factors which might resist such change. The major factors in this regard are:

Radhakrishna *et al.* (1994) emphasize that the leadership role of extension workers has become an increasingly critical element in the successful performance of

extension programmes. Havelock (1973) identified four leadership functions of extension worker, namely, as a catalyst, solution giver, process helper and resource linker. This means extension workers as leaders should raise the awareness of farmers, form functional farmers groups and make decision for solution together with farmers. Extension workers, who possess the desire to lead, may enhance their skills and abilities required for the leadership role that might influence their performance and successes. Furthermore, the importance of the leadership skills has become widely acknowledged as explanation of personnel and organizational performance in the various employment sectors. In the context of agricultural extension organization, skilled extension workers are needed to coordinate human, capital and material resources required to accomplish the goals of agriculture extension services. So, leadership in extension contexts is indeed a social function which is necessary for the achievement of collective objectives. It can be said that the agricultural extension leadership within a rural community is not just a position in a hierarchy or a chain of commands in extension system, but it involves actions of the extension worker as a leader. It is a kind of mutual interaction between extension worker and farmers.

The performance measures for the quality of extension workers assess their ability to perform the objectives of extension programs and outcomes set in the programs.

Quantity of work: Quantity of work refers to completion of assigned work within the prescribed time limits.

Attendance at work: Attendance at work refers to the extension workers' willingness to work on a timely basis, for example, no absence without good excuse and or reports for work late, attendance in terms of participation in extension training sessions and regular staying on the daily job.

Feedback of extension activities: The feedback of extension activities as dimension of job performance can be operationally defined as the tasks that extension workers have to perform in order to accomplish successful feedback concerning strengths and weaknesses of carrying out extension activities.

Client's satisfaction: Agricultural extension services, like other public sector services, have seen an increased emphasis on measuring quality of programs through client satisfaction surveys (Radhakrishna, 2002). In agriculture extension contexts, however, client satisfaction refers to the way a customer feels about the agriculture extension program on scales that range from very satisfy to very dissatisfy.

Section 2.2: Review of previous research findings related to Farmers-Extension workers relationship.

Podder and Kashem (2000) studied on use of extent of contact media by the farmers in the adoption of mehersagar banana. They concluded that about half (47 percent) of the growers had medium adoption compared to 14 percent low adoption and 39 operation of mehersagar banana. More adoption means more interaction between farmers and extension workers. So, from the study it is revealed that Farmers- Extension workers relationship ranged from low to medium.

Muttaleb et al. (1998) found that overall adoption of plant protection practices was medium. Among the plant protection practices high adoption were observed in fungicides, insecticides and soil treatment and low adoption were found in suberization of cut tuber hand picking of diseased plant.

Hasan (1996) found in his study that the highest proportion (44 percent) of the respondents had medium adoption, compared to 26 percent low adoption and 3 percent high adoption in respect of selected agricultural technologies. The study highlights the various constraints affecting the extent of adoption of technology which in turn deters effective pest control and high cost of improved farm equipment.

Islam (1996) carried out a study on farmers' use of indigenous technical knowledge (ITK) in the context of sustainable agricultural development. He found that the highest proportion (42.73 percent) of the respondents belonged to the lower user

category as compared to 41.82 percent in the moderate user category and 15.45 percent in the higher user category, respectively. That is, if extension workers worked to diffuse indigenous technical knowledge among the client system then it could be said with no hesitation that there is good relationship between farmers and extension workers.

Hilgard (1963) referred farmers' perception as the process by which we observe the world of objects and other people. Perceiving is the activity of an organism. The individual brings along with him the influences of his past experiences and his present needs and wishes as he faces the world. No one sees the world exactly as it is, and an individual's perception depends partly on what he himself is. From this statement it could be said more easily that if farmers perceive their roles properly and extension workers perceive farmers problem empathetically there would be stronger relationship between them.

Forgus et al. (1966) defined farmers' perception as: "The way the individual gains knowledge about his environment in this quest for adaptive behavior is of prime importance. The gaining of such knowledge necessitates the extraction of information from the vast array of physical energy which stimulates the organism's senses. Only those stimuli which have cue value, i.e., which trigger some kind of reactive or adaptive action from the individual, should logically be called perception". Extension workers in carrying out their responsibilities must understand farmers' perception about technologies and their consequences. For knowing farmers' perception extension workers must keep regular contact with farmers. Then relationship between farmers and extension workers will be strengthened.

Section 2.3: Review of previous research findings related to relationship of selected characteristics and Farmers-Extension Workers relationship.

2.3.1 Age and Farmers-Extension Workers relationship

Rana (2007) in his study found that there was insignificant relationship between age of the farmers' and Farmers-Extension workers relationship activities in the jurisdiction of ASA.

Ahmed (2006) observed that age of the shrimp farmers in Khulna District had no significant relationship with the Farmers-Extension workers relationship towards shrimp farming.

Haque (2006) observed that there is negative relationship between age of the conventional farmers and their Farmers-Extension workers relationship towards organic farming.

Haque (2003) found that age of the farmers had no significant relationship with their Farmers-Extension workers relationship in a selected union of Narail District.

Sarder (2002) reported that age of the farmers had no significant relationship with their Farmers-Extension workers relationship towards the activity of Bangladesh Agricultural University Extension Center (BAUEC).

Sarker (2001) found that age of the world vision farmers had no significant relationship with their Farmers-Extension workers relationship towards organic homestead gardening practices.

Paul (2000) found that there was negative significant relationship between age and Farmers-Extension workers relationship towards the use of Urea Super Granule (USG).

Parveen (1993) found that age of the modern village women had influenced their Farmers-Extension Workers relationship towards homestead agriculture production. But in case of the traditional village age was not associated with their Farmers-Extension workers relationship toward homestead agricultural production.

2.3.2 Education and Farmers-Extension Workers relationship

Hossain (2006) concluded that the education of the farmers had an insignificant and a positive relationship with their Farmers-Extension Workers relationship of selected HYV rice. Similar result was also observed by Khan (1993).

Haque (2003) revealed that education of the farmers had an insignificant and positive relationship with their empathy of modern rice varieties.

Hossain (2003) conducted a study on farmers' knowledge and Farmers-Extension Workers relationship of modern Boro rice cultivation practices and found that there was insignificant but positive relationship between the concerned variables.

Aurangozeb (2002) conducted a study on Farmers-Extension Workers relationship of integrated farmings technologies by the rural women in RDRS. He found that there was a positive relationship between education and their Farmers-Extension Workers relationship on integrated farming technologies.

Islam (2002) found that education of the farmers had a positive insignificant relationship with their Farmers-Extension Workers relationship of modern agricultural technologies.

Sardar (2002) conducted a study on Farmers-Extension Workers relationship of IPM practices by the farmers under PETRRA project of RDRS. He found that education of the farmers had a positive insignificant relationship with their Farmers-Extension workers relationship of IPM practices.

Hussen (2001) conducted a study on farmers' knowledge and Farmers-Extension Workers relationship of modern sugarcane cultivation practices. He found that education of the growers had a positive insignificant relationship with their Farmers-Extension Workers relationship of modern sugarcane cultivation practices.

Rahman (2001) conducted a study on knowledge, attitude and adoption of the farmers regarding Aalok-6201 hybrid rice in sadar upazila in Mymensingh district

He found that academic qualification of the farmers had an insignificant positive relationship with their adoption regarding Aalok-6201 hybrid rice.

Rana (2007) in his study found that there was no significant relationship between education of the women beneficiaries and attitude towards activities of ASA.

Ahmed (2006) observed that educational level the farmers had significant and positive relationship with the attitude of the farmers towards shrimp cultivation.

Haque (2003) found that education of the farmers had significant and positive relationship with their attitude towards extension activities of Department of Agricultural Extension (DAE).

Ali (2002) found that educational qualification of BSs had negative relationship with their attitude towards NGOs activities.

Sarker (2002) reported that education of the farmers had significant and positive relationship with their attitudes towards the activity of Bangladesh Agricultural University Extension Center (BAUEC).

Nurzaman (2000) observed in his study that education of the FFS and non-FFS farmers, were positive correlated with their attitude towards IPM.

Habib (2000) found that education of the BSs had significant relationship with their attitude towards the use of agrochemicals.

Verma and kumar (1991) reported that there was a positive and significant relationship between education and attitude of farmers towards buffalo management in no-adopted village but the relationship was not significant in adopted village.

2.3.3 Farm Size and Farmers-Extension Workers relationship

Rahim (2007) observed that the relationship between contact score and land owned by the respondents was found to be statistically insignificant at 0.01 level of probability.

Karim (2006) found that through the medium and large holdings had certain degree of influence upon the use of information media by the rice growers, but

the relationship was found to be statistically insignificant. It is evident that large holding farmers maintain good relations with extension workers.

Sawhney (2003) reported that farm size was related to differential use of information sources and media in the following way: with increasing farm size there was increasing use of cosmopolite sources and diminishing use of personal localite sources.

Regan and Warlow (2001) hat farm operators having farm observed size over 150 acres used ODAF publications and contacted agricultural representatives to a greater extent than those having smaller farm size.

Karim (2002) in his study with cotton farmers found that the influence of farm size on the use of information media by the cotton growers was found to be statistically insignificant.

Haque (2000) reported that a substantial and positive relationship existed between the variables, size of farm and use of information sources and the relationship was significant at 0.01 level of probability.

Nurzaman (2000) observed in his study that farm size of the FFS and non-FFS farmers had no significant relationship with their empathy towards IPM.

Rahman (2000) found a positive and significant relationship between farm size and use of communication sources at 0.01 level of probability.

Habib (2000) found that farm size of the BSs had no significant relationship with their credibility towards the use of agrochemicals.

2.3.4 Competition with the fellow farmers and Farmers-Extension Workers relationship

No review of literature was found on this topic.

2.3.5 Time spent for farm work and Farmers-Extension Workers relationship

No review of literature was found on this topic.

2.3.6 Annual family income and Farmers-Extension Workers relationship

Sawhney (2007) reported that income was related to differential use of information media. He stated that with increasing income there was increasing use of cosmopolite sources and diminishing use of personal localite sources.

Ahmed (2006) reported that annual family income of farmers had no relationship with their communication sources towards shrimp cultivation.

Sarker (2002) reported that annual family income of the farmers had no significant relationship with their credibility towards the activity of Bangladesh Agricultural University Extension Center (BAUEC).

Paul (2000) found in his study that there was significant and positive relationship between annual family income and empathy of farmers towards the use of Urea Super Granule (USG).

Nurzaman (2000) observed in his study that annual family income of the FFS and non-FFS farmers had positive significant relationship with their empathy towards IPM.

Habib (2000) found that annual family income of the BSs had significant relationship with their credibility towards the use of agro-chemicals.

Bari (2000) observed in his study that annual family income of farmers had no relationship with their communication behavior towards hybrid rice AALOK 6201.

Kashem and Hossain (1987) found that income of the small farmers had no significant relationship with their empathy towards community of the farmers.

Rogers and Capener (1977) reported that farmers with larger annual farm incomes had relatively more contact with their country Extension Agent than those having lower income.

2.3.7 Experience in farming and Farmers-Extension Workers relationship

Rana (2007) in his study found that there was no significant relationship between experience in farming of the women beneficiaries and communication behavior towards activities of ASA.

Haque (2003) found that experience in farming of the farmers had no significant relationship with their empathy towards extension activities of Department of Agricultural Extension (DAE).

Nurzaman (2000) observed in his study that experience in farming of the FFS farmers had positive correlation with their credibility towards IPM.

Habib (2000) found that experience in farming of the BSs had a positive significant relationship with their empathy towards the use of agro-chemicals.

Islam and Kashem (1997) observed that experience in farming of the farmers had a negative relationship with their communication sources towards agro-chemicals.

Noor (1995) found that experience in farming of the farmers had positive significant relationship with their empathy towards the cultivation of high yielding varieties of potato.

2.3.8 Knowledge on agriculture and Farmers-Extension Workers relationship

Ahmed (2006) reported a positive relationship between agricultural knowledge of the farmers with their extension contact.

Haque (2003) found that agricultural knowledge of the farmers had no significant relationship with their communication sources towards extension activities of Department of Agricultural Extension (DAE).

Sarker (2002) reported that knowledge about vegetable cultivation of the farmers had significant relationship with their empathy towards the activity of Bangladesh Agricultural University Extension Center (BAUEC).

Sarker (2001) found that the knowledge of the World Vision farmers had a significant positive relationship with their credibility towards organic homestead gardening practices.

Bari (2000) observed in his study that agricultural knowledge of farmers had no relationship with their empathy towards hybrid rice AALOK 6201.

Nurzaman (2000) revealed that agricultural knowledge of the FFS farmers and non-FFS farmers had significant relationship with their Farmers-Extension workers relationship on IPM

2.3.9 Innovativeness and Farmers-Extension Workers relationship

Rogers and Capener (1989) pointed out those farmers who had higher adoption scores made significantly greater use of the country Extension Agent as a source of information. The early adopters had the most contact with their country Extension Agent and the laggards had the least. The innovators had above average contact

with their country Extension Agent, but less than the early adopters. This finding is consistent with the hypothesis that innovators secure much of their information about new practices direct from extension specialists and research workers. They are less likely to utilize their country Extension Agent as a source of information than are the early adopters.

2.3.10 Cosmopolitanism and Farmers-Extension Workers relationship

Rana (2007) in his study found that there was insignificant relationship between cosmopolitanism of the women beneficiaries and communication sources towards activities of ASA.

Ahmed (2006) reported that cosmopolitanism of farmers had no relationship with their communication sources towards shrimp cultivation.

Haque (2003) found that cosmopolitanism of the farmers had insignificant and negative relationship with their empathy towards extension activities of Department of Agricultural Extension (DAE).

Afrad (2002) cosmopolitanism of the farmers had positive significant relationship with their credibility towards vegetable cultivation.

Siddique (2002) observed that cosmopolitanism of the farmers had a positive relationship with their empathy towards improved winter vegetable production.

Nurzaman (2000) observed in his study that cosmopolitanism of the FFS and non-FFS had no significant relationship with their communication sources towards IPM.

Habib (2000) found that cosmopolitanism of the BSs had no significant relationship with their Farmers-Extension workers relationship towards the use of agro-chemicals.

Islam and Kashem (1997) found that cosmopolitanism of the farmers had positive significant relationship with their empathy towards agrochemicals.

Noor (1995) found that cosmopolitanism of the farmers had positive significant relationship with their credibility towards the cultivation of high yielding varieties of potato.

2.4 The conceptual framework of the study

The title of the study is Farmers-Extension Workers relationship in a selected union of Narail District. The major objectives of this study were i) to determine and describe Farmers-Extension Workers relationship ii) to determine and describe some selected characteristics of farmers and (iii) to explore the relationship between the selected characteristics of farmers and Farmers-Extension Workers relationship. The summing of the review of literature are, concepts of Farmers-Extension workers relationship, review of previous research findings related to Farmers-Extension workers relationship and review of previous research findings related to relationship of selected characteristics of farmers with their Farmers-Extension workers relationship.

