

**PERCEPTION OF THE MAIZE FARMERS TOWARDS
AGRICULTURAL EXTENSION AGENTS**

**A Thesis
By**

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Student No. 1705186
Session: 2017-2018
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IN
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**Department of Agricultural Extension
Hajee Mohammad Danesh Science and Technology University
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PERCEPTION OF THE MAIZE FARMERS TOWARDS AGRICULTURAL EXTENSION AGENTS

ABSTRACT

The objective of this study was to determine perception of the maize farmers towards agricultural extension agents, to explore the relationship between ten selected characteristics of the maize farmers and their perception towards agricultural extension agents and to identify the problems faced by the farmers in accessing modern agricultural information. Chehelgazi union under Sadar upazila of Dinajpur district was the locale of the study area. Randomly selected 90 farmers' from a population of 904 was selected as sample of the study. Data were collected during 15 February to 24 March 2018. Different questions and scales were developed to measure perception and other key issues for the study. Descriptive statistics like mean, standard deviation, range, percentage and rank were used to interpret data. Perception of maize farmers towards agricultural extension agents was measured by using Likert scale. Pearson's product Moment Correlation coefficient (r) was computed to explore the relationship between the selected characteristics of the farmers and their perception towards agricultural extension agents. Result indicate that the majority (90.0 percent) of the respondents had favourable perception towards agricultural extension agents, while 8.9 percent of them had neutral perception and only 1.1 percent of them had unfavourable perception towards agricultural extension agents. Out of ten selected characteristics, five characteristics of the respondents such as family size, annual family income, training received, aspiration and extension media contact had significant positive relationships with their perception. The other selected characteristics of the farmers namely, age, education qualification, farm size, maize farming experience and agricultural knowledge did not show any significant relationship with their perception. "Low literacy level for understanding modern agricultural information" became first major problem faced by the maize farmers in accessing agricultural information.

CHAPTER 1

INTRODUCTION

1.1 General Background

Bangladesh is an agricultural country with an area of 1,47,570 square kilometers. The country has an approximate population of 153.6 millions, placed it as the highly populated country among the least developing countries. About three-fourth of the total population lives in rural areas, virtually all of them making their living exclusively or substantially from agriculture. Bangladesh's gross domestic product (GDP) growth reached 7.24 percent this fiscal year. (BBS, 2017).

Agricultural information interacts with and influences agricultural productivity in a variety of ways. It can help inform decisions regarding land, labor, livestock, capital and management. Agricultural productivity can arguably be improved by relevant, reliable and useful information and knowledge. Hence, the creation of agricultural information (by extension services, research, education programmes and others) is now often managed by agricultural organizations that create information systems to disseminate information to farmers so that farmers can make better decisions in order to take advantage of market opportunities and manage continuous changes in their production systems. Therefore, there is a need to understand the functions and use of particular agricultural information systems in order to manage and improve them, the role of agricultural extension agents is to help farmers from logical opinions and to make sound decision by communicating with them and providing them within formation they need.

Bangladesh is an agro-based country. Most of the people of Bangladesh are depending on agriculture. But it is a matter of great regret that majority of the peasants of Bangladesh are Illiterate and they are collecting agricultural information from the personnel of Department of Agricultural Extension (DAE).The main extension service providers working under the Ministry of Agriculture (MoA). DAE has been practicing conventional methods of transfer of Technology (ToT) which is found incapable to provide demand-led information to the farmers. So, they are running their farming activities with deficit of necessary information. This means the farmers are very much vulnerable in coping with changing demand for Improved farming practices.

Agricultural production can be increased if appropriate technologies are used by the farmers through adoption of improved farming practices. Diffusion of proper knowledge on modern agriculture among the rural people demands an effective communication system. In addition immediacy and effectiveness is also a valuable dimension of information. The farmers should Receive agricultural information as fast as possible so that they understand, interpret, accept and use the information to get desired benefit.

Maize is one of the oldest and most important crop in the world. It is the highest yielding grain crop having multiple uses. The mean yield of maize in 2003 in the world was 4.47 tons per hectare as compared to 2.67 and 3.84 tons per hectare for wheat and rice (paddy), respectively (FAO, 2004).

Maize is a versatile crop with genetic variability that can be grown in almost all types of agro-climatic conditions. It has been introduced as a relatively new crop in the rice based cropping patterns of Bangladesh, especially in the northern region. Now it has become an important cereal crop to its growers as well as in the country. The area under maize cultivation is increasing day by day due to its higher demand that has been created from its multipurpose uses. Maize is playing important role in the agrarian economy of Bangladesh. Maize has diversified uses in home and abroad. It has high potentiality to provide feed for poultry and fish and fodder for livestock. Therefore, increase in the production of maize could enhance poultry and fish farming which will later create employment opportunities for the people of Bangladesh. Dry maize plant is a good fuel for rural households. Thus it helps reduce deforestation in the country to some extent. Maize kernel contains edible oil ranged from 7 to 12 per cent depending on the variety. Maize is a nutritious and palatable food. It is much better than rice in terms of nutrients like protein, fat, minerals, fiber, phosphorus, carotene, and thiamine (INFS, 2003). Currently maize is used to some extent as food in the form of flour (usually mixed with wheat flour) and that mixed flower is used in bakery for making bread and other bakery products to reduce the cost of production. Roasted maize and fried maize are also popular in Bangladesh. Some people fry maize and then grind it together with fried rice to make *Chatu* (maize powder). Because of its higher nutritional status it could be a good source of nutrients for undernourished and malnourished people of Bangladesh. It can be considered as a substitute for both rice and wheat. Therefore, maize can be used as food for ensuring food security for the present as well as for the further.

1.2 Statement of Problem

The high potential productivity of maize in Bangladesh has yet to be fully achieved. There are considerable gaps between potential and achievable and between achievable and farmers' yields. Farmers indicated a large part of the gaps is due to inadequacies in farmer knowledge about maize production, along with socio-economic factors. To cultivate a new crop like hybrid maize, information and technology needs to flow among farmers. Farmers faced lack of information on suitable crop management practices such as time of planting, optimum doses of different fertilizers, the application of micronutrients such as boron, and weeding and irrigation at critical stages of crop development. Farmers usually receive advice from input retailers, DAE extension workers and lead farmers. Retailers are not always able to provide good advice due to their limited understanding of farming methods. DAE workers are often not available. Lead farmers generally do not have an incentive to share information and technology with other farmers. As a result in practice, many farmers depend on their own experience. Some hands-on and audio-visual aided training have important benefits. This resulted in higher production of maize by trained farmers and increased the demand for many more farmers have not received training. This research will answer these following questions:

1. How do farmers perceived towards agricultural extension agents?
2. What are the relationship exist between selected characteristics of the farmers and their perception towards agricultural extension agents?
3. What are the problems faced by the farmers in accessing modern agricultural information?