The present study tried to focus two concepts; first Farmers-Extension workers relationship in a selected union of Narail District; and the second, the selected characteristics of farmers. It is impossible to deal with all characteristics in a single study. It was therefore, necessary to limit the characteristics only related to one's. Hence the characteristics include age, education, farm size, competition with the fellow farmers, time spent for farm work, annual family income, experience in farming, knowledge on agriculture, innovativeness and cosmopolitaness. The conceptual framework of the study has been presented below:



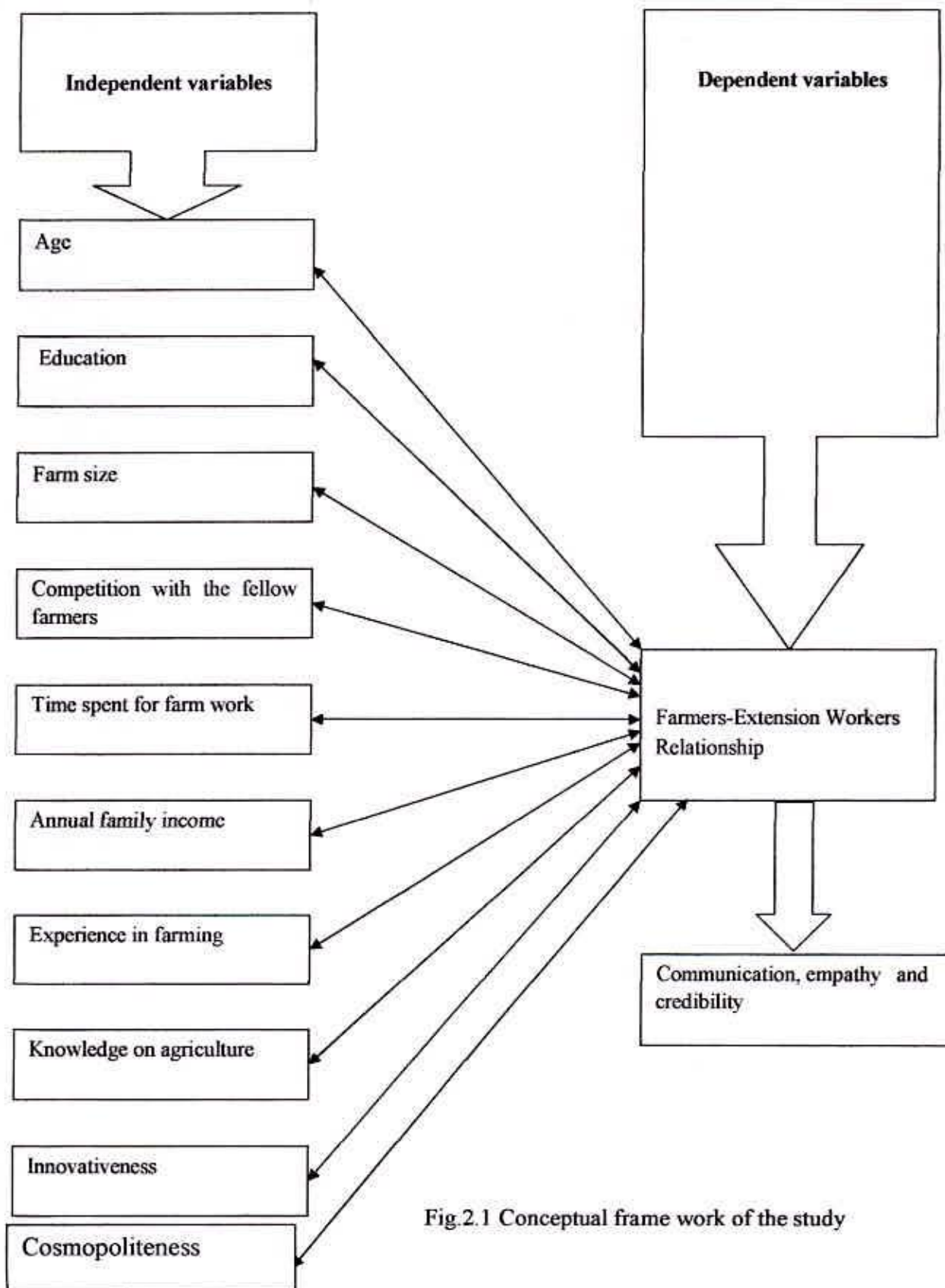
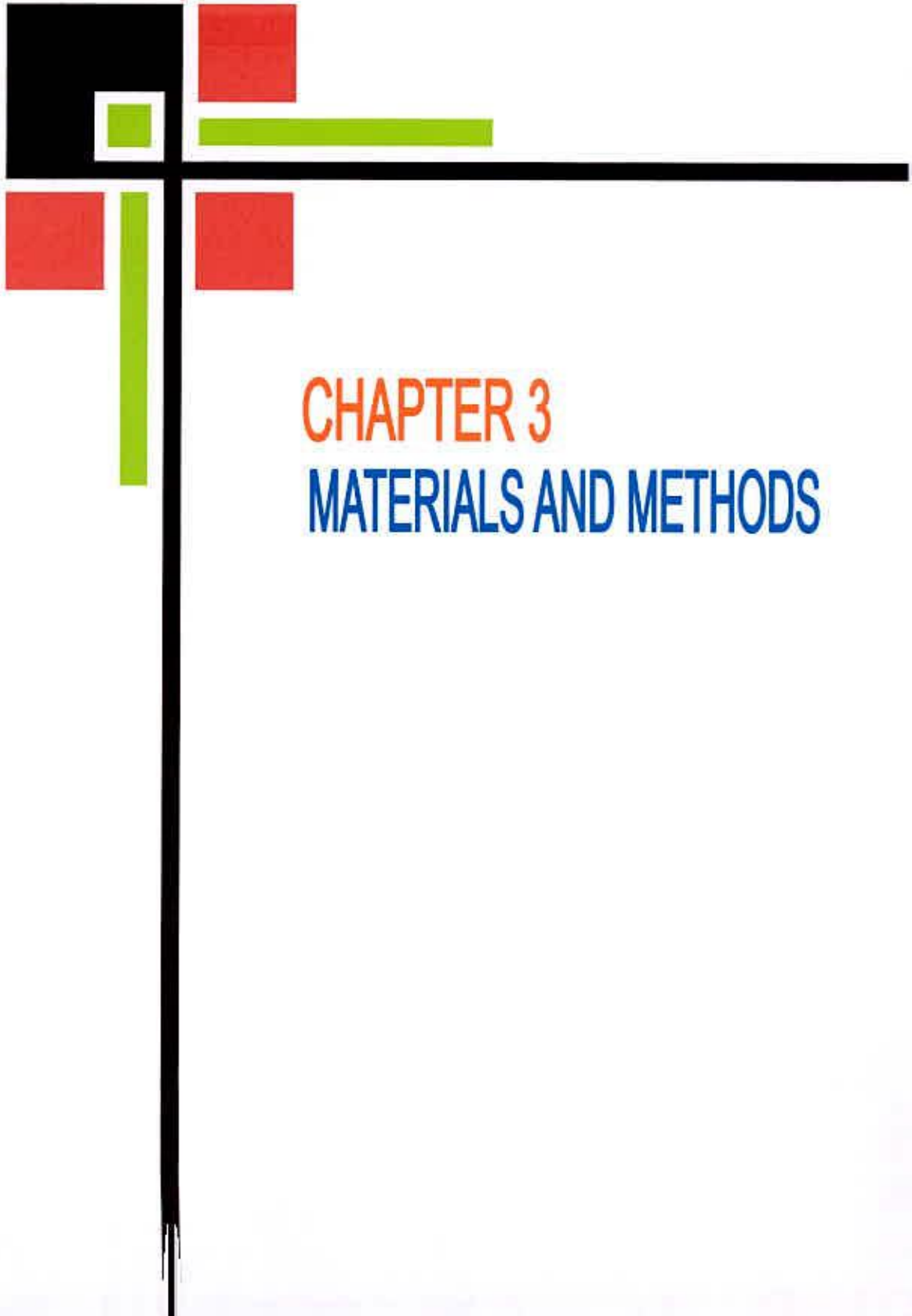


Fig.2.1 Conceptual frame work of the study



CHAPTER 3
MATERIALS AND METHODS

CHAPTER 3

METHODOLOGY

Methodology leads the researcher to achieve his/her research objectives in a proper way. Methodology in social science consists of section of locale of the study, population and sampling procedure, preparation of interview schedule, data collection procedure, measurement of variables and method of analysis. Every aspect of methodology acts as the vigor of the research. More the accurate methodology more the valid and reliable data and more appropriate research findings. So researcher was very much careful in selecting components of methodology. Below the components of methodology have been discussed step by step.

3.1 The Locale of the study

The present study was conducted at Salamabad union in Kalia Upazilla under Narail District of Khulna division purposively. There were 13 villages in Salamabad union. The researcher selected five villages as the locale of the study randomly. The villages are Joypur, Mohammadpur, Baka, Debipur and Bilbouse. Considering time, money and resources the study was kept confined to randomly selected five villages. A map of Narail District showing the locale of the study and a map of Kalia upazilla showing Salamabad union have been presented in Figure 3.1 and 3.2 respectively.

3.2 Population and Sample of the Study

A list of farmers of the five selected villages viz. Joypur, Mohammadpur, Baka, Debipur and Bilbouse of Salamabad union was prepared by the researcher with the help of the Sub-Assistant Agriculture Officer (SAAO) of Kalia Upazila Agriculture Office. The total numbers of farmers in these selected five villages were 380. Proportionately 30 percent of the farmers were randomly selected as representative sample by using a Table of Random Numbers (Kerlinger, 1973). Thus, the sample

size became 116. A reserve list of 19 numbers of farmers (5% of the population) was also prepared.

The distribution of the farm population, sample and respondents of a reserve list are shown in Table 3.1.

Table 3.1 Distribution of the population, sample and respondents included in the reserve list

Name of the villages	Farm population	Sample size	Reserve list
Joypur	90	27	5
Mohammadpur	75	23	4
Baka	46	14	2
Debipur	100	31	5
Bilbouse	69	21	3
Total	380	116	19