1.3 Objectives of the Study

1. To determine the perception of the maize farmers towards agricultural extension agents.
2. To explore the relationship between selected characteristics of the maize farmers and their perception towards agricultural extension agents. The selected characteristics are: age, educational qualification, family size, annual family income, farm size, maize cultivation experience, training received, agricultural knowledge, aspiration, and extension media contact.
3. To identify the problems in accessing modern agricultural information.

1.4 Significance of the Study

The study findings and recommendations will be hoped to help both the national and county governments to implement policies that can revitalize maize production and encourage other stakeholder participation on food security initiatives. The study will endeavor to provide information to agricultural extension personnel to identify the strengths and weaknesses of the farmers in maize production and come up with appropriate capacity building programmes. Also for agricultural extension officers to examine their own weaknesses and strengths as change agents and come up with appropriate corrective measures to improve maize yields among small scale farmers. The findings were hoped to provide information to small scale maize farmers to efficiently produce high maize yields with minimal inputs thereby maximizing profit. This research is also hoped to provide a base for further research on maize production issues

1.5 Justification for the Study

A strong relationship between extension agents and their farmers is necessary for ensuring enough and reliable knowledge transfer. According to Pauw and Thurlow (2010), slow expansion of food crops and maize in particular explains weakness in the relationship existing between extension agents and farmers in achieving agricultural growth outcomes in rural areas. Increase in agricultural productivity will reduce income poverty for both men and women in rural and urban areas as stipulated in the National Strategy for Growth and Reduction of Poverty (NSGRP), Cluster 1; Goal number 4 and 5 which aimed at "Reduce Income Poverty of both Men and Women in Rural and Urban Areas". Results from the study could help the government and policy makers to re-structure and modify the organization of the extension services delivery to promote maize productivity. Farmers' perceptions on how they view the perception of the maize farmers towards extension agents in receiving agricultural information, facilitates assessment of the performance of agricultural extension agents in receiving knowledge to maize growers so as to increase productivity in the district. The results also notify extension agents and other actors on their Perception and enable necessary corrections to be made during implementation of their day to day activities.

1.6 Assumptions of the Study

The following assumptions were made by the researcher while undertaking the present study:

- I. The subject selected for the study was good enough to reply adequately to queries designed by the researcher.
- II. The responses furnished by the respondents were reliable.
- III. Information given by the selected respondents was representative of the study area.
- IV. The researcher was adjusted to the social and cultural environment of the study area. Hence, the interviewees expressed their correct opinion without any hesitation.
- V. The data collected by the investigator were free from bias and prejudice

1.7 Limitations of the Study

1. Study was confined within one union of sadar upazila under Dinajpur district.
2. For information about the study, the researcher depended on the data furnished by the selected respondents during their interview.
3. Perception of the farmers could be measured in various ways. However, in the study, this was measured by using Likert-type scale.
4. There were many characteristics of the farmers but in the study only ten of them were selected for investigation.
5. Facts and figures were collected by the investigator only applied to the present situation in the selected area.

Thus, the findings are expected to be useful to students, researcher and extension workers, and particularly for the planners in formulating future plan.

1.8 Definition of Terms

The terms which have been frequently used throughout the thesis are defined and interpreted below:

Age: age of a respondent defined as the span of her life and is measured by the number of years from her birth to the time of interviewing.

Educational qualification: referred to the development of desirable knowledge, skill, attitudes, etc. of an individual through the experiences of reading, writing, observation and related matters.

Family size: It referred to actual number of permanent members in a subject's family who live in a fixed dwelling unit and eat from the same cooking arrangement.

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

Annual income: Annual income referred to the total annual earnings of all the family members of a respondent from agriculture, livestock and fisheries and other accessible sources (business, service, daily working etc.).

Agricultural knowledge: 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.

Aspiration: Aspiration referred to the desire or ambition of an individual regarding his/her farm, family and environment.

Training received: Training received refers to organized instruction aimed at improving knowledge, skill and attitude of an individual so that he/she can perform his/her functions and responsibility more effectively. It referred to the number of days that a respondent had received training.

Extension media contact: The term expressed an individual's access or contact to the communication media and source being used for the dissemination of information related to new technologies.

Extension agent: The extension agent is responsible for providing the knowledge and information that will enable a farmer to understand and make a decision about a particular innovation, and then for communicating that knowledge to the farmer.

CHAPTER 2

REVIEW OF LITERATURE

This section deals with a brief review of previous studies relating to this investigation. The reviews are conveniently presented based on the major objectives of the study. The researcher has tried his best to collect useful information through searching relevant studies, journals etc. However, the literatures of available studies have been briefly discussed in this chapter.

2.1 Concept of Perception

Perception underlies our basic awareness, experience, and interpretation of the world. The reason for studying perception may be divided into two broad categories (Bomstien, 1984) related to this privileged position of perception. The first is that, even on casual introspection, our everyday experience raises a series of intriguing questions about perception. How do properties or events come to be perceived as stable amidst continuous environmental flux, and how do they come to be invested with meaning? The second reason is epistemological, impelled by the question of the origins of human knowledge. Again, the extreme views have been put forward by empiricist, who assert that all knowledge comes through the senses and grows by way of experience, and by nativist, who reason that some kind of knowledge could not possibly rely on experience or be learned, and thus humans enter the world with a sensory apparatus equipped to order and organize rudimentary knowledge. Different experts defined perception in different ways. These are given as follows:

Perception is the process by which a living organism becomes aware of things and events after being exposed to some stimuli. In 1705 the Scottish philosopher Thomas Reid distinguished between sensation and perception, where the term perception to the larger awareness that includes the reference of these sensations to the stimulus. This distribution held until the third decade of the 20th Century when under the influence of the Gestalt psychology the concept of the sensation tended to drop out of the use of the psychologist began to direct their attention to the larger systems of sensory stimulations, which, since objective reference is implicit in them, properly involve perceiving.

Ruch (1953) states his study that perception is the process of organization and interpreting sensory data and combining them with the results of previous experience. It is a response which, in turn, furnishes stimuli that elicit and steep further responses. Perception enables an individual to know how he stands in relation to the objects and conditions of the world around him and to act accordingly.

Hassunallah (1995) states perception as a single unified meaning obtained from sensory process while a stimulus is present.

Bevan (1958) also termed perception as an awareness and interpretation of stimulus object or action. Thus a farmer perceives in his own way of thinking to adopt or practice a new technology provided it meets his own interests, goals and felt needs.

Van Dalen (1973) stated that observation is sensation plus perception, sensation is the immediate result of stimulus to the sense organs. This information is not useful unless it is interpreted. Perception is the art of linking what is sensed with some part of experience to give the sensation meaning. Meaning is in the mind rather than in the objects themselves. Hence, when looking at the same object everyone does not see the same thing. Perception may be relatively simple or highly complex. They may involve a single sense organ or several senses.

Reviews of the meaning of different authors about perception indicate that perception refers to the understanding of an individual about an object or thing.

2.1.1 Factors influencing perception

There are some common factors which influence the perception of an individual. Morgan (1956) suggested several factors that affect our perception. Some of these are:

- We receive best what we attend to.
- Perception is selective so that we attend at once to only part of sensory stimulation. Individuals perceive only the characteristics or qualities of the objects that satisfy their needs and values.
- In general, the larger a stimulus and the more intense it is the more it commands attention and better it is perceived,
- The repetition of a stimulus and the more intense it is the more it commands attention and better it is perceived,
- The repetition of stimulus and the more effective than a stationary presented only once.
- Motivation affects perception. We tend to perceive what we expect to perceive,
- Perception also tends to fill in gaps, so that a person can see the whole object when some of its parts are missing,
- Perception frequently involves the cooperation of different senses,

- Both learning and innate factors contribute to our abilities to perceive. Perception are also modified greatly by learning,
- As object take new meaning in experience. This meaning affect perception. Society and culture indirectly affect perception by fashioning our motives, prejudices and social values,
- When the objects of perception are ambiguous. The perceiver tends to give them more meaning what he perceives may be determined to some extent by his own needs and personal values,

2.1.2 Characteristics of perception: Mohiudin (1993) sated the following characteristics of perception:

Perception is a pattern of structuring process: the stimuli which a man perceives do not come haphazardly. The impulses received by sense organs are transferred to the brain and organized on the basis of intellect and experience. Subject matters of perception are rearranged, and reorganized according to the perceiver's attitude.

Perception is learned: Perception is a learned habit. The perception of an individual depends mainly on his experience and learning. An individual can learn to perceive by organizing different sensation in the light of hid past experience. Perception depends on the perceiver's education, experience, environment, and social influence.

Perception is Selective: perception is a selective process. No one can perceive everything of the external world. One can select one or more objects or events from number stimuli of the external environment and ultimately perceive them. However, the perception selection of the things, objects or events depends on the objects own characteristics emotion, attention, interests and motivation of the individual.

Perception is adaptive: the individual always perceives in accordance with aspiration, positional status, social status, etc. an individual's perception reflects his desires. One can see a perceivable object as he likes to see and can hear as he likes to hear.

Perception is meaningful: perception is a meaningful process of sensation. Sensational objects or events not only obey the organizational process but they attribute a distinct in on the basis of the perceiver's learning, experience, social and cultural influence, mental preparation and attitude.

There are differences among psychologist in their opinion about the nature of perception. However, the psychologist, Neisser (1976) agrees on the following assumptions:

- Perception is an active and constructive process
- Perception is not given by the stimulus input, but occurs as the end-product interactive influence of the presented stimulus and internal hypotheses, expectation and knowledge. In other words, sensory information is used as the basis for inference about the presented stimulus since it is influenced by hypotheses and expectation which will stimulus.
- Since it is influenced by hypotheses and expectation which will sometimes be incorrect, perception is prone to error.

2.2 Review of Literature on Perception of Different Aspects

Alam (2008) has observed his study that the majority 62.50 percent of the farmers had moderately favorable perception of the soil quality degradation due to less use of Organic materials, while 37.50 of them had favorable perception.

Majlish (2007) has concluded most (59.0 percent) of the respondents had had favorable perception while 30 percent and 11 percent of them had moderately favorable and Unfavorable perception of social forestry program respectively.

Afique (2006) stated that majority (97.5 percent) of the respondent rural woman had favorable perception of benefits while only 2.5 percent had moderately favorable perception of benefits of agricultural model farm activities of Sabalamby Unnayan Samity (SUS).

Islam (2005) founded that 57.8 percent had high perception, 41.4 percent having moderate perception and only 0.8 percent had less perception. Perception about causes of monga, 91.4 percent of the respondents had high perception compared to 8.6 percent having moderate perception and none had less perception about remedies of monga.

Sharmine (2005) found that the majority of (91.0 percent) of the respondents had medium perception of benefits while 9 percent had high perception respectively.

Sayeed (2003) reported that 56.7 percent of farmers had less favorable perception of benefit from using manure towards INM, while the rest 43.3 percent had favorable perception of this issue.

Kabir (2002) in his study observed that majority 65.0 percent of the farmers had moderately favorable perception on the effects of Barind Integrated area development project towards

environmental up gradation where only 16.0 and 19.0 percent of them had low and highly favorable perception, respectively.

Fardous (2002) showed that majority (95.5 percent) of the farmers perceived the forestry development activities as moderately positive to highly positive effect of the village and farm forestry programme towards sustainable forestry programme activities, while the rest 4.5 percent perceived in a less positive way.

Chacrabarty (2002) reported that highest proportion (68.0 percent) had high perception and 10.0 percent had low perception of changes.

Alom (2001) observed that majority of the farmers (84.0 percent) possessed moderate perception and 16.0 percent had high perception of Binamoo-5 as a summer crop.

Chowdhury (2001) founded that three-fourth of the respondents showed medium to high favorable perception regarding the benefits of afforestation through improvement of ecological status of the region.

Hossain (2000) found that highest proportion (44.0 percent) of the farmers possessed moderately favorable perception, while 31.0 percent had slightly favorable perception and 25.0 percent possessed highly favorable perception of Binadhan-6.

Islam (2000) revealed that 58.6 percent farmers in the study area had low perception of the harmful effect of agro-chemicals while 35.8 percent had medium and only 5.6 percent had high perception of this issue.

Rahman (2000) founded that farmers of Japan possessed better perception than those of Bangladesh in respect of the same.