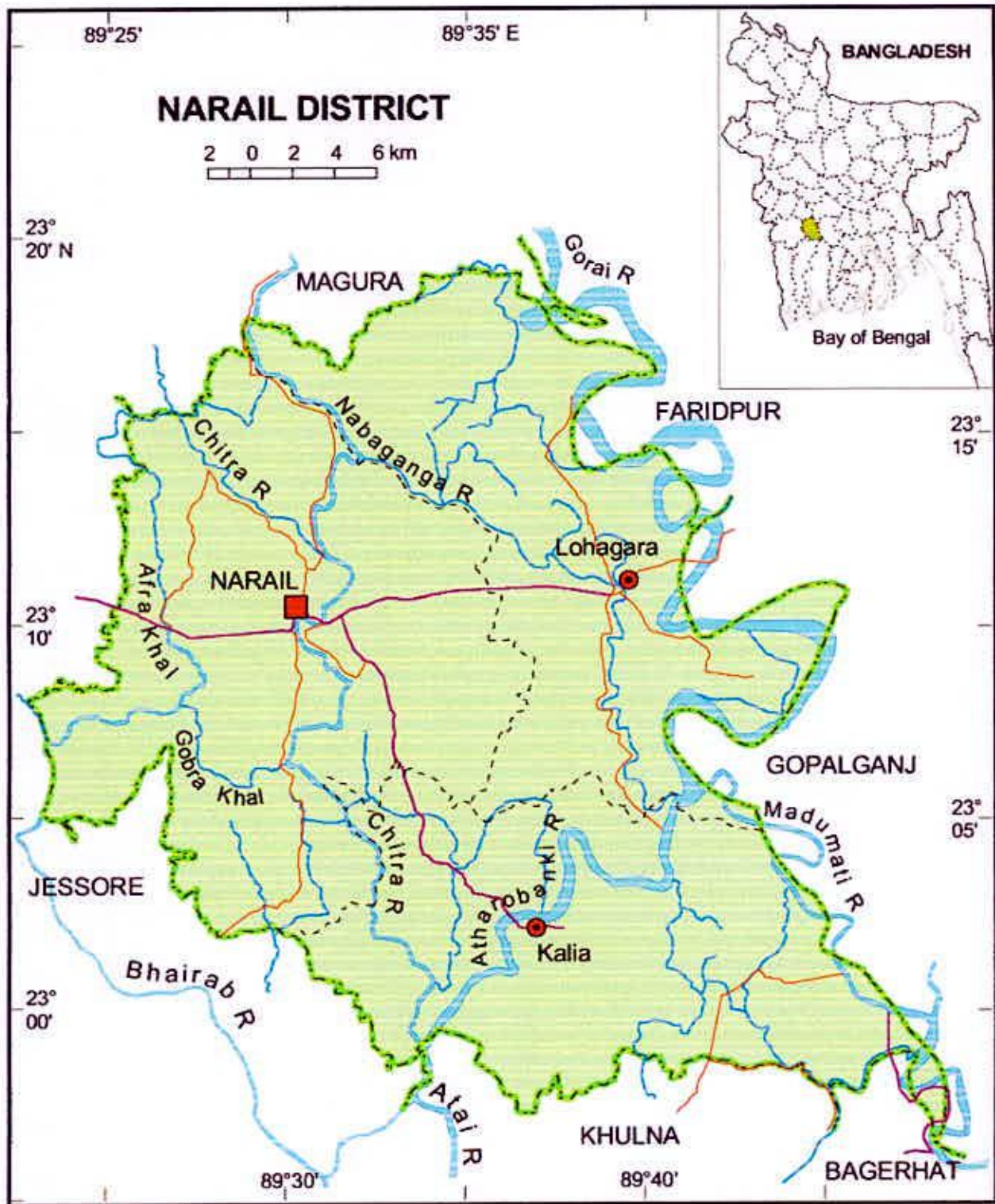


Figure: 3.1 A map of Narail District showing Kalia Upazil

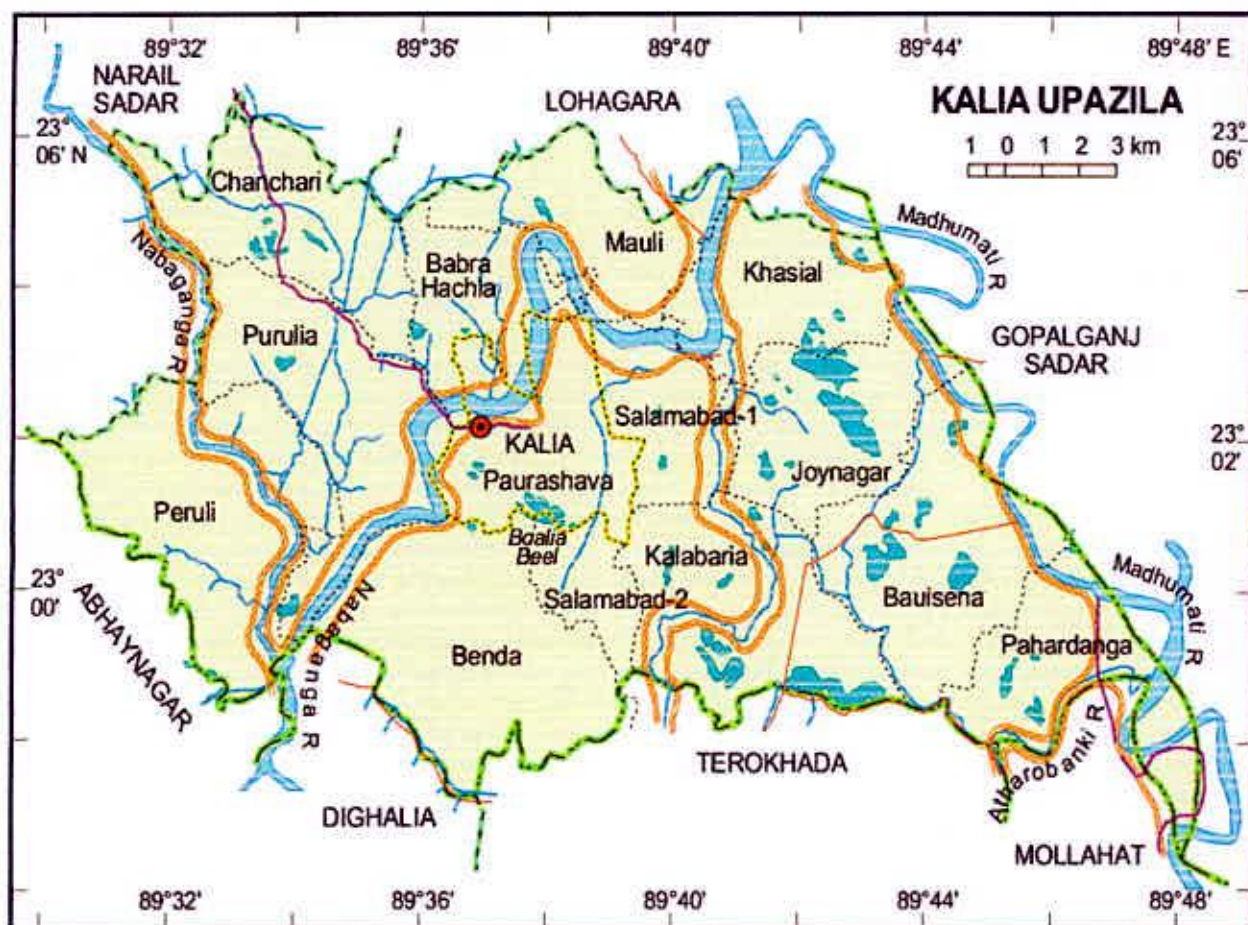


Figure: 3.2 A map of Kalia Upazila showing the study area

3.3 Preparation of data gathering instrument

Keeping the objectives and variables to be studied in view an interview schedule was constructed. The schedule was prepared in Bangla with easy language so as to enable the respondents to understand it. Appropriate scales were developed (placed under variables) for gathering required information to measure age, education, farm size, competition with the fellow farmers, time spent for farm work, annual family income, experience in farming, knowledge on agriculture, innovativeness and cosmopolitaness.

After devoting considerable time and efforts to prepare the interview schedule, the researcher felt further improvement of the schedule. The interview schedule was pre-tested with 20 farmers under actual situation. Corrections, alterations and

adjustments were done in the schedule on the basis of the pre-test result. Then it was finalized and ready for data collection.

An English version of the interview schedule has been presented in Appendix-I.

3.4 Method of data collection

A house to house survey was made by the investigator for collecting data from the selected 116 farmers of the study area. A Bengali version interview schedule was used for the purpose. The respondents to be interviewed on a particular day were informed earlier through the local leaders so that they might be available at their farms or homes. The data collection was started on June 15, 2009 and completed on June 29, 2009. No serious problem was faced by the investigator during data collection.

3.5 Data processing and statistical analysis:

The collected data were coded, tabulated and analyzed in accordance with the objectives of the study. Descriptive statistical procedures like frequency counts, percentage, mean, standard deviation etc. were used to analyze the observed data. After completion data collection, qualitative data were converted into quantitative form by means of appropriate scoring technique whenever applicable. SPSS computer programme was used for analysis of data. In order to find out the relationship between the selected dependent and independent variables, Pearson's Product Moment Correlation Coefficient (r) was used as the basis of rejection of null hypothesis.

3.6 Selection of dependent and independent variables

The researcher employed adequate care in selecting the variables of the study. Considering personal, economic, social and psychological factors of the rural community, time and resources availability to researcher, reviewing relevant literature and discussing with relevant expert, the researcher selected the variables for the study.

Two types of variables were used in this study e.g., independent and dependent variables. Townsend (1953) defined an independent variable as that factor manipulated by the experimenter in his attempt to ascertain its relationship to an observed phenomenon. He also defined a dependent variable as that factor which appears, disappears, or varies as the experimenter introduces, removes or varies the independent variables.

3.7 Independent variables

The following selected characteristics of the farmers were considered as independent variables of this study:

- a) Age
- b) Education
- c) Farm size
- d) Competition with the fellow farmers
- e) Time spent for farm work
- f) Annual family income
- g) Experience in farming
- h) Knowledge on agriculture
- i) Innovativeness
- j) Cosmopolitaness



3.8 Dependent variables

In this study the dependent variable was Farmers- Extension workers relationship. It was measured in three dimensions such as communication, empathy and credibility.

3.9 Measurement of variables

Measurements of variables constitute an important task of social research. This section contains procedures for measurement of independent variables and dependent variables of the study.

3.9.1 Measurement of independent variables

3.9.1.1 Age

Age of a respondent was measured by counting the years from his birth to the time of interview. Age was measured in terms of years on the basis of his response. A score of one (1) was assigned for each year of age. It was measured in complete years as reported by a respondent. For example, a respondent of 36 years of age scored 36.

3.9.1.2 Education

Education was defined as the development of an individual's reading and writing abilities through attendance in formal and informal educational institutions. It was measured by computing an education score on the basis of his number of years of schooling completed in response to question number 2 of the interview schedule (Appendix A). A farmer who could not read and write was given a score of zero and who could sign his name but could not read was given a score of 0.5. A score of one (1) was given for each year of formal schooling s/he completed. For example, if a respondent passed class VII or equivalent, her/his score was taken as 7.

3.9.1.3 Farm size

The farm size of a respondent referred to the total land area on which his family carried out farming operations, the area being estimated in terms of full benefits to the family. The farm size measured for each respondent in hectare by the following formula:

$$FS = A_1 + A_2 + \frac{1}{2}(A_3 + A_4) + A_5 + A_6 + A_7$$

Where,

FS = farm size

A_1 = homestead area

A_2 = own land under own cultivation

A_3 = own pond

A_4 = own land given for share croppings

A_5 = land taken for share croppings

A_6 = land taken on lease from others

A_7 = others

The total area, thus, obtained was considered as his farm size.

3.9.1.4 Competition with the fellow farmers

Competition with the fellow farmers of a respondent was measured by computing a competition score on the basis of 4 categories questions answered by the respondents. This score, thus, could range from 4 to 16, where 16 indicate high competition and 4 for very low competition. It appears in item no.4 in the interview schedule.

3.9.1.5 Time spent for farm work

The time spent for farm works was measured by asking how much time a respondent spent in a day. Reasonably it was measured in terms of hour. A score of one (1) was assigned for each hour.

3.9.1.6 Annual family income

This refers to the total earnings earned by all family members of a respondent from farming, service, business and other sources as contained in the question no. 6 of the interview schedule. The sources of income were agriculture, business, job, wage and others. The total agricultural production was converted into Taka as per local market rate and was added with other sources of direct income. A score of one was assigned for each one thousand Taka.

3.9.1.7 Experience in farming

Experience in farming was known by asking how long a respondent was engaged in farming. It was measured on the basis of year of involvement in farming. A score of one (1) was assigned for each year of his experience. It appears in item no.7 in the interview schedule.

3.9.1.8 Knowledge on Agriculture

Knowledge on Agriculture of a farmer was measured by computing an 'knowledge on agriculture score' based on 15 questions on different aspects of agriculture (plants, pests, pesticides, etc.). The questions can be seen in item number 9 of Appendix A. Each of the questions carried a full weight of 1 score. Full score was given to a respondent for each correct answer and '0' was assigned for wrong or no answer. However, a partial score was given to any partially correct answer to a question. The 'knowledge on agriculture scores' of the farmers could range from '0 to 15', where, '0' indicated no knowledge on agriculture and '15' very high knowledge on agriculture.

3.9.1.9 Innovativeness

Innovativeness is the degree to which an individual adopts an innovation relatively earlier than other members in a social system (Rogers, 1995). Innovativeness of a farmer was measured on the basis of how much time a respondent needed for innovation decision just after hearing about a particular innovation. The respondents were categorized and assigned score in the following manner:

Adoption of innovation	Assigned scores
Within 1 year after hearing about an innovation	4
Within 2 years after hearing about an innovation	3
Within 3 years after hearing about an innovation	2
Within 4 or more year after hearing about an innovation	1
Non adoption of the innovation	0

Innovativeness of a respondent was measured by computing an innovativeness score on the basis of adoption of 12 selected agricultural technologies by the respondents. This score of respondent could range from 0 to 48, while 0 indicating no innovativeness and 48 for high innovativeness.

3.9.1.10 Cosmopolitanness

Cosmopolitanness of a farmer were measured by computing a cosmopolitanness score based on his frequency of visits to selected 7 different places outside his own social system. Each farmer was asked to indicate the number of times he visited each of the seven selected places within a specific period. Weights assigned to his frequency of visiting were as follows:

Place of visit	Nature of visit	Weight assigned
1. Visit to Friends, Relatives house & Other person	Never	0
	1-2 times per month	1
	3-4 times per month	2
	More than 4 times per month	3
2. Visit other Villages	Never	0
	1-3 times per month	1
	4-6 times per month	2
	More than 6 times per month	3
3. Visit to own union parishad	Never	0
	1-2 times per year	1
	3-4 times per year	2
	5 or more times per year	3
4. Visit to other union parishad	Never	0

	1-2 times per year	1
	3-4 times per year	2
	5 or more times per year	3
5. Visit to own Upazila town	Never	0
	1-2 times per year	1
	3-4 times per year	2
	5 or more times per year	3
6. Visit to own district town	Never	0
	1-2 times per year	1
	3-4 times per year	2
	5 or more times per year	3
7. Visit to big cities	Never	0
	1-2 times per year	1
	3-4 times per year	2
	More than 4 times per year	3

Cosmopolitanism score of a farmer was determined by summing up his weights for all the 7 different places. Thus, cosmopolitanism score could range from 0 to 21, where '0' indicated no cosmopolitanism and 21, high cosmopolitanism.

3.9.2 Measurement of dependent variables

Farmers-Extension Workers Relationship was measured in three dimensions, viz. Communication, empathy and credibility. The scores were assigned against each of the dimensions stated below:

3.9.2.1 Communication or communication behavior

A communication media exposure was measured by assigning score for each media contact on the basis of extent of contact with 10 selected media (question no. 11 in the interview schedule in Appendix A). Each respondent was asked to indicate the extent of his contact with each of the 10 selected media in time period. The extent of contact of a respondent was assigned weights for each information source according the following procedure.

Name of the communication media	Extent of contact	Weight assigned
1. Visit to extension worker's office	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
2. Participate in result demonstration	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
3. Participate in method demonstration	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
4. Participate in discussion meetings organized by extension worker	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
5. Attend in field days	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
6. Participate in FINA (Farmers Information Needs Assessment)	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
7. Participate in FFS (Farmers Field School)	Rarely	1

	Occasionally	2
	Frequently	3
	Regularly	4
8. Receive printing material from extension worker	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
9. Attend in farm training	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4
10. Extension worker writes letters	Rarely	1
	Occasionally	2
	Frequently	3
	Regularly	4

Extension media contact score of a farmer was determined by summing up weights of all the communication media. Extension media contact score could range from 10-40, where ten (10) indicated low extension media contact and 40 indicated the highest extension media contact.

3.9.2.2 Empathy

Empathy is the phenomenon to put oneself in the place of another. The ability to empathize is directly depended on one's ability to feel emotionally other's problem. Empathy was measured by assigning score for each empathy item on the basis of his extent of empathy with 10 selected questions (question no. 12 in the interview schedule in Appendix A). Each respondent was asked to indicate the extent of empathy with various degrees. Empathy score of a farmer was determined by summing up assigned weights for all the questions stated as below:

Name of the degree of empathy	Extent of contact	Weight assigned
1. How does extension worker give important to your problem?	Some extent	1
	Medium	2
	High	3
	Very high	4
2. How does extension worker behave with	As an ordinary farmer	1
	As a client	2

you?	Like a friend	3
	As like as relative	4
3. How does extension worker rush to the farmers to see for himself the damage of crop?	Rush very slowly	1
	Rush slowly	2
	Rush leisurely	3
	Rush at once	4
4. How much the appropriate suggestions were given by the extension worker to cope with the natural calamities?	Very low appropriate	1
	Low appropriate	2
	Medium appropriate	3
	Highly appropriate	4
5. How does extension worker solve your problem?	Undecided	1
	By asking farmers	2
	By asking upazila extension officer	3
	Extension worker himself	4
6. How effectively extension worker prepares crop cultivation schedule for you?	Very low effective	1
	Low effective	2
	Medium effective	3
	High effective	4
7. If you are not appropriate in using seed rate, fertilizer dose how extension worker behaves with you?	Do not teach and become severely annoyed	1
	Teaches with negative attitudes	2
	Teaches with annoyance	3
	Teaches input use with patience	4
8. If there is insects infestation in your crop fields how extension worker comes to know the situation?	By rarely visits	1
	By occasional visits	2
	By off and on visits	3
	By regular visits	4
9. During crop cultivation and intercultural operation how frequent extension worker visits your farm & home?	Visits rarely	1
	visits occasionally	2
	Visits often	3
	Visits Regularly	4
10. Assessing your economic condition how effectively extension worker teaches you fertilizer management so that you can save money?	Very low effective	1
	Low effective	2
	Medium effective	3
	High effective	4

Empathy score could range from 10-40, where ten (10) indicated low empathy and 40 indicated the empathy to the highest extent.