2.3 Relationships of Selected Characteristics of the Farmers with their Perception towards Agricultural Extension Agents

2.3.1 Age and perception

Majlish (2007) conducted a study regarding perception of participant woman on social forestry program of BRAC. The study revealed that the relationship between age and perception of social forestry program was negatively significant.

Afique (2006) mentioned that there was no significant between age of rural woman and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Islam (2005) has concluded his study that the age of farmers had no significant relationship with their perception of benefits of practicing crop diversification.

Sayeed (2003) founded that age had no significant effect but negative relation with their perception of benefit from using manure towards INM for sustainable crop production by the farmers.

Kabir (2002) studied perception of farmers on the effects of integrated area development project towards environmental up gradation. The study revealed that there was no significant relationship between age and perception of environmental up gradation.

Hossain (2000) conducted a study and found that age of the respondents had no significant relationship with their perception of the harmful effects of agro-chemicals.

2.3.2 Educational qualification and perception

Afique (2006) mentioned negatively significant relationship between personal education of the rural woman and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Sharmin (2005) founded that personal education of the rural woman had significant positive relationship with their perception of benefits of involvement of IGAs under NGOs.

Uddin (2004) concluded that the level of education of the farmers had significant positive relationship with their perception of sustainable agriculture.

Sayeed (2003) revealed that the education of the respondents had significant positive relationship with their perception from using manure towards integrated Nutrient Management (INM) for sustainable crop production.

Fardous (2002) found a significant positive relationship between education of the farmers' and their perception of the forestry development activities of village and farm forestry program (VFFP) towards sustainable forestry development.

Alom (2001) found that education of farmers had a significant and positive relationship with their perception of BInamoog-5 as a summer crop.

2.3.3 Family Size and perception

Majlish (2007) found that the relationship between family size of participant woman and perception of social forestry program of BRAC was non- significant and followed a negative trend.

Afique (2006) found no significant relationship between family size of the rural woman and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Islam (2005) found that family size of the farmers had no significant relationship with their perception of both causes and remedies of Monga in Kurigram district.

Sharmin (2005) reveal that family size of the rural woman had no significant relationship with their perception of benefits involvement of IGAs under NGOs.

Uddin (2004) found that the family size of the farmers had no relationship with their perception of sustainable agriculture.

Sayeed (2003) found that family size of farmers had no significant relationship with their perception of benefit from using manure towards Integrated Nutrient management (INM) for Sustainable crop production.

Kabir (2002) study revealed that family size of farmers had negative relationship with their perception on the effects of BIADP towards environmental upgradation. Similar finding was also obtained by Alom (2001) in his study.

2.3.4 Annual family income and perception

Majlish (2007) found that the relationship between family income of participant woman and perception of social forestry program of BRAC was non- significant and followed a negative trend.

Afique (2006) observed no significant relationship between annual family income of the rural woman and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Islam (2005) concluded that annual family income of the farmers had positive significant relationship with their perception of both causes and remedies of Monga in Kurigram district.

Uddin (2004) found that the annual family income of the farmers had significant and positive relationship with their perception of sustainable agriculture.

Sayeed (2003) found that annual family income of farmers had significant relationship with their perception of benefit from using manure towards Integrated Nutrient management (INM) for Sustainable crop production.

Kabir (2002) found that there was no significant relationship between annual family income of the farmers and their perception on the effects of BIADP towards environmental upgradation.

2.3.5 Farm size and perception

Adeola (2012) revealed that household size had a non-significant influence on the farmers' perception.

Roy (2009) stated that farm size had negatively significant relationship with farmer's perception.

Majlish (2007) revealed from her study that the relationship between farm size of participant women and perception of social forestry program of BRAC was non-significant and followed a positive trend.

Afique (2006) stated that there was no significant relationship between family farm size of the rural women and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Islam (2005) found that farm size of farmers had no significant relationship with their perception of both causes and remedies of Monga in Kurigram district.

Sharmin (2005) found in her study that farm size of the rural women had no significant relationship with their perception of benefits of involvement in IGAs under a NGO.

Uddin (2004) found that farm size of the farmers had significant and positive relationship with their perception of sustainable agriculture.

Sayeed (2003) observed that farm size of the farmers had a significant positive relationship with their perception of benefit from using manure towards Integrated Nutrient Management (INM) for sustainable crop production.

Fardous (2002) found that there was no significant relationship between farm size of the farmers and their perception of Village and Farm Forestry Program (VFFP) towards sustainable forestry development. Hossain (2001), Hossain (1999) and Majdydyan (1996) found similar findings in their respective studies.

2.3.6 Maize farming experience and perception

Kabir and Rainis (2012) conducted a study on Farmers' Perception on the Adverse Effects of Pesticides on Environment: The Case of Bangladesh. They found that experience of farmers had a significant influence on the farmers' perception

2.2.7 Training received and perception

Islam (2014) concluded that training received of the farmers had significant positive relationship with their perception on the effect of IPM practices.

Kabir and Rainis (2012) conducted a study on farmers' perception on the adverse effects of pesticides on environment: the case of Bangladesh. They found that training had a significant influence on the farmers' perception.

Karim (2009) his study revealed training received of the fish farmers had significant positive relationship with their perception towards flood coping mechanism.

Pal (2009) revealed that training received had a positive significant influence on the farmers' perception.

Roy (2009) stated that training received had a positive significant relationship with farmer's perception.

Majlish (2007) found from her study that the relationship between training experience and participant of women and perception of social forestry program of BRAC was positively significant.

Sarker (2007) revealed his study Training received of the farmers had positive significant relationship with their perception of the farmers regarding transformation of farming system.

Afique (2006) observed that there was no significant relationship between training exposure of the rural women and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Ahmed (2006) found in his study that training received of the respondents had significant positive relationship with their adoption of selected wheat varieties.

Nazrul (2005) revealed that training received of the farmers had no significant relationships with their perception of benefits of practicing crop diversification

2.3.8 Agricultural knowledge and perception

Kabir (2002) concluded that agricultural knowledge had significant positive relationship with the perception on the effect of Barind Integrated Area Development Project (BIADP) regarding environment

Islam (2001) found that agricultural knowledge of farmers had positive significant relationship with their perception of the impact of non-formal education on agricultural development.

Hossain (2000) indicated no relationship between farmer's agricultural knowledge and their perception of Binadhan-6.

2.3.9 Aspiration and perception

Minarovic (1995) observed that aspiration had little association with perception of extension agent on sustainable agricultural practices.

Hartfied (1994) reported that there was a strong relationship between aspiration media and their perception.

2.3.10 Extension media contact and perception

Majlish (2007) founded that the relationship between extension media contact of participant woman and perception of social forestry program of BRAC was non-significant.

Afique (2006) concluded that there was no significant relationship between extension media exposure of the rural woman and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

Islam (2005) found in his study that extension media contact of farmers had no significant relationship with the perception of both causes and remedies of Monga.

Sharmin (2005) observed from her study that extension media contact of the rural woman had a significant positive relationship with their perception of benefits of involvement in IGAs under a NGO.

Uddin (2004) studied on farmer's perception of sustainable agriculture. The findings indicated that the respondents with higher extension media exposure had higher perception of sustainable agriculture.

Sayeed (2003) showed a significant positive relationship between extension media contact of farmers and their perception of benefit from using manure towards INM for sustainable crop production.

2.4 The Conceptual Framework of the Study

Perception is the mental process by which a person becomes aware of the world around him. In this process through the sensory inputs, a person is able to give meaning and interpreting the object and events. Through psychologist hold that perceptual constancy is common for all normal individuals, yet individuals may vary in perceiving a particular object or event due to the differences in their demographic, socio-economic and socio-psychological characteristics. The possible explanation is that individuals occupying favourable positions on certain characteristics are better able to perceive things than others. Kelly (1995) observed that perception become more and more preferred with age, education, past experience and mental development, because they embody the more accurate and complete knowledge of perceived objects. The conceptual framework of Rosenberg and Hovland (1960) was kept in mind while framing the structural arrangement for the focus issue and selected characteristics. This study was concerned with focus issue perception of maize farmers towards extension agents and the selected characteristics of famers viz. age, educational qualification, family size, annual familyincome, farm size, maize cultivation experience, training received, agricultural knowledge, aspiration and extension media contact. The conceptual model of the study has been presented in figure 2.1.

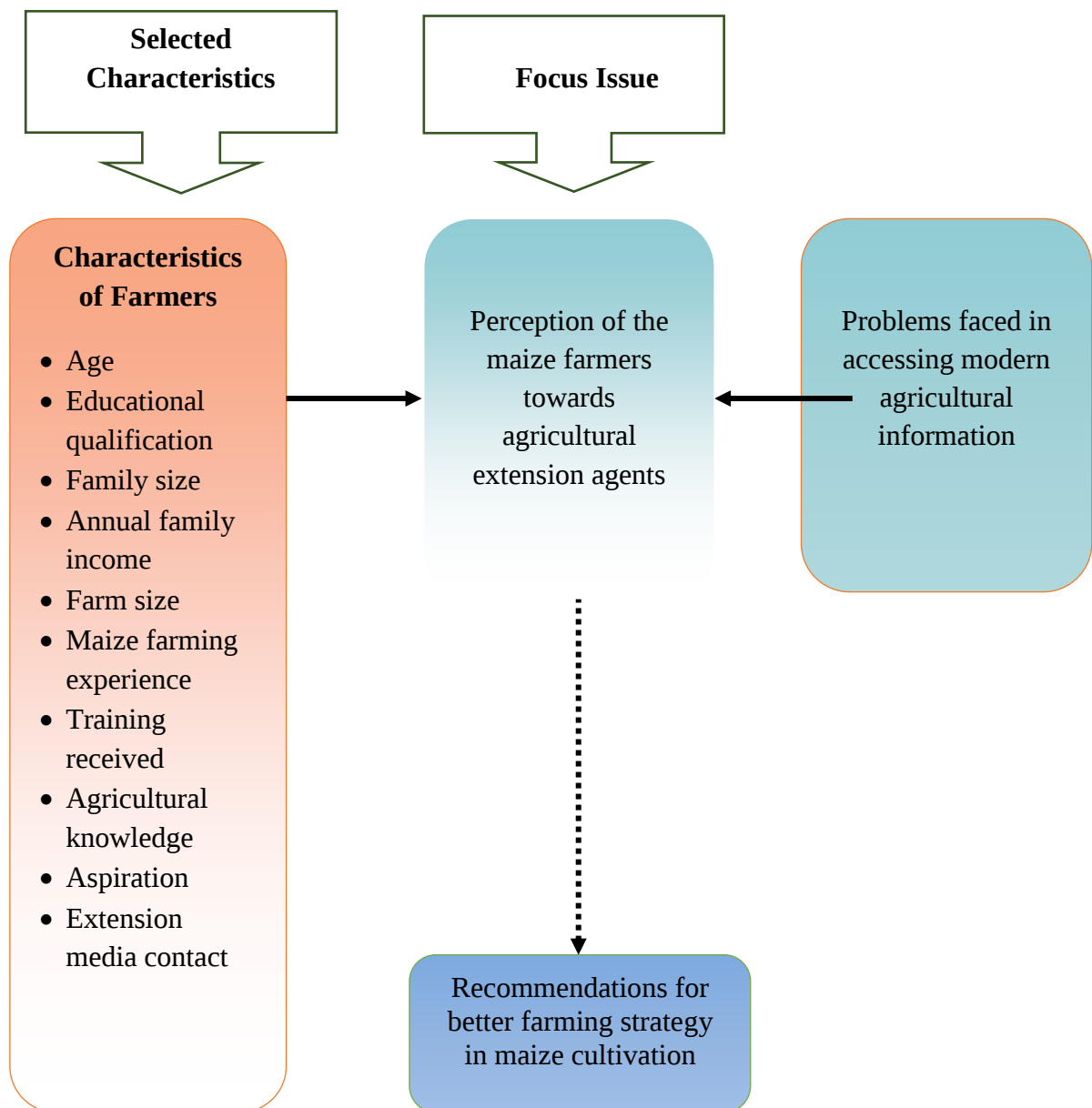


Figure 2.1 Conceptual Framework of the Study

—————▶ Indicating the parameters taken under investigation.

.....▶ Indicating the parameters not taken under investigation.

CHAPTER 3

METHODOLOGY

In conducting a research study, methodological issue is one of the prime considerations for yielding of valid and reliable findings. Appropriate methodology enables the researcher to collect valid and reliable information and to analyze the information properly in order to arrive at correct conclusions. However, the methods and operational procedures followed in conducting this study has been described in the subsequent sections of this Chapter.