3.9.2.3 Credibility

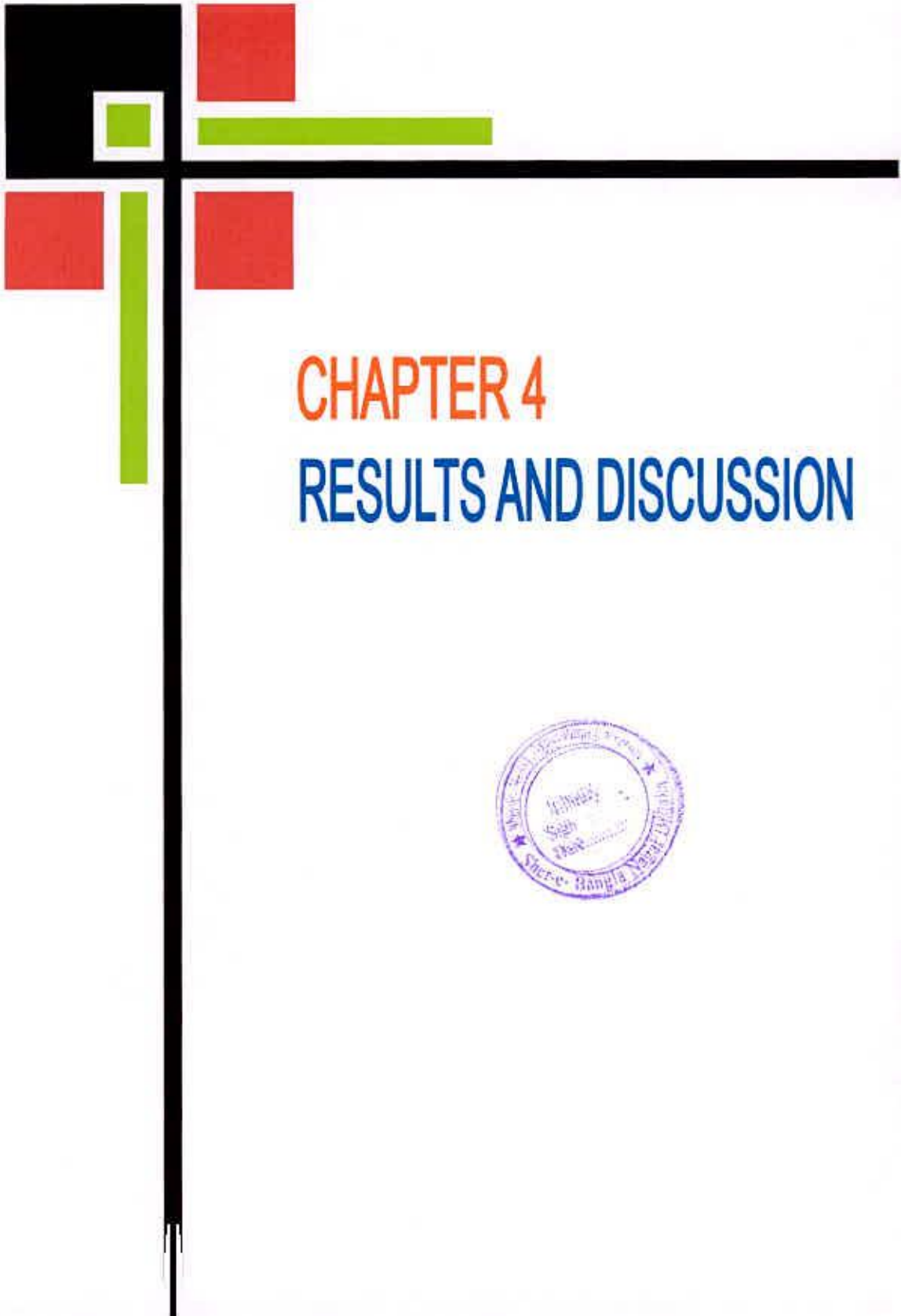
Credibility is the phenomenon the degree to which the technical advice of the extension worker is believed by his clients. Credibility was measured by assigning score for each credibility item on the basis of his extent of credibility with 10 selected questions (question no. 13 in the interview schedule in Appendix A). Each respondent was asked to indicate the extent of credibility with various degrees. Credibility score of a farmer was determined by summing up assigned weights for all the questions stated as below:

Name of the degree of credibility	Extent of contact	Weight assigned
1. How confidently the extension worker plays an important role in disseminating new technology?	Very low confident	1
	Low confident	2
	Medium confident	3
	High confident	4
2. How confidently extension worker understands your field problem?	Very low confident	1
	Low confident	2
	Medium confident	3
	High confident	4
3. How credibly extension worker can identify your agricultural problems?	Very low credible	1
	Low credible	2
	Medium credible	3
	High credible	4
4. How much benefit you got after application of extension workers advice regarding inputs use?	Very little benefit	1
	Little benefit	2
	Medium benefit	3
	Large/big benefit	4
5. To what extent extension worker's advice is useful?	Very low useful	1
	Low useful	2
	Medium useful	3
	High useful	4
6. State the extent of technological knowledge of extension worker from your assumptions?	Very low technological knowledge	1
	Low technological knowledge	2

	Medium technological knowledge	3
	High technological knowledge	4
7. How much do you believe extension worker's advice or suggestions?	Very less believable	1
	Less believable	2
	Believable	3
	Highly believable	4
8. In technological knowledge how better the extension worker than you?	Very low knowledgeable	1
	Low knowledgeable	2
	Medium knowledgeable	3
	Highly knowledgeable	4
9. How much applicable the information that provided by extension worker?	Very low applicable	1
	Low applicable	2
	Much applicable	3
	Very much applicable	4
10. How much do you believe the information provided by extension worker?	Very low believable	1
	Low believable	2
	Much believable	3
	Very much believable	4

Credibility score could range from 10-40, where ten (10) indicated low Credibility and 40 indicated the Credibility to the highest extent.

Overall farmers-extension workers relationship was computed by summing up of scores obtained against communication, empathy and credibility. The overall score could range from 30-120, whereas 30 indicate low relationship and 120 indicate very high relationship.



CHAPTER 4

RESULTS AND DISCUSSION



CHAPTER 4

RESULTS AND DISCUSSION

The findings of this study and their logical interpretation have been systematically presented in different sections of this chapter according to the objectives of the study. The chapter is divided into three sections. The first section deals with the selected characteristics of farmers. The second section deals with the Farmers-Extension Workers Relationship in a selected Union of Narail District. Finally, in the third section, discussions have been made on the relationship between the selected characteristics of farmers and Farmers-Extension workers relationship.

4.1 Selected Characteristics of the Farmers

The findings related to the selected characteristics of the farmers, namely age, education, farm size, competition with the fellow farmers, time spent for farm work, annual family income, experience in farming, knowledge on agriculture, innovativeness and cosmopolitans are presented and discussed in this section.

Table 4.1: Descriptive statistics and salient features of the characteristics farmers (N=116)

Selected traits	Scoring system	Range		Category	Respondent		Mean	SD
		Possible	Observed		No.	(%)		
Age	Years	Unknown	35-60	Young (Up to 35)	6	5.2	47.42	7.38
				Middle aged (36-50)	75	64.7		
				Old (Above 50)	35	30.2		
Education	Years of schooling	Unknown	0-12	No education (0)	78	67.2	2.84	4.48
				Primary (1-5)	22	19.0		
				Secondary(6-10)	14	12.1		
				Higher Secondary(11-12)	2	1.7		
Farm size	Hectare	Unknown	0.31-4.53	Small (up to 1)	32	27.6	1.52	.811
				Medium (1.1-2)	61	52.6		
				Large (Above 2)	23	19.8		
Competition with the fellow farmers	Score	1-16	4-11	Low (Up to 7)	42	36.21	6.681	1.16
				Medium (8-11)	70	60.34		
				High (Above 11)	4	3.45		
Time spent for farm work	Score (hours)	Unknown	2-8	Low (Up to 4)	28	24.13	5.43	1.20
				Medium (5-6)	77	66.38		
				High (Above 6)	11	9.49		
Annual family income	Score (Thousand Taka)	Unknown	40500-317550	Low (Up to100)	72	62.07	10172 3.15	3956 3.33
				Medium (101-200)	40	34.5		
				High (Above200)	3	2.59		
Experience in farming	Years	Unknown	2-16	Low (Up to 5)	11	9.5	7.65	2.36
				Medium (6-10)	93	80.2		
				High (Above 10)	12	10.3		
Knowledge on Agriculture	Rated score	0-15	7-15	Medium (Up to 10)	23	19.83	11.16	1.81
				High (Above 10)	93	80.17		
Innovativeness	Rated score (years)	0-48	4-31	Low (Up to 10)	10	8.62	17.77	5.22
				Medium (11-20)	76	65.52		
				High (21-31)	30	25.86		
Cosmopolitaness	Rated score	0-21	2-9	Very Low (Up to 5)	66	56.9	4.82	2.14
				Low (Above 5)	50	43.1		

4.1.1 Age

The age of the farmers varied from 35 to 60 years with an average of 47.42 years and standard deviation, 7.38. Based on their age, the farmers were classified into three categories namely, “young” (Up to 35years), “middle aged” (36-50 years) and “old” (Above 50 years). The distribution of farmers according to their age is shown in Table 4.2.

Table 4.2: Distribution of respondents according to their age

Categories	Score (years)	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
Young aged	Up to 35	6	5.2	47.42	7.375
Middle aged	36-50	75	64.7		
Old aged	Above 50	35	30.2		
Total		116	100	Min. 35	Max. 60

More than three-fifth (64.7%) of the farmers were “middle aged”, while 30.2 percent of them were “old” and only 5.2 percent were “young” aged (Table 4.1). Thus, the majority (69.9%) of the farmers were young aged to middle aged.

4.1.2 Education

Education score of the farmers ranged from 0 to 12, the mean and standard deviation being 2.84 and 4.48, respectively. On the basis of their educational scores the farmers were classified into the following four categories: “no education” (0), “primary education” (1-5), “secondary education” (6-10), and “higher secondary education” (11-12). The distribution of the farmers according to their education is shown in Table 4.3.

Table 4.3: Distribution of respondents according to their level of education

Categories	Score	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
No education	0	78	67.2	2.84	4.480
Primary education	1-5	22	19.0		
Secondary education	6-10	14	12.1		
Higher Secondary education	11-12	2	1.7		
Total		116	100	Min. 0	Max. 12

The highest proportions (67.2 %) of the farmers were found to be under no-education category and 19.0 percent of the farmers had primary level of education. On the other hand, only 12.1 and 1.7 percent of the farmers had secondary and higher secondary level of education respectively. That is, it was revealed that only 32.8% farmers of Narail District had education ranged from primary to higher secondary. In the study area most of the farmers had no education. Similar results were observed by Sayeed *et al.*, (2003).

Education is the process of developing the mind of an individual and it increases his power of observation, analysis, integration, understanding, decision-making and adjustment to new situations. It helps individuals to become rational, conscious and get useful information to solve their day-to-day problems through different sources of information such as reading leaflets, books, magazines, journals and other printing materials. Thus, education of a farming community might be helpful in establishing better relationship with the extension workers.

4.1.3 Farm size

The farm size of the respondents varied from 0.31 to 4.53 hectares with an average of 1.52 hectare and standard deviation being .811. Depending on their farm size the farmers were classified into three categories (DAE, 1999) namely, “small farm” (up to 1 ha.), “medium farm” (1.1-2 ha.) and “large

farm” (larger than 2 ha). The category and distribution of the respondents with their number, percent, mean and standard deviation are furnished in the Table 4.4.

Table 4.4: Distribution of respondents according to their farm size

Categories	Score (Hectare)	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage		
Small sized farm	Up to 1	32	27.6	1.52	.811
Medium sized farm	1.1-2	61	52.6		
Large sized farm	Above 2	23	19.8		
Total		116	100.0	Min. 0.31	Max. 4.53

Computed data indicated that the highest proportion (52.6 percent) of the farmers had medium farm compared to 27.6 percent having small farm and 19.8 percent having large farm. In this study area most of the farmers had medium size farm. The average farm size of the study area found to be more than national average. Farm size is the base of agricultural production. The size of the farm plays an important role in productivity. In the study area maximum farmers were resource rich with double cropped land area. For diffusion of innovation Government extension agencies and NGO should pay special attention to take steps for small and medium farm holders on the priority basis.

4.1.4 Competition with the fellow farmers

The competition with fellow farmers score varied from 4 to 11 with an average of 6.68 and standard deviation being 1.16. Based on the competition with fellow farmers score the respondents were classified into three categories namely, “low competition” (Up to 7), “medium competition” (8-11) and “high competition” (Above 11). The category and distribution of the respondents with their number, percent, mean and standard deviation are furnished in the Table 4.

Table 4.5: Distribution of respondents according to their competition with the fellow farmers

Categories	Score	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage		
Low competition	Up to 7	42	36.21	6.68	1.16
Medium competition	8-11	70	60.34		
High competition	Above 11	4	3.45		
Total		116	100.0	Min. 4	Max. 11

Computed data indicated that the highest proportion (60.34%) of the farmers had medium competition compared to 36.21 percent having low competition and 3.45 percent having high competition. It is revealed from the data that farmers of the study area are not competitive at all. They are self centered and devoid of social and economic competition.

4.1.5 Time spent for farm work

The time spent for farm work score varied from 2 to 8 with an average of 5.43 and standard deviation being 1.20. Depending on their time spent for farm work score the respondents were classified into three categories namely, “low time spent for farm work” (Up to 4.), “medium time spent for farm work” (5-6) and “high time spent for farm work” (Above 6). The category and distribution of the respondents with their number, percent, mean and standard deviation are furnished in the Table 4.6.

Table 4.6: Distribution of respondents according to their time spent for farm work

Categories	Respondents (N=116)		Mean	Standard deviation
	Number	Percentage (%)		
Low time spent for farm work (Up to 4)	28	24.13	5.43	1.20
Medium time spent for farm work (5-6)	77	66.37		
High time spent for farm work (Above 6)	11	9.50		
Total	116	100.0	Min. 2	Max 8

Computed data indicated that the highest proportion (66.38%) of the farmers had medium time spent for farm work compared to 24.13 percent having low time spent for farm work and 9.50 percent having high time spent for farm work. That is, more than three-fourths (75.87%) spend time for farm work from 5 to 8 hours. In fact, all the farmers spent time for their own farm works. Some respondents performed farm works by themselves; some respondents gave instructions to their farm workers about what to do. Only the resource rich farmers gave small time for their farm works. They got their farm works done by other.

4.1.6 Annual family income

The annual income score of the respondents in the study area ranged from 40500 to 317550. The respondents were classified into three categories namely, “low income” (Up to Tk.100 Thousand), “medium income” (Tk.101 Thousand to Tk.200 Thousand) and “high income” (Above 200 Thousand Tk.) group. The distribution of the farmers in different categories on the basis of their annual income has been shown in Table 4.7 with their number, percent, mean and standard deviation.

Table 4.7: Distribution of respondents according to their annual family income

Categories	Score (Thousand)	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
Low income	Upto100	72	62.07	101723.15	39563.32
Medium income	101 to 200	40	34.5		
High income	Above 200	3	2.59		
Total		116	100.0	Min. 40500	Max. 317550

Data furnished in the Table 4.6 indicate that the highest proportion (62.07%) of the respondents had low income while 34.5 percent and 2.59 percent of the respondents had medium and high income respectively. Since greater proportion (96.57 %) of the respondents had low to medium annual income, it is logical to assume that they might have medium access to modern high

cost technologies. This is contradictory with their farm size. They are supposed to earn more from their existing farm size. This is so because income is associated with purchasing power of an individual.

4.1.7 Experience in farming

The experience in farming scores of the respondents ranged from 2 to 16. Based on the experience in farming score, the respondents were classified into three categories. The categories and distribution of the respondents have been shown in the Table 4.8 with their number, percent, mean and standard deviation.

Table 4.8: Distribution of respondents according to their experience in farming

Categories	Score (years)	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
Low experience	Up to 5	11	9.5	7.65	2.36
Medium experience	6-10	93	80.2		
High experience	11-16	12	10.3		
Total		116	100	Min. 2	Max. 16

Data contained in the Table 4.8 show that the highest proportion (80.2 percent) of the respondents had (6-10 years medium) experience in farming, while 10.3 percent of the respondents had high experience and 9.5 percent of the respondents had low experience in farming. It is logical that young aged farmers would have low experience and middle aged and old aged farmers would have medium and high experience respectively. This finding indicates that major proportion of the respondents in the study area had experience in farming. May be, the crop cultivation is suitable to their socio-economic condition. So, it could be concluded that more or less every respondent had farming experience. With the increase of age low experience respondents will gain high experience.

4.1.8 Knowledge on Agriculture

Knowledge on agriculture scores of the farmers ranged from 7 to 15 with an average of 11.16 and standard deviation, 1.81. On the basis of their agricultural knowledge scores, the farmers were classified into two categories: “medium knowledge” (Up to 10), and “high knowledge” (Above10). The distribution of the farmers according to their agricultural knowledge is shown in Table 4.9.