3.1 The Locale of the Study

Sadar upazila of Dinajpur district was the locale of the study. Dinajpur Sadar upazila consists of ten unions, in which chehelgazi union had been selected randomly. The map of Dinajpur district has been presented in Figure 3.1 and the map of Sadar upazila under Dinajpur district has been presented in Figure 3.2.

3.2 Population and Sample of the Study

A list of maize growers of the study area was prepared by the researcher himself with the help of Sub Assistant Agriculture officer (SAAO) and Agriculture Extension Officer (AEO). The list comprised a total 904 maize growers in the study area. These farmers constituted the population of this study. To make a representative sample about 10.0 percent of the population was selected using Simple random sampling technique. Thus 90 maize growers were selected as the sample of the study. Besides this, 10.0 percent of the sample was selected randomly as reserves who were supposed to be interviewed only when a respondent in the original sample list was unavailable during data collection.

3.3 Data Collection Instrument

In a social research, preparation of an interview schedule for collection of information with very careful consideration is necessary. Keeping this fact in mind the researcher prepared an interview schedule carefully for collecting data from the respondents. Objectives of the study were kept in view while preparing the interview schedule. The initially prepared interview schedule was pre-tested among 10 respondents of the study area. Those 10 respondents were excluded while selecting sample. The pretest was helpful to find out gaps and to locate faulty questions and statements. Alterations and adjustments were made in the schedule on the basis of experience of the pretest. English version of the interview schedule is shown in Appendix A.

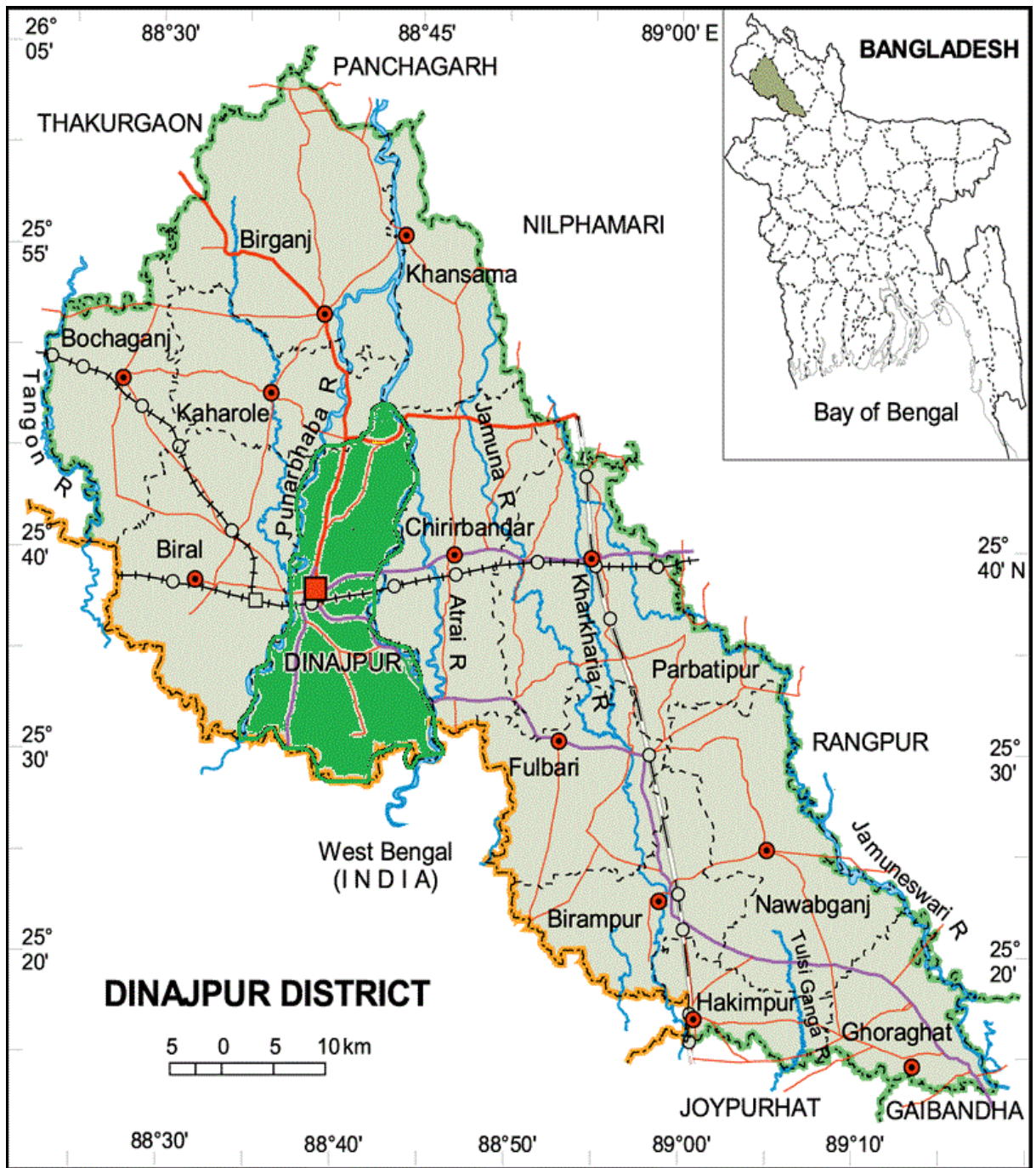


Figure 3.1 Map of Dinajpur district showing the study area (Bangladesh inset)