Table 4.9: Distribution of respondents according to their knowledge on Agriculture

Categories	Respondents (N=116)		Mean	Standard deviation
	Number	Percentage (%)		
Medium knowledge (Upto10)	23	19.83	11.16	1.81
High knowledge (Above 10)	93	80.17		
Total	116	100.0	Min. 7	Max. 15

Data in the Table 4.9 indicate that four-fifths (80.17 %) of the farmers had high agricultural knowledge compared to 19.83 percent had medium level of agricultural knowledge. Thus, all the respondents' farmers had medium to high agricultural knowledge. Knowledge on agriculture was medium among those farmers who had poor education. It was revealed that most of the respondents of the study area had no or little education. But it is amazing that having no standard education the respondents had satisfactory agricultural knowledge.

4.1.9 Innovativeness

The innovativeness scores of the respondents ranged from 4 to 31 with an average of 17.77 and standard deviation, 5.22. Based on the innovativeness score, the respondents were classified in to three categories. The categories and distribution of the respondents have been shown in the Table 4.10 with their number, percent, mean and standard deviation.

Table 4.10: Distribution of respondents according to their innovativeness

Categories	Score (Years)	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
Low innovativeness	Upto10	10	8.62	17.77	5.22
Medium innovativeness	11-20	76	65.52		
High innovativeness	21-31	30	25.86		
Total		116	100.0	Min. 4	Max. 31

Data contained in the Table 4.10 show that the highest proportion (65.52 %) of the respondents had medium innovativeness, while 25.86 percent and 8.62 percent of the respondents had high and low innovativeness. This finding indicates that major proportions of the respondents in the study area were praiseworthy innovative. The innovativeness characteristics of the farmers of the study area correspond to their level of agricultural knowledge. If there is good extension contact it is expected that there would be stronger farmers-extension workers relationship.

4.1.10 Cosmopolitaness

The cosmopolitaness scores of the respondents varied from 2 to 9 against the possible range of 0-21 with a mean and standard deviation of 4.82 and 2.14 respectively. The farmers were classified into two categories based on their cosmopolitaness score: “very low cosmopolite” (up to 5) and “low cosmopolite” (above 5). The categories and the distribution of the farmers are shown in Table 4.11. The highest proportions (56.9%) of the respondents were very low cosmopolite and 43.1 percent were low cosmopolite. It can be concluded that all the respondents of the study were introvert, self-centered and laggards. Extension workers have ample scope to make the client system cosmopolitan involving them in extension activities.

Table 4.11: Distribution of respondents according to their cosmopolitaness

Categories	Score (Month)	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
Very low cosmopolitaness	Up to 5	66	56.9	4.82	2.14
Low cosmopolitaness	Above 5	50	43.1		
Total		116	100.0	Min. 2	Max. 9

Cosmopolitaness of an individual is an important factor for broadening his/her outlook which might help to develop perception towards any object. Outside movement or traveling to important places make the individuals updated with information.

Dependent variable:

Farmers-Extension workers Relationship

4.2 Communication or communication behavior

The communication behavior of extension worker perceived by the respondents scored range from 4 to 17 with an average of 14 and standard deviation, 1.60 against the possible range of score 10 to 40. Based on the communication behavior of extension worker perceived by the respondents were classified in to two categories 1) very low communication and 2) low communication. The categories and distribution of the respondents have been shown in the Table 4.12 with their number, percent, mean and standard deviation.



Table 4.12: Distribution of respondents according to their perception for communication behavior of extension workers

Categories of respondents according to communication behavior	Respondents (N=116)		Mean	Standard deviation
	Number	Percentage (%)		
Very Low communication (Up to 10)	4	3.45	14	1.60
Low communication (Above 10)	112	96.55		
Total	116	100.0	Min. 4	Max. 17

Data contained in the Table 4.12 show that all the respondents (very low 3.45% and low 96.55%) opined extension workers of the study area had low communication level. That is, there is low extension contact between respondents and extension workers. Avoid the direct blame against the DAE service. Why have you raised such blames? Have you defined and describe the extension workers in the farmers were listed to be interviewed on farmers-extension workers relationship.

4.3 Empathy

The empathy of extension workers perceived by the respondents scores ranged from 10 to 21 with an average of 15.30 and standard deviation, 1.97. Based on the extension workers empathy score, the respondents were classified in to two categories (i) low empathy and (ii) medium empathy. The categories and distribution of the respondents have been shown in the Table 4.13 with their number, percent, mean and standard deviation.

Table 4.13: Distribution of respondents according to empathy of extension workers

Categories	Respondents (N=116)		Mean	Standard deviation
	Number	Percentage (%)		
Low empathy (Up to 10)	14	12.07	15.30	1.97
Medium empathy (11-21)	102	87.93		
Total	116	100.0	Min. 10	Max. 21

Data contained in the Table 4.12 show that the overwhelming majority (87.93 %) of the respondents opined that extension workers had medium empathy and 12.07 percent of the respondents opined that they had low empathy. This finding indicates that extension workers of the study area had negligible empathy. This type of empathy cannot develop farmers-extension workers relationship.

4.4 Credibility

The credibility scores of extension workers perceived by the respondents ranged from 12 to 24 with an average of 16.02 and standard deviation, 1.97. Based on the credibility score, the respondents were classified into three categories: - (i) low credibility, (ii) medium credibility and (iii) high credibility. The categories and distribution of the respondents have been shown in the Table 4.13 with their number, percent, mean and standard deviation.

Table 4.14: Distribution of respondents according to credibility of extension workers

Categories	Respondents (N=116)		Mean	Standard deviation
	Number	Percentage (%)		
Low credibility (Up to 10)	9	7.76	16.02	1.97
Medium credibility (11-18)	93	80.17		
High credibility (Above 19)	12	12.06		
Total	116	100.0	Min. 12	Max. 24

Data contained in the Table 4.14 show that the highest proportion (80.17%) of the respondents opined that extension workers had medium credibility, whereas 12.06 percent of the respondents had opined high credibility and 7.76 percent of the respondents had low credibility. An extension worker provides useful information to the farmers, play an important role in disseminating new technology and helps in the development of socio-economic condition of the farmers. These findings indicate that major proportion of the respondents appreciated the credibility level of extension

workers. However, level of credibility contradicts with the level of communication behavior and empathy. In fact, communication skill of extension workers may upgrade the empathy and credibility level.

4.5 Overall Farmers-Extension Workers Relationship

The overall farmers-extension workers relationship was calculated by averaging the score of three dimensions viz. communication, empathy and credibility. The overall farmers-extension workers relation score ranged from 8.66 to 20.66 against the possible range of 30-120 with a mean and standard deviation of 15.11 and 1.85 respectively. The farmers were categorized into three viz. low relationships obtaining score (up to 14), medium relationships obtaining score (15-25) and high relationships obtaining score of (above 25). The categories and the distribution of the farmers with mean and standard deviation are shown in Table 4.15. The highest proportions (56.01%) of the respondents had medium relationship and 4.02 percent had with high relationship.

Table 4.15: Distribution of respondents according to their overall Farmers-Extension Workers Relationship

Categories	Score	Respondents (N=116)		Mean	Standard deviation
		Number	Percentage (%)		
Low relationship	Up to 14	47	39.97	15.11	1.85
Medium relationship	15-25	65	56.01		
High relationship	Above 25	4	4.02		
Total		116	100.0	Min. 8.66	Max. 20.66

4.6 Relationships between Selected Characteristics of the Farmers and Farmers-Extension Workers relationship

This section deals with the findings exploring the relationships between the selected independent and dependent variables of the study. The independent variables were age, education, farm size, competition with the fellow farmers, time spent for farm work, annual family income, experience in farming, knowledge on agriculture, innovativeness and cosmopolitans. The dependent variable was Farmers-Extension Workers relationship in a selected union of Narail District.

Pearson's Product Moment Co-efficient of Correlation (r) was used to test the null hypothesis concerning the relationships between two variables. Five percent (0.05) level of probability was used as the basis for rejecting the null hypothesis. The results of correlation of co-efficient test between the dependent and independent variables have been shown in the Table 4.16.

Table 4.16 Correlation between dependent and independent variables (N=116)

Dependent variables	Independent variables (Farmers characteristics)	Correlation coefficient(r) with Farmers-Extension workers' relationship (N=116)	Table value of 'r' with 114 df	
			at 0.05 level	at 0.01 level
Farmers-Extension workers relationship	1. Age	-0.007 ^{NS}	0.182	0.240
	2. Education	0.095 ^{NS}		
	3. Farm size	0.086 ^{NS}		
	4. Competition with the fellow farmers	0.393**		
	5. Time spent for farm work	0.180 ^{NS}		
	6. Annual family income	0.206*		
	7. Experience in farming	0.171 ^{NS}		
	8. Knowledge on agriculture	-0.184*		
	9. Innovativeness	-0.144 ^{NS}		
	10. Cosmopolitans	-0.134 ^{NS}		

NS= non significant

* =Significant at 0.05 level of probability

** =Significant at 0.01 level of probability

4.6.1 Relationship between age and Farmers-Extension Workers Relationship

The relationship between age and Farmers-Extension workers relationship

The farmers was examined by testing the null hypothesis:

“There is no relationship between age and Farmers –Extension workers relationship of the farmers” .

The correlation coefficient (r) between age and Farmers-Extension workers Relationship of the farmers was found (-0.007) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a negative trend.
- The computed value of ' r '=-0.007 which was smaller than the table value ($r=0.182$) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected.

Hence, the researcher concluded that age of the farmers and Farmers-Extension workers relationship. This means that the relationship of the farmers with the extension workers was independent regarding the age.

4.6.2 Relationship between education and Farmers-Extension Workers relationship

The relationship between education and Farmers-Extension workers relationship was examined by testing the null hypothesis:

“There is no relationship between education and Farmers-Extension workers relationship of the farmers”.

The correlation coefficient (r) between education and Farmers Extension Workers relationship was found (0.095) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.

- The computed value of ' r '=0.095 which was smaller than the table value (r =0.182) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. Hence, it could be concluded that education of the farmers had insignificant positive relationship with Farmers-Extension workers relationship .

4.6.3 Relationship between Farm size and Farmers-Extension Workers relationship

The relationship between farm size and Farmers-Extension workers relationship of the farmers was examined by testing the null hypothesis: "There is no relationship between farm size and Farmers-Extension workers relationship of the farmers".

The correlation coefficient (r) between farm size and Farmers-Extension workers relationship of the farmers was found (0.086) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.
- The computed value of ' r '=0.086 which was smaller than the table value (r =0.182) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. Hence, it could be concluded that farm size of the farmers had insignificant positive relationship with Farmers-Extension Workers relationship. And the farmers having small farms are generally economically solvent and they showed favorable Farmers-Extension workers relationship.

4.6.4 Relationship between competition with the fellow farmers and Farmers-Extension Workers relationship

The relationship between competition with the fellow farmers and Farmers-Extension workers relationship of the farmers was examined by testing the null hypothesis:

“There is no relationship between competition with the fellow farmers and Farmers-Extension workers relationship of the farmers”.

The correlation coefficient (r) between competition with the fellow farmers and Farmers-Extension workers relationship of the farmers was found (0.393) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.
- The computed value of ' r '=0.393 which was much greater than the table value ($r=0.240$) with 114 degrees of freedom at 0.01 level of probability.
- The correlation coefficient between the concerned variable was significant at 0.01 level of probability.

On the basis of above findings, the null hypothesis could be rejected. Hence, it could be concluded that competition with the fellow farmers had highly significant positive relationship with Farmers-Extension Workers relationship.

4.6.5 Relationship between times spent for farm work and Farmers-Extension Workers relationship

The relationship between times spent for farm work and Farmers -Extension workers relationship of the farmers was examined by testing the null hypothesis:

“There is no relationship between time spent for farm work and Farmers-Extension Workers relationship of the farmers”.

The correlation coefficient (r) between time spent for farm work and Farmers-Extension workers relationship of the farmers was found (0.180) in

table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.
- The computed value of ' r '=0.180 which was smaller than the table value (r =0.182) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.
- Although the ' r ' value was found to be insignificant but its tendency was near to be significant.

On the basis of above findings, the null hypothesis could not be rejected. Hence, it could be concluded that time spent for farm work had insignificant positive relationship their Farmers-Extension Workers relationship. And with less engaging in farming activities help farmers to form favorable Farmers-Extension Workers relationship.

4.6.6 Relationship between annual family income and Farmers-Extension Workers relationship

The relationship between annual family income and Farmers-Extension workers relationship of the farmers was examined by testing the null hypothesis:

“There is no relationship between annual family income and Farmers-Extension Workers relationship of the farmers”.

The correlation coefficient (r) between annual family income and Farmers-Extension Workers relationship of the farmers was found (0.206) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.
- The computed value of ' r '=0.206 which was much greater than the table value (r =0.182) with 114 degrees of freedom at 0.05 level of probability but the computed value of ' r '=0.206 which was smaller

than the table value ($r=0.240$) with 114 degrees of freedom at 0.01 level of probability.

- The correlation coefficient between the concerned variable was significant at 0.05 level of probability but the correlation coefficient between the concerned variable was insignificant at 0.01 level of probability.

On the basis of above findings, the null hypothesis could be rejected at 0.05 level of probability but the null hypothesis could not be rejected at 0.01 level of probability. Hence, the researcher concluded that annual family income of the farmers had significant positive relationship with Farmers-Extension Workers relationship. It is logical to assume that the farmers with medium annual income might have medium access to modern high cost technologies. This is so because income is associated with purchasing power of an individual. This may lead to the farmers to use more modern environment friendly practices than the environment degrading practices.

4.6.7 Relationship between experience in farming and Farmers-Extension Workers relationship

The relationship between experience in farming and Farmer-Extension Workers relationship of the farmers was examined by testing the null hypothesis:

“There is no relationship between experience in farming and Farmers-Extension workers relationship of the farmers”.

The correlation coefficient (r) between experience in farming and Farmers-Extension workers relationship of the farmers was found (0.171) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.
- The computed value of ' r '=0.171 which was smaller than the table value ($r=0.182$) with 114 degrees of freedom at 0.05 level of probability.

- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. Hence, it could be concluded that experience in farming had insignificant positive relationship with Farmers-Extension Workers relationship. And with engaging in farming experience help farmers to form favorable Farmers-Extension Workers relationship.

4.6.8 Relationship between knowledge on agriculture and Farmers-Extension Workers relationship

The relationship between knowledge on agriculture and Farmers-Extension workers relationship of the farmers was examined by testing the null hypothesis:

“There is no relationship between knowledge on agriculture and Farmers-Extension Workers relationship of the farmers”.

The correlation coefficient (r) between knowledge on agriculture and Farmers-Extension workers relationship of the farmers was found (-0.184) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a negative trend.
- The computed value of ' r '=-0.184 which was much greater than the table value ($r=0.182$) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was significant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could be rejected. Hence, the researcher concluded that knowledge on agriculture of the farmers and Farmers-Extension workers relationship. Lower knowledge of the farmers decreases the Farmers-Extension workers relationship.

4.6.9 Relationship between innovativeness and Farmers-Extension workers relationship

The relationship between innovativeness and Farmers-Extension Workers relationship of the farmers was examined by testing the null hypothesis: "There is no relationship between innovativeness and Farmers-Extension workers relationship of the farmers".

The correlation coefficient (r) between innovativeness and Farmers-Extension Workers relationship of the farmers was found (-0.144) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a negative trend.
- The computed value of ' r '=-0.144 which was smaller than the table value ($r=0.182$) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. Hence, the researcher concluded that knowledge on agriculture of the farmers and Farmers-Extension workers relationship.

4.6.10 Relationship between cosmopolitaness and Farmers-Extension workers relationship

The relationship between cosmopolitaness and Farmers-Extension workers relationship of the farmers was examined by testing the null hypothesis: "There is no relationship between cosmopolitene and Farmers-Extension workers relationship of the farmers".

The correlation coefficient (r) between cosmopolitaness and Farmers-Extension workers relationship of the farmers was found (-0.134) in table 4.16. This led to the following observation regarding the relationship between the variables under consideration:

- The relationship showed a negative trend.

- The computed value of ' r '=-0.134 which was smaller than the table value ($r=0.182$) with 114 degrees of freedom at 0.05 level of probability.
- The correlation coefficient between the concerned variable was insignificant at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. Hence, the researcher concluded that cosmopolitanism of the farmers and Farmers-Extension workers relationship. Through decreasing cosmopolitanism an individual becomes less aware of the recent information and consequently they form favorable attitude towards Farmers-Extension Workers relationship.

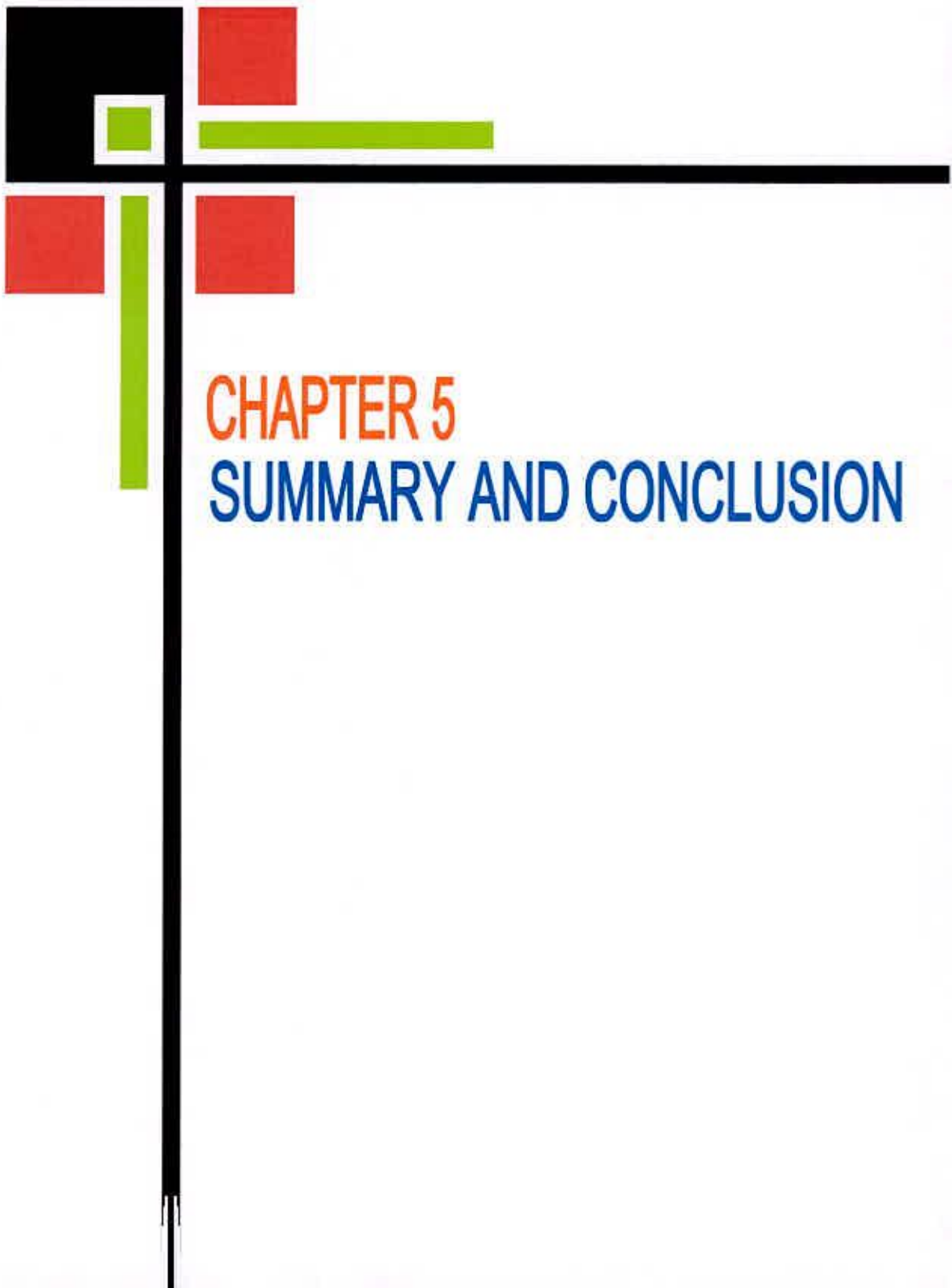


4.7 Inter-variables relationship among the independent variables

This section deals with the inter variables relationships among the independent variables. The independent variables were age, education, farm size, competition with the fellow farmers, time spent for farm work, annual family income, experience in farming, knowledge on agriculture, innovativeness and cosmopolitans.

The results of correlation of co-efficient test between the dependent and independent variables have been shown in the Appendix- II.

The inter variables relationship shows that the farm size is significant individually with age and education. The competition with the fellow farmers is significant with education. The annual family income is significant individually with age, education, farm size and competition with the fellow farmers. The experience in farming is significant individually with age, farm size and annual family income. The knowledge on agriculture is significant individually with age, farm size and annual family income. The innovativeness is significant with knowledge on agriculture. The cosmopoliteness is significant individually with age, farm size, annual family income, knowledge on agriculture and innovativeness and the Farmers-Extension workers relationship is significant individually with competition with the fellow farmers, annual family income and knowledge on agriculture.



CHAPTER 5

SUMMARY AND CONCLUSION

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

5.1.1 Introduction

To develop agricultural economy of Bangladesh many government and non government extension services are engaged in rural areas with their respective development projects. In fact, the successes of the extension services are largely depend upon job performance of their change agents/extension worker's relationship with the client system and organizational support as well. Extension workers serve farmers with advanced agricultural technology and perform technical and administrative function including:

- a) Farmer's training
- b) Identification of farmers problem
- c) Extension program planning
- d) Assessments of resource requirement
- e) Conduction of different extension activities
- f) Technology transfer



From the chart of extension worker's technical and administrative function it is clear that they are not only engaged in transfer of technology, they also identify farmers' problem and give solution to those problems. Effective use of inputs is another dimension of agricultural development. But it needs special skill training for the farmers, demonstration and other relevant activities. Extension workers carry out these functions at their best. In addition, with the government extension workers some NGO's workers like BRAC, PROSHIKA also play role in the socio-economic development of farmers teaching them improved agriculture practices, health and

sanitation and impart training on many income generating activities. So extension workers whether belong to government or non government organization should establish firm relationship with their client system. If there is no good relationship between change agency and client system diffusion of technology and other related activities cannot be well performed. It is assume that stronger the relationship between farmers and extension workers better the development of client system.

Farmers of Bangladesh are, economically handicapped, illiterate or less educated, have poor communication ability, have no outward knowledge, and they have limitation to establish relationship with extension workers. In this condition, extension workers have a great responsibility to make a high-value relationship with their client system for the sake of their economic development. In Bangladesh no empirical research was conducted so far on farmers-extension workers relationship. The researcher developed a felt need to conduct this sort of research. So he is keenly interested to undertake research entitled "Farmers-Extension Workers Relationship in a selected Union of Narail District".

5.1.2 Specific objectives of the study

The following specific objectives have been set in order to give proper direction of the study:

1. To determine and describe Farmers-Extension Workers relationship in a selected union of Narail District.
2. To determine and describe some selected characteristics of farmers. The selected characteristics are mentioned below:
 - I. Age
 - II. Education
 - III. Farm size
 - IV. Competition with the fellow farmers
 - V. Time spent for farm work

- VI. Annual family income
- VII. Experience in farming
- VIII. Knowledge on agriculture
- IX. Innovativeness
- X. Cosmopolitaness

3. To explore the relationship between the selected characteristics of farmers and Farmers-Extension Workers relationship.

5.1.3 Major Findings

5.1.3.1 Farmers-Extension Workers relationship

Highest proportion (80.17 percent) of the respondents had medium characteristics compared to 11.21 percent having high characteristics and 8.62 percent had low characteristics.

5.1.3.2 Characteristics of the farmers

Age

More than three-fifth (64.7%) of the farmers were “middle aged”, while 30.2 percent of them were “old” and only 5.2 percent were “young “aged. Thus, the majority (69.9%) of the farmers were young aged to middle aged.

Education

The highest proportions (67.2 %) of the farmers were found to be under no-education category and 19.0 percent of the farmers had primary level of education. On the other hand, only 1.7 percent and 12.1 percent of the farmers had higher secondary and secondary level of education respectively.

Farm size

Computed data indicated that the highest proportion (52.6 percent) of the farmers had medium farm compared to 27.6 percent having small farm and 19.8 percent having large farm.

Competition with the fellow farmers

Computed data indicated that the highest proportion (60.34%) of the farmers had medium competition compared to 36.21 percent having low competition and 3.45 percent having high competition.

Time spent for farm work

Computed data indicated that the highest proportion (66.38%) of the farmers had medium farm work compared to 24.13 percent having low farm work and 9.49 percent having high farm work

Annual family income

The highest proportion (62.07%) of the respondents had low income while 34.5 percent and 2.59 percent of the respondents had medium and high income respectively. Since greater proportion (96.57 %) of the respondents had low to medium annual income.

Experience in farming

The highest proportion (80.2 percent) of the respondents had medium experience in farming, 10.3 percent of the respondents had high experience in farming and 9.5 percent of the respondents had low experience in farming.

Knowledge on agriculture

Four-fifths (80.17 %) of the farmers had high agricultural knowledge compared to 19.83 percent had medium level of agricultural knowledge. Thus, all the respondents' farmers had medium to high agricultural knowledge.

Innovativeness

The highest proportion (65.52 %) of the respondents had medium innovativeness, 25.86 percent of the respondents had high innovativeness and 8.62 percent of the respondents had low innovativeness.

Cosmopolitaness

The highest proportions (56.9%) of the respondents were very low cosmopolite and 43.1 percent were low cosmopolite.

Farmers-Extension Workers relationship

Communication behavior

The respondents (very low 3.45% and low 96.55%) opined extension workers of the study area had low communication level. That is, there is low extension contact between respondents and extension workers.

Empathy

The overwhelming majority (87.93 %) of the respondents opined that extension workers had medium empathy and 12.10 percent of the respondents opined that they had low empathy.

Credibility

The highest proportion (80.17%) of the respondents opined that extension workers had medium credibility, whereas 12.06 percent of the respondents had opined high credibility and 7.76 percent of the respondents had low credibility.

5.1.3.3 Relationship of the selected characteristics of the farmers and Farmers-Extension Workers relationship

Out of 10 selected characteristics of the farmers, competition with the fellow farmers, annual family income had positive and significant relationship while age, education, farm size, time spent for farm work, experience in farming , knowledge on agriculture, innovativeness and cosmopolitaness had no significant relationship with their Farmers-Extension Workers relationship.

Age and Farmers-Extension Workers relationship

The null hypothesis was accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, the researcher concluded that age of the farmers had insignificant negative relationship with their Farmers-Extension Workers relationship.

Education and Farmers-Extension Workers relationship

The null hypothesis was accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, it could be concluded that education of farmers had insignificant positive relationship with their Farmers-Extension Workers relationship.

Farm size and Farmers-Extension Workers relationship

The null hypothesis was accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, therefore it could be concluded that farm size of the farmers had insignificant positive relationship with Farmers-Extension Workers relationship.

Competition with the fellow farmers and Farmers-Extension Workers Relationship

The null hypothesis was rejected on the basis of estimated 'r' value at 0.01 level of probability with 114 degrees of freedom. Hence, it was therefore concluded that competition with the fellow farmers had significant positive relationship with Farmers-Extension workers relationship.

Time spent for farm work and Farmers-Extension Workers relationship

The null hypothesis was accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, it was therefore concluded that time spent for farm work of the farmers had insignificant positive relationship with Farmers-Extension Workers relationship.

Annual family income and Farmers-Extension Workers relationship

The null hypothesis was rejected on the basis of estimated 'r' value at 0.01 level of probability with 114 degrees of freedom. Hence, it was therefore concluded that annual family income had insignificant positive relationship with their Farmers-Extension Workers relationship.

Experience in farming and Farmers-Extension Workers relationship

The null hypothesis was accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, it was therefore concluded that experience in farming had insignificant positive relationship with Farmers-Extension Workers relationship.

Knowledge on agriculture and Farmers-Extension Workers relationship

The null hypothesis was accepted on the basis of calculated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, it could be concluded that knowledge on agriculture of the farmers had insignificant negative relationship with Farmers Extension Workers relationship.

Innovativeness and Farmers-Extension workers relationship

The null hypothesis was accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, it could be concluded that innovativeness of the farmers had insignificant negative relationship with Farmers-Extension Workers relationship.

Cosmopolitaness and Farmers-Extension Workers relationship

The null hypothesis could be accepted on the basis of estimated 'r' value at 0.05 level of probability with 114 degrees of freedom. Hence, it was therefore concluded that cosmopolitaness of the farmers had insignificant negative relationship with Farmers-Extension Workers relationship.

5.2 Conclusions

The researcher observed the Farmers-Extension workers relationship in a selected union of Narail District with a great care and put forwarded the following conclusions on the basis of the findings and its logical interpretations:

1. The research findings reveal that majority of the farmers (56.01 percent) had low to medium relations with Farmers-Extension workers relationship in a selected union of Narail District. It is quite logical that most of the farmers had no education, medium farm size, medium competition with the fellow farmers, medium farm work, low annual income, medium experience in farming, high agricultural knowledge, medium innovativeness, medium cosmopolitaness, so they showed medium relationship. If Upazila Extension Workers visit certain families who are deprived farmers, would obtain important information from those families and thus got some positive information about the activities of DAE. Therefore, as a result of such medium relationship between farmers and extension workers, the satisfactory level of execution of the extension program could not be achieved. Therefore, it may be concluded that unless proper steps are taken to increase the relationship between farmers and extension workers higher level, the national goal of effective execution of extension program will continue to suffer seriously.
2. There was insignificant relationship between education and Farmers-Extension workers relationship in a selected union of Narail District. Education is a contributory factor of gaining knowledge and skill and has created positive relationship in an individual towards good things. The stronger relationship between Farmers-Extension workers rely upon the extension contact from the education of extension worker. Extension workers were employed work the farmers. So, it is the responsibilities of extension

worker to make relation with the farmers. There is a need to enhance the educational level of the farmers. It may, therefore, be concluded that enhancement of education among the farmers may would form favorable relationship towards the Farmers-Extension workers relationship in a selected union of Narail District.