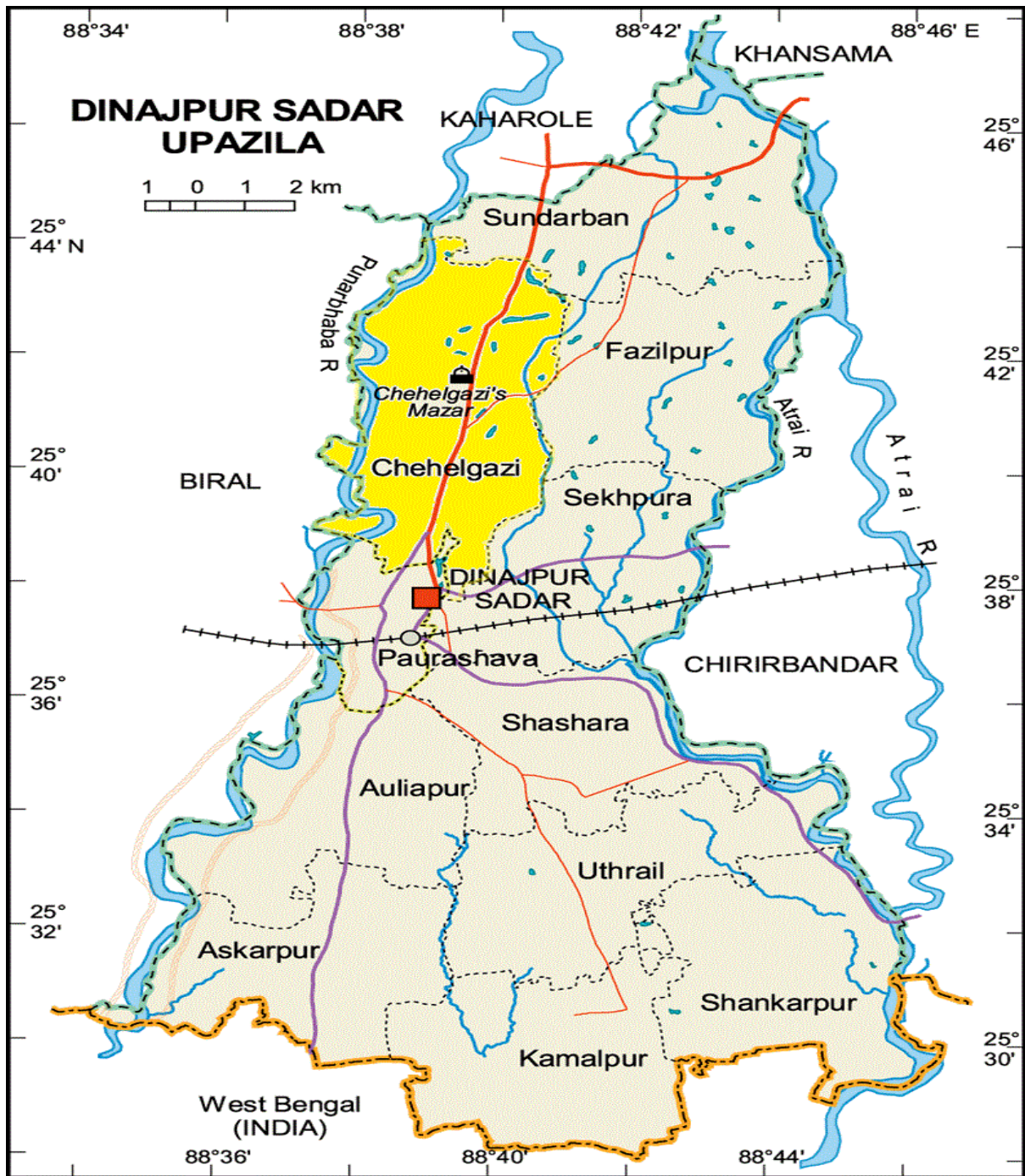


Figure 3.2 Map of Dinajpur Sadar upazila showing the study area

3.4 Collection of Data

The researcher collected data from the sample farmers with the help of a pre-tested interview schedule. Before starting collection of data, the researcher met with the Sub Assistant Agriculture Officer of the respective blocks in order to explain the objectives of the study and requested them to provide necessary help and co-operation in collection of data. The local leaders of the area were also approached to render essential help. As a result of all these a good working atmosphere was created in the study area which was very helpful for collection of data by the researcher. Before going to the respondents for interview they were informed earlier, so that they would be available in their respective area. The interviews were held individually in the house or farms of the respective respondent. The researcher established adequate rapport so that the respondents did not feel hesitate to provide actual information. Whenever any respondent faced difficulty in understanding a particular question, the researcher took care to explain the same clearly. No serious constraints were faced by the researcher in collecting data. Data collection was done during 15 February to 24 March 2018.

3.5 Variables of the Study

In social research, the selection and measurement of variables constitute an important task. In this connection, the researcher looked into the literature to widen his understanding about the nature and scope of the variables involved in the research. Ezkiel and Fox (1959) defined a variable as any measurable characteristics which can assume varying or different values in successive individual cases. The hypothesis of a research, while constructed properly, contains at least two important elements, a selected characteristics and a focus issue. A selected characteristic is that factor which is manipulated by the researcher in his attempt to ascertain its relationships to an observed phenomenon (Townsend, 1953).

3.6 Selected Characteristics and Focus Issue

Perception of maize farmers towards extension agents in receiving agricultural information was the main focus of this study. For selection of characteristics, the researcher went through the past related literature as far as available. He discussed with the researcher, experts in the relevant fields and research fellows in agricultural and related disciplines. He also carefully noticed the various characteristics of the farmers of the study. Availability of time, money and other resources were also kept in view in selecting the variables. Characteristics of the farmers like age, educational qualification, family size, annual family income, farm size, maize farming experience, training received, agricultural knowledge, aspiration, extension media contact were selected as the selected characteristics.

3.7 Measurement of Variables

In order to conduct the study in accordance with the objectives, it was necessary to measure the selected variables. This section contains procedures for measurement of both selected characteristics, as well as focus issue of the study. The procedures followed in measuring the above mentioned characteristics and focus issue are presented below:

3.7.1 Measurement of Selected characteristics

It was pertinent to follow a methodological procedure for measuring the selected variables in order to conduct the study in accordance with the objectives already formulated. The procedures for measuring the independent variables are described below:

3.7.1.1 Age

Age of a respondent was measured in terms of years from birth to the time of interview which was found on the basis of response (Azad, 2003). A score of one (1) was assigned for each year of age. Question regarding this variable appears in item number 1 in the interview schedule (Appendix-A).

3.7.1.2 Educational qualification

Education of a respondent was measured in terms of years of schooling completed in educational institute. A score of one (1) was given for each year of schooling. If a respondent did not know how to read and write his education score was taken as zero (0). A score of (0.5) was given to that respondent who could sign his/her name only.

3.7.1.3. Family size

The family size was measured by the total number of members in the family of a respondent. The family members included the respondent himself or herself, his wife or husband, sons and daughter and other dependents. The information was obtained by a respondent's response to item number 3 of the interview schedule (Appendix A). The total number of family members was considered as the family size score of a respondent.

3.7.1.4 Annual family income

Annual income of a respondent was measured on the basis of his or her total yearly earnings from farming and other sources in which the respondent and his family members were involved and expressed in thousand taka. The method of ascertaining income from farming involved two phases, in the first phase, the yield of all the crops, in the preceding were noted.