3. In the study area, an overwhelming majority (52.6 percent) of the farmers possessed medium to small farm size and only 19.8 percent possessed large farm size and showed positive and insignificant relationship with Farmers-Extension workers relationship in a selected union of Narail District. The farmers having large farms are generally economically solvent and they showed favorable relationship towards Farmers-Extension workers relationship in a selected union of Narail District. So, GOs and different NGOs should provide credit to the small farm sized farmers which help them to increase their farm size in proper way. It led to the conclusion that in general the increment of the farm size of the respondents was followed by more contact with extension workers.
4. Time spent for farm work of the farmers had insignificant positive relationship with Farmers-Extension workers relationship in a selected union of Narail District. In the study area all farmers (66.38 percent) spend time for farm activities. Therefore it may be concluded that Farmers-Extension workers relationship in a selected union of Narail District should provide modern technological information to the farmers. And if it is possible then the farmers may show interest to spend more time for farm work.
5. A positive but low correlation was found between annual income of the farmers and contact with extension workers. Based on this finding it was

concluded that annual income of an individual influenced the farmer to some extent to contact the extension workers.

6. Experience in farming of the farmers had insignificant positive relationship with Farmers-Extension workers relationship in a selected union of Narail District. In the study area most of the farmers (80.2 percent) were engaged in medium farming. Therefore, it may be concluded that Farmers-Extension workers relationship in a selected union of Narail District should provide modern agricultural crop cultivation to the farmers. And if it is possible then the farmers may show interest to spend more years for experience in farming.
7. Knowledge on agriculture of the farmers had insignificant negative relationship with their Farmers-Extension workers relationship in a selected union of Narail District. Again, an overwhelming majority (80.17 percent) of the respondents had high to medium knowledge on agriculture. The association ship between agricultural knowledge of a farmers and his contact with extension workers was positive and high. A conclusion was therefore drawn that in general, the more a farmer possessed agricultural knowledge, the more he was likely to contact the extension workers.
8. Cosmopolites of the farmers come in contact with new people, new ideas, and new things through traveling outside their own social system. Cosmopoliteness therefore, helps to develop perception of new ideas and facts. Correlation test revealed insignificant negative relationship between cosmopoliteness of the respondents and their Farmers-Extension workers relationship in a selected union of Narail District. Therefore, it may be concluded that by increasing cosmopoliteness, farmers may possess favorable relationship for their better awareness.



9. Innovativeness of the farmers and the contact with the extension workers was negatively and highly related to each other. Innovativeness had insignificant negative relationships with Farmers-Extension workers relationship. Among the respondents the highest (65.52 percent) under the group of medium innovativeness. This led to the draw a conclusion that the more a farmer was innovative, the more he has likely to contact the extension workers.
10. Since there was significant relationship between competition with the fellow farmers and annual family income of farmers and Farmers-Extension workers relationship in a selected union of Narail District. It may be concluded that there was vital role of competition with the fellow farmers and annual family income on respondents towards Farmers-Extension workers relationship.

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:

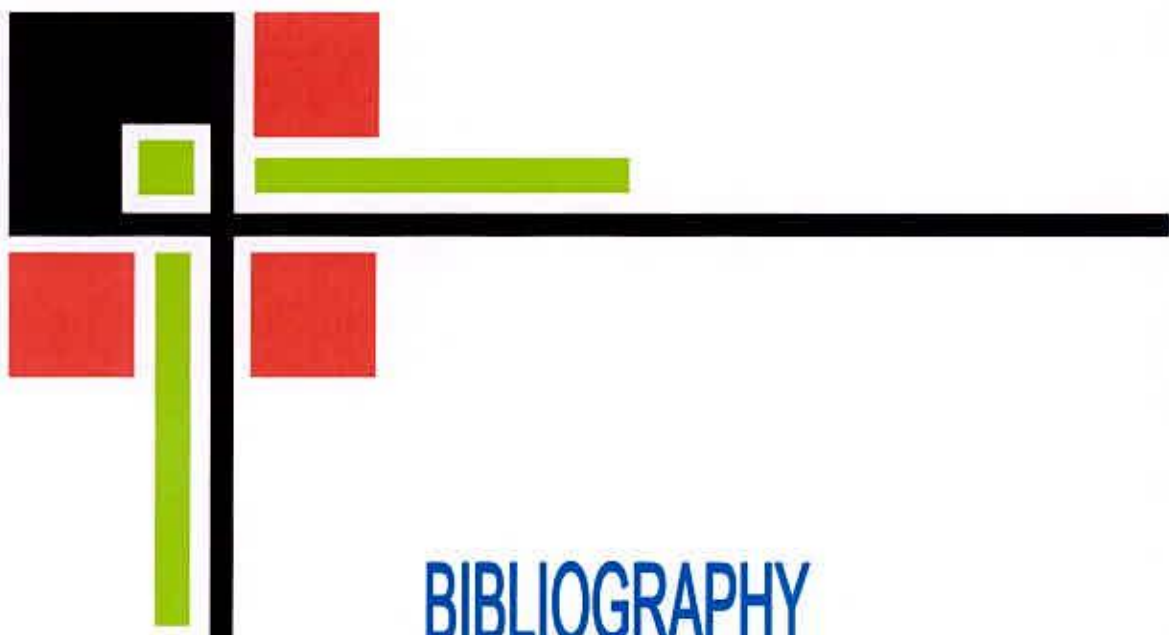
1. The overall Farmers-Extension workers relationship showed media relations of the farmers (56.01percent) had medium relationship with extension workers interactive in a selected union of Narail District. Therefore, DAE should undertake need-based program for the farmers so that the farmers-Extension workers relationship be improved further and farmers gets benefitted.
2. Education of the farmers had insignificant relationship with Farmers-Extension workers relationship, where one fourth of the respondents (19.0 percent) had below secondary and higher secondary education. So, the concerned authority may arrange field school under DAE and open school college program under Open University in order to raise the educational level of the farmers as they are farmers of the society.
3. Farm size of the farmers had insignificant positive relationship with Farmers-Extension workers relationship in. In this study, 52.6 percent of the farmers had medium farms. These farmers could give more attention to their farming operation as they generally work on their farm. Hence, the Upazilla agricultural extension workers should utilize the medium farm holding farmers in their extension activities to introduce improved farm practices on a larger significant scale.

4. Among the farmers only 9.49 percent were spend high time for farming. Reasonably time spent for farming work had insignificant positive relation with Farmers-Extension workers relationship in a selected union of Narail District. In this case, if Extension workers can provide better technologies to farmers then they may be interested to spend more time for farming activities and also show Farmers-Extension workers relationship.
5. Cosmopolitaness is a vital factor to increase knowledge and skill of farmers. Persons with cosmopolite orientation come in contact with new people, new ideas and things and high cosmopolitaness makes the farmers well-informed towards different information on agriculture and relevant matter. So extension workers should try to utilize the farmers with cosmopolite orientation in their extension program training programs.
6. More knowledge on agriculture leads to Farmers-Extension workers relationship in a selected union of Narail District. Therefore, it may be recommended that Upazilla agricultural extension worker need to take sincere steps like arrangement of training so that the farmers could increase their knowledge on agriculture.

5.3.2 Recommendations for further study

It is difficult to provide all information for proper understanding of the farmers towards extension activities of agriculture officer performed by Upazilla Agricultural Extension workers. 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. The present study was concerned with the farmers of the Salamabad union under Kalia Upazilla of Narail District. Similar studies are required to be conducted in other sites of the country to verify the findings of this study.
2. This study investigated the relationship of ten selected characteristics of the farmers with Farmers-Extension workers relationship as dependent variables. But besides these ten characteristics of the farmers there might be other factors. Therefore, it is recommended that further study may be conducted with other independent and dependent variables.
3. Further research should be conducted in order to determine the farmers towards different NGOs and other public extension organization.
4. In the present study age, education, farm size, time spent for farm work, experience in farming, innovativeness and cosmopolitaness of the respondents had no significant relationships with Farmers-Extension workers relationship as dependent variables. In this situation further verification may be necessary.



BIBLIOGRAPHY



BIBLIOGRAPHY

- Ahmed, M.B. 2006. Extension-workers of the Farmer's towards Shrimp Farming in Selected Area of Khulna District. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Ali, M. 2002. Communication sources of Block Supervisor Towards The Activities of Non Government Organization. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Asch, 1952. Current Affairs. Published by Masik Professor's Current Affairs. Dhaka.
- Aurangozeb, M.K. 2002. Adoption of Integrated Homestead Farming Technologies by the Rural Women in RDRS. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Bari, M.A. 2000. Credibility of Farmers towards Hybrid Rice AALOK 6201. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- BBS. 2009. *Statistical Yearbook of Bangladesh*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the Peoples' Republic of Bangladesh, Dhaka.
- Doob, L.W. 1948. Public Opinion and Propaganda. New York: Henry Halt.
- Encyclopedia Britannica. 2005. Encyclopedia Britannica Deluxe Edition, Encyclopedia Britannica, Inc.

- Forgus, R. H. and L. E. Melamed. 1966. *Perception: A Cognitive-stage Approach*, New York: McGraw-Hill Book Company, Inc.
- Goode, W. J. and P. K Hatt. 1952. *Methods in Social Research*. New York: McGraw-Hill Book company, Inc.
- Gray, 1950. Empathy of Farmers towards the Use of Fertilizers. M.S. (Ag. Ext. Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Habib, M. 2000. Communication behavior of Block Supervisors towards the Use of Agrochemicals. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Haque, A.T.M.S. 2006. Comparison of empathy towards Organic Farming between Organic and Conventional Farmers. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Haque, M. M. 2000. Masaguna Farmers' Perception of the Effectiveness of Communication Media and Their use in Bay, Langu. *M. S. Thesis (Development Communication)*. UPLB, Philippines.
- Haque, M.E. 2003. Farmers' Attitude towards Extension Activities of the Department of Agricultural Extension. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Hasan, M.Z. 1996. Adoption of Some Selected Agricultural Technologies Among the Farmers as Perceived by the Frontline GO and NGO Workers. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

- Havelock, 1973. Dictionary of psychology. UK: English Language Book Society and Penguin Books Ltd.
- Hilgard, 1963 Recent Trends in Small Farmers' Input Use in Andean America. Social Science Perspectives on Managing Agricultural Technology. IIMI Publication. No. 86-22, 155-167.
- Hoque, M.M. 2003. Farmer Adoption of Modern Rice Varieties in Sadar Thana of Mymensingh District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Hossain, K. 2006. Adoption of Selected High Yielding Variety of Rice by the Farmers of Rajpat Union under Kasiani Upazila in Gopalganj District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Hossain, S. M. and Islam 1994. Farmers' Knowledge and Perception of Bindhan-6 in the Boro season. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.
- Hossain, S.M. 2003. Farmers' Knowledge and Participation of Binadhan-6. *M.S. (Ag. Ext. Edu.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Hussen, M.A. 2001. Farmers Knowledge and Adoption of Modern Sugarcane Cultivation Practices. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Islam and Kashem, 1997. Adoption of Posu Pusti in Cattle Rearing at Farmers Level of Gazipur District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Islam and Kashem, 1997. Farmers' Perception of the Harmful Effects of Using Agro-chemicals in Crop Production with Regard to Environmental Pollution.

Doctoral Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.

- Islam, A. 2002. Farmers' Knowledge and Adoption of Ecological Agricultural Practices Under Supervision of Proshika. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Islam, M.M. 1996. Farmers Use of Indigenous Technical Knowledge (ITK) in the Context of Sustainable Agricultural Development. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension. Education, Bangladesh Agricultural University, Mymensingh.
- Islam, S.A, M.M. Rahman, M.A.Rahman, F. Khan, Sultan-Ul-Alam, A.K. Barbhmiya. 2000. *Introduction to Behavioural Science*, Dhaka: The University Press Limited.
- Karim, 2002. Small Farmers Constraints to the adoption of Modern Rice Technology. *The Bangladesh Development of Studies*, 15(40): 18-30.
- Karim, 2006. Adoption of Selected High Yielding Varieties of Rice in Three Villages of Comilla District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University. Mymensingh
- Kashem, M.A. and M.A. Hossain. 1987. Adoption Behaviour of Sugarcane Growers. *Indian Journal of Extension Education*, 28 (1 & 2): 92-96.
- Kendler, H.H. 1963. *Basic Psychology*, New York. Appleton-Century-Crofts, Division of Meredith Publishing Company.
- Kerlinger, T. 1973. *Foundation of Behavioral Research. Educational and Physical Inquiry*. New York: Holt, Rinehart and Winston. Inc.

- Kerlinger, T. 1973. *Foundations of Behavioral Research: Educational and Psychological Inquiry*. New York: Holt, Richard and Winston, Inc.
- Khan, M.A.H. 1993. Adoption of Insecticides and Related Issues in the Village of Pachar Union, Madhupur District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Krech, D, R.S. Crntchfield and E.L. Ballachey. 1962, *Individual in Society*. New York: McGraw-Hill, Book Company Inc.
- Muttaleb, M.A., M.N. Islam and M.A. Hossain. 1998. Adoption of Selected Plant Protection Practices in Potato Cultivation. *Bangladesh Journal of Extension Education*. 9 (2): 20-30.
- Noor, 1995. Preference of Dropout Rural Youth in Selected Agricultural and Non-Agricultural Activities for Self-employment. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Noor, M.S. 1995. Farmers Attitude towards Cultivation of High Yielding Varieties of Potato. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangobandho Sheikh Mujibur Rahman Agricultural University, Gazipur.
- Nurzaman, 2000. Empathy of Proshika Farmers towards the Ecological Agricultural program in Saturia Upazila under Manikganj. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh. Microsoft Encarta. 2006. Microsoft Premium DVD Redmond, WA, U.S.A: Microsoft corporation.

- Nurzaman, M. 2000. Knowledge, and Practices of FFS and Non-FFS Farmers in Respect of IPM. M.S. (Ag. Ext. Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Parveen, S. 1995. Awareness of Farm Women on Environmental Degradation due to the Use of Some Selected Modern Agricultural Technologies. M.S. (Ag. Ext. Ed.) Thesis, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.
- Paul, S.K. 2000. Adoption of Recommended Sugarcane Cultivation Practices by the Farmers in Two Selected Centres of North Bengal Sugar Mills. M.S. (Ag. Ext. Ed.) Thesis. Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Paul, S.K. 2000. Farmers-Extension workers relationship of Farmers towards the Use of Urea Super Granule on Rice Cultivation. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Podder, S.K. and M.A. Kashem. 2000. Use of Extension Media Contact by the Farmers in the Adoption of Mehershagar Banana, *Bangladesh Journal of Extension Education*. Vol. 11 & 12. No. 1 & 2: 89-94.
- Radhakrishna, R. 2002. Measuring and benchmarking customer satisfaction: implications for organizational and stakeholder accountability. *Journal of Extension* 40, no.1.
- Radhakrishna, R., Edgar, P. and Baggett, C. 1994. Time management and performance. *Journal of Extension* 29 no 2. www.joe.org/joe/1994. (Accessed January 11, 2005).
- Rahim, 2007. Research on Communication and Attitude. Quoted Traindis., H.C. 1971. *Attitude and Attitude change*. New York: John Wiley and Sons, Inc.

- Rahman, M. Z. 2000. Farmers' Perception of Sustainable Agricultural Development. *Doctoral Thesis*. Graduate School of Biosphere Science, Hiroshima University, Hiroshima, Japan.
- Rahman, M.A. 1966. Credibility of Farmers towards BINA DHAN-6 in a Selected Area of Bangladesh. M.S. (Ag. Ext. Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Rahman, M.S. 2001. Knowledge, Attitude, and Adoption of the Farmers Regarding Alok 6201 Hybrid Rice in Sadar Upazila of Mymensingh District. . *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Rana, G.M.R. 2007. Empathy of Women Beneficiaries towards the Activities of ASA in Selected Areas of Phultala Upazilla of Khulna District. (Ag. Ext. Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Razzaq and Chaudhuri 1963. Empathy of Rural Women towards Homestead Agricultural Production.' M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,
- Regan and Warlow, 2001. A Multivariate Study of Information Source Utilization by big Medium and Small Farmers. Div. of Agricultural Extension, IARI. Cited in: Samasundaram, D. and S.N. Sing (1974). Factors Affecting the Knowledge of Adopter and Non-Adopter Small Farmers. *Indian Journal of Extension Education*, 14 (1&2): 30-34.
- Rogers and Capener, 1977. *Communication of Innovation*. 2nd Ed. New York: The Free Press.

- Rogers and Capener, 1989. *Diffusion of Innovations*. 4th Ed. New York: The Free Press.
- Rogers, E.M. 1965. *Diffusion of Innovations*. 3rd edn. New York: The Free Press.
- Sardar, M.H.U. 2002. Adoption of IPM Practice by the Farmers under PETRRA Project of RDRS. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Sarker, 2001. Correlates of Selected Characteristics of Potato Growers with Their Adoption of Improved Potato Cultivation Practices in Five Villages of Comilla District. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Sarker, 2001. Farmers' Perception of Using Manure towards Integrated Nutrient Management. *Bangladesh Journal of Extension Education*, 15 (1&2): 47-54.
- Sarker, R.C. 2002. Farmers' Perception Regarding Environmental Degradation due to the Use of Agro-chemicals. *M.S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Education, Bangladesh Agricultural University, Mymensingh, Bangladesh.
- Sawhney, 2007. *Psychology in Action*. 3rd edn. New York: John Wiley and Sons, Inc.
- Sawhney. 1968. Relationship of Farmers towards Activities of Bangladesh Agricultural University Extension Center (BAUEC). *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Sawhnoy, 2003. The Role of Knowledge in Adoption of Agricultural Development Practices, *South African Journal of Agricultural Extension Education*, XXVI (3&4): 86-91.

- Siddique, A.B. 2002. Farmers-Extension workers relationship of the farmers towards Improved winter Vegetable Production in a Selected Area of Gaffargaon Upazilla under Mymensingh District. M.S. (Ag. Ext. Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.
- Verma, H. K. and K. Kumar. 1991. Correlates of Farmers communication behavior towards Buffalo Management Practices. Research note. Indian Journal of Extension Education. 27 (2& 3): 99-100.



APPENDICES

Appendix I

Interview Schedule

English version of the interview schedule

Department of Agricultural Extension & Information System
Sher-e-Bangla Agricultural University
Dhaka -1207

INTERVIEW SCHEDULE FOR THE STUDY ENTITLED "FARMERS- EXTENSION WORKERS RELATIONSHIP IN A SELECTED UNION OF NARAIL DISTRICT"

(The interview schedule is entitled for a research study)

Serial No :
Name of the respondent :
Village :
Upazilla :
Zilla :

(Please answer the following questions. Secrecy will be strictly maintained.)

1. **Age:** How old are you?.....years

2. **Education:** Please mention your educational status

- (a) Cannot read or write.....
- (b) Can sign only.....
- (c) Read up to class
- (d) Others (specify)



3. **Farm size:** Please mention your land area

Sl. No	Type of land	Area(bigha)	Area(hector)
1.	Homestead with kitchen garden		
2.	Own land under own cultivation		
3.	Own pond		
4.	Own land given for share croppings		
5.	Land taken for share croppings		
6.	Land taken on lease form others		
7.	Others		
Total area =			

4. What kind of Competition do you maintain with the fellow farmers?

Categories	High Competition (4)	Medium competition (3)	Low competition (2)	No competition (1)
Competition in crop cultivation				
Visit extension office to obtain advice or suggestions				
Maintain secrecy of my cultivation technology				
Early raising of crops				

5. Time spent for farm work:

How much time do you spent for farm related work daily?.....hour

6. Please state your annual family income according to the following structure:

SL.NO.	Source	Total production(Kg/unit-it)	Price per Kg/unit (Tk.)	Total Taka
1.	Service or others			
2.	Income from domestic animal			
3.	Rice crop			
4.	Pulse crop			
5.	Fruit			
6.	Vegetables			
7.	Potato crop			
8.	Jute crop			
9.	Fish			
10.	Business			
11.	Poultry			
12.	Others (Food For Walk, Daily wage)			
13.	Total			

7. Experience in farming:

Please mention your farming experiences on the following item:

SL.NO.	Item	Involvement (Years)
1.	How long you are involved in agriculture	
2.	How long you are involved in rice cultivation	
3.	How long you are involved in jute cultivation	
4.	How long you are involved in wheat cultivation	
5.	How long you are involved in maize cultivation	
6.	How long you are involved in pulse cultivation	
7.	How long you are involved in oil seed cultivation	
8.	How long you are involved in guava cultivation	
9.	How long you are involved in flower cultivation	
10.	How long you are involved in banana cultivation	
11.	How long you are involved in mango cultivation	

8. Knowledge on Agriculture:

Please answer the following questions using tick (√) marks

- a) BRRRI dhan-28 is mainly cultivated in
- Boro season
 - Aus season
 - Amon season
 - All the year round
- b) How many days are required for BRRRI dhan-28 cultivation?
- 160 days
 - 140 days
 - 130 days
 - 120 days
- c) There are similarities between BRRRI dhan-28 and BRRRI dhan-29 in respect of
- Grain size
 - Plant height
 - Life cycle
 - Season
- d) Mention a harmful insect of rice from the followings
- Rice Stem Borer
 - Aphid
 - Mole cricket

- iv) Field cricket
- e) How much seed required for wheat cultivation per bigha?
- 15-17 kg/bigha
 - 18-20 kg/bigha
 - 21-25 kg/bigha
 - 26-30 kg/bigha
- f) In which of the following chemical fertilizers, nitrogen is available?
- Urea
 - TSP
 - MP
 - ZnSO₄
- g) What chemical do you use for weed control in your wheat field?
- Rifit
 - 2,4 D
 - Paraciod
 - Bitaclore
- h) Mention the name of crops cultivated for green manure.
- Cow pea/Dhaincha
 - Mung bean
 - Potato
 - Tomato
- i) What is the plant to plant distance for planting potato?
- 10 cm
 - 20 cm
 - 30 cm
 - 40 cm
- j) What is the proper time for planting potato?
- 1st October-15th October
 - 16th October-30th October
 - 1st November-15th November
 - 16th November-30th November
- k) Mention the name of modern varieties of wheat.
- Prodip (BARI gam-24)
 - Kanchon
 - Protiva
 - Satabdi
- l) Rice hispa infests
- Rice field



- ii. Wheat field
 - iii. Jute field
 - iv. Maize field
- m) An importance function of N₂ fertilizers is to-
- i) Increase plant growth
 - ii) Hamper plant growth
 - iii) Reduce crop yield
 - iv) None of these
- n) Wheat is mainly cultivated in
- i) 1st November- 15th November
 - ii) 16th November- 30th November
 - iii) 1st December- 15th December
 - iv) All the year round
- o) What is meant by IPM?
- i) Insect & disease controlled by modern cultivation practice
 - ii) Insect & disease controlled by mechanical
 - iii) Insect & disease controlled by biological
 - iv) Insect & disease controlled by pesticide

9. Innovativeness:

Please give your information about the extent of use of the following modern Technologies

SL No	Name of the modern technology	Don't use	Duration of use after hearing			
			Within 1 year	Within 2 Years	Within 3 years	Above 3 years
1	Use of power tillar					
2	Use of weeder					
3	Use of crop cutter					
4	Use of seed drill					
5	Use of green manure					
6	Use of organic manure					
7	Use of crop rotation					
8	Use of hybrid rice seed					
9	Tree plantation in road side					
10	Use of HYV of wheat prodip/satabdi					
11	Use of inter-cropping					
12	Integrated pest management					

10. Cosmopolitaness:

Please mention the extent of your visits to the following places

Sl. No	Places of Visit	Nature of Visit			
		Frequently (3)	Occasionally (2)	Rarely (1)	Never (0)
1.	Visit to Friends, Relatives house & Other person	More than 4 times per month	3-4 times per month	1-2 times per month	
2.	Visit other Villages	More than 6 times per month	4-6 times per month	1-3 times per month	
3.	Visit to own union parishad	5 or more times per year	3-4 times per year	1-2 times per year	
4.	Visit to others union parishad	5 or more times per year	3-4 times per year	1-2 times per year	
5	Visit to own Upazila town	5 or more times per year	3-4 times per year	1-2 times per year	
6	Visit to own District town	5 or more times per year	3-4 times per year	1-2 times per year	
7	Visit to big cities	More than 4 times per year	3-4 times per year	1-2 times per year	

11. Farmers-Extension Workers Relationship:

11.1. Communication

Please indicate the extent of your contact with the following communication sources

SL No	Communication sources	Categories			
		Regularly (4)	Frequently (3)	Occasionally (2)	Rarely (1)
1.	Visit to extension worker's office				
2.	Participate in result demonstration				
3.	Participate in method demonstration				
4.	Participate in discussion meetings organized by extension worker				
5.	Attend in field days				
6.	Participate in FINA (Farmers Information Needs Assessment)				

7.	Participate in FFS (Farmers Field School)				
8.	Receive <i>printing material</i> from extension worker				
9.	Attend in farm training				
10.	Extension worker writes letters				

11.2. Empathy

a) How does extension worker give importance to your problem?

Degree of empathy			
Very High (4)	High (3)	Medium (2)	Some extent (1)

b) How does extension worker behave with you?

Degree of empathy			
As like as relative (4)	As like as friend (3)	As a client (2)	As an ordinary farmer (1)

c) How does extension worker rush to the farmers to see the damage of crop?

Degree of empathy			
Rush at once (4)	Rush leisurely (3)	Rush slowly (2)	Rush very slowly (1)



- d) How much the appropriate suggestions were given by the extension worker to cope with the natural calamities?

Degree of empathy			
Highly appropriate (4)	Medium appropriate (3)	Low appropriate (2)	Very low appropriate (1)

- e) How does extension worker solve your problem?

Degree of empathy			
Extension worker himself (4)	By asking upazila extension officer (3)	By asking farmers (2)	Undecided (1)

- f) How much effectively extension worker prepares crop cultivation schedule for you?

Degree of empathy			
High effective (4)	Medium effective (3)	Low effective (2)	Very low effective (1)

- g) If you are not appropriate in using seed rate, fertilizer dose e how extension worker behaves with you?

Degree of empathy			
Teaches input use with patience (4)	Teaches with annoyance (3)	Teaches with negative attitudes (2)	Do not teach and become severely annoyed (1)

- h) If there is insect infestation in your crop fields how extension worker comes to know the situation?

Degree of empathy			
By regular visits (4)	By off and on visits (4)	By occasional visits (2)	By rarely visits (1)

- i) During crop cultivation and intercultural operation how frequent extension worker visits your farm & home?

Degree of empathy			
Visits Regularly (4)	Visits often (4)	visits occasionally (2)	Visits rarely (1)

- j) Assessing your economic condition how effectively extension worker teaches you fertilizer management so that you can save money?

Degree of empathy			
High effective (4)	Medium effective (3)	Low effective (2)	Very low effective (1)

11.3. Credibility:

- a) How confidently the extension worker plays an important role in disseminating new technology?

Degree of credibility			
High confident (4)	Medium confident (3)	Low confident (2)	Very low confident (1)

- b) How confidently extension worker understands your field problem?

Degree of credibility			
Very confident (4)	Medium confident (3)	Low confident (2)	Very low confident (1)

- c) How credibly extension worker can identify your agricultural problems?

Degree of credibility			
High credibly (4)	Medium credibly (3)	Low credibly (2)	Very low credibly (1)

- d) How much benefit you got after application of extension workers advice regarding inputs use?

Degree of credibility			
Large/big benefit (4)	Medium benefit (3)	Little benefit (2)	Very little benefit (1)

e) To what extent extension worker's advice is useful?

Degree of credibility			
Very useful (4)	Useful (3)	Low useful (2)	Very low useful (1)

f) State the extent of technological knowledge of extension worker from your assumptions?

Degree of credibility			
High technological knowledge (4)	Medium technological knowledge (3)	Low technological knowledge (2)	Very low technological knowledge (1)

g) How much do you believe extension worker's advice or suggestions?

Degree of credibility			
Highly believable (4)	Believable (3)	Less believable (2)	Very less believable (1)

h) In technological knowledge how better the extension worker than you?

Degree of credibility			
Very much (4)	Much (3)	Low (2)	Very low (1)

i) How much applicable the information that provided by extension worker?

Degree of credibility			
Very much (4)	Much (3)	Low (2)	Very low (1)

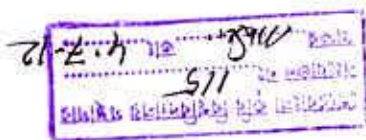
j) How much do you believe the information provided by extension worker?

Degree of credibility			
Very much believable (4)	Much believable (3)	Low believable (2)	Very low believable (1)

.....

Signature of the interviewer

Date:



Date: 29/10/14
 Page: 57
 Library: 57555
 Shahe-Bangla Agricultural University

APPENDIX II
Correlation Matrix

Inter-correlation between 10 characteristics and the dependent variable (N= 116)

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	Y
X ₁	1										
X ₂	0.058 ^(NS)	1									
X ₃	0.297 ^(**)	0.186 ^(*)	1								
X ₄	0.101 ^(NS)	0.307 ^(**)	0.149 ^(NS)	1							
X ₅	-0.164 ^(NS)	0.094 ^(NS)	0.053 ^(NS)	0.161 ^(NS)	1						
X ₆	0.247 ^(**)	0.344 ^(**)	0.676 ^(**)	0.308 ^(**)	-0.003 ^(NS)	1					
X ₇	0.309 ^(**)	0.128 ^(NS)	0.526 ^(**)	0.139 ^(NS)	0.122 ^(NS)	0.413 ^(**)	1				
X ₈	0.258 ^(**)	0.095 ^(NS)	0.222 ^(*)	-0.016 ^(NS)	0.067 ^(NS)	0.217 ^(*)	0.067 ^(NS)	1			
X ₉	-0.012 ^(NS)	0.018 ^(NS)	0.142 ^(NS)	0.084 ^(NS)	0.120 ^(NS)	0.117 ^(NS)	-0.112 ^(NS)	0.226 ^(*)	1		
X ₁₀	0.226 ^(*)	0.149 ^(NS)	0.254 ^(**)	0.089 ^(NS)	0.034 ^(NS)	0.324 ^(**)	0.118 ^(NS)	0.525 ^(**)	0.374 ^(**)	1	
Y	-0.007 ^(NS)	0.095 ^(NS)	0.086 ^(NS)	0.393 ^(**)	0.180 ^(NS)	0.206 ^(NS)	0.171 ^(NS)	-0.184 ^(*)	-0.144 ^(NS)	-0.134 ^(NS)	1

* Correlation is significant at the 0.05 level (2- tailed)
 ** Correlation is significant at the 0.01 level (2- tailed), NS= Not Significant

Legends:

Independent Variables		Dependent variable
X ₁ = Age	X ₆ = Annual family income	Y = Farmers-Extension Workers relationship in a selected union of Narail District
X ₂ = Education	X ₇ = Experience in farming	
X ₃ = Farm Size	X ₈ = Knowledge on Agriculture	
X ₄ = Competition with the fellow farmers	X ₉ = Innovativeness	
X ₅ = Time spent for farm work	X ₁₀ = Cosmopolitaness	