All the yields were converted into cash income according to the prevailing market price. The earning of each respondent from different sources was included in calculating the annual income. Yearly earnings from farming and other sources were added together to obtain total income of a respondent. Data obtained in response to item number 4 of the interview schedule were used to determine the income of the respondents' family.

3.7.1.5 Farm size

The farm size of a maize grower referred to the total area of land, on which his family carried out farming operations, in terms of full benefit to his or her family. The farm size was measured in hectares for each maize grower using the following formula:

$$FS=A+B+C+1/2(D+E) +F +G$$

Where,

FS= Farm Size

A= Homestead

B= Own land under own cultivation

C= Land taken from others on lease

D= Land taken from others on *borga*

E= Land given to others on *borga*

F= pond area

G= Others (if any)

The data were first recorded in term of local unit i.e. acre and then converted to hectare. This variable appears in item number 5 in the interview schedule as presented in Appendix A.

3.7.1.6 Maize cultivation experience

Maize cultivation experience of a maize farmer was measured by the total number of years he/she cultivated maize. A score of one (1) was assigned for each year of cultivation. This variable appears in item number 6 in the interview schedule as presented in Appendix-A.

3.7.1.7 Training received

It was operationalized by the number of days a respondent had received training in his or her life up to the day of interview. The training related to agriculture that was sponsored by government, non-government/NGO and other relevant organizations was considered only. A score of one (1) was assigned for each day of training received. This variable appears in item number 7 in the interview schedule as presented in Appendix A.

3.7.1.8 Agricultural knowledge

Agricultural knowledge was measured by asking fifteen questions to the respondents. The assigned score for all the questions was 30. Full score i.e.2 are assigned for each correct answer, 1 for partial answer and zero for totally wrong answer. However, for correct responses to all questions, a respondent could obtain a total score of 30 while for wrong answer to all questions he could get 0, indicating no agricultural knowledge and 30 indicating very high knowledge. The variable appears in item number 8 (Appendix A)

3.7.1.9 Aspiration

Likert scale was used for computing the aspiration score. For measuring aspiration, 8 (eight) items have chosen for getting the opinion of the respondents. For positive statements scores assigned to the responses were 5, 4, 3, 2, and 1, respectively. For negative statements the scoring system was reverse. Thus, the possible aspiration score of the respondents could range from 8 to 40, where 8 indicated very low aspiration and 40 indicated very high level of aspiration.

3.7.1.10 Extension media contact

Extension media contact was computed on the basis of the extent of contact of a respondent in 14 selected information sources. Scores were assigned in the following manner in order to measure the extension contact:

Extent of visit	Score assigned
Not at all	0
Rarely	1
Occasionally	2
Regularly	3

Logical frequencies of contact were considered for each response as shown in item number 9 of the interview schedule. Thus, extension media contact score of the respondents could range from 0-42, while 0 (zero) indicated no extension media contact and 42 indicated highest contact.

3.7.2 Measurement of focus issue

Perception of the maize farmers towards extension agents in receiving agricultural information was the focus issue of the study. On the basis of this main aspect, the researcher obtained knowledge by visiting the study area, discussing with the farmers and local leaders at the time of collecting data. Besides, the researcher discussed with the Agriculture Extension Officer (AEO), Sub Assistant Agriculture Officer (SAAO) and other related persons of the respective study area.

Perception of the maize farmers towards agricultural extension agents was measured on the basis of 15 common perception statements which are related to the maize farmers' perception to the agricultural extension agents. Each farmer indicated the extent of perception of the maize farmers towards extension agents in receiving agricultural information by checking any one of the following five responses.

These were strongly agree, agree, undecided, disagree and strongly disagree. Scores were assigned in the following manner:

Extent of farmers' perception	Score assigned
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

The scores for responses against all the 15 perceptions statements were added together to obtain individual perception score. Therefore, perception score of the respondents could range from 15 to 75.

Farmers' Perception Index (FPI) for each perceptions statement was computed by using following formula:

$$\text{Farmers' Perception Index (FPI)} = N_{sa} \times 5 + N_a \times 4 + N_u \times 3 + N_d \times 2 + N_{sd} \times 1$$

Where,

N_{sa} = Number of respondents indicating perception as 'strongly agree'

N_a = Number of respondents indicating perception as 'agree'

N_u = Number of respondents indicating perception as 'undecided'

N_d = Number of respondents indicating perception as 'disagree'

N_{sd} = Number of respondents indicating perception as 'strongly disagree'

Thus, the FPI will range from 90 to 450 where 90 mean unfavourable perception and 450 mean Favourable perception towards extension agents.

3.7.3 Problems faced in accessing modern agricultural information

Problem means some difficulties that create obstacles to achieve specific goal. In this study, problems faced in accessing modern agricultural information were one of the objectives. For measuring problems, open-ended questions were asked to the responded about their difficulties in accessing modern agricultural information. Number of citations on different problems mentioned by the respondents' was considered for analysis.

3.8 Statement of the Hypothesis

The following null hypothesis was considered to explore the relationship between the focus issue and selected characteristics.

There were no relationships between farmers' perception towards agricultural extension agents and their selected characteristics including age, education qualification family size, annual family income, farm size, maize farming experience, training received, agricultural knowledge, aspiration and extension media contact.

3.9 Data Processing and Analysis

After completion of field survey, all the data were processed according to the objectives of the study. Local units were converted into standard units. All the individual responses to questions of the interview schedule were transferred to master sheet to facilitate tabulation, categorization and organization. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form. SPSS 20.0 computer package was used for data processing and analysis. The statistical measures such as range, mean, standard deviation and percentage were used for describing both the focus issue and selected characteristics. Tables were also used in presenting data for clarity of understanding. To find out the relationship of selected characteristics of the respondents and the perception Pearson's Product Moment Co- efficient of Correlation (r) was computed. Five percent (0.05) level of probability was used for rejecting a null hypothesis. Co-efficient values signification at 0.05 level is indicated by one asterisk (*) and that at 0.01 level by two asterisks (**).

CHAPTER 4

RESULTS AND DISCUSSION

In this chapter, the findings of the study and interpretation of the results have been presented according to the objectives of the study. This chapter has been divided into four sections. The first section deals with the extent of perception of maize farmers while the second section deals with the selected characteristics of the farmers. The third section deals with the relationships between the farmers' selected characteristics and their extent of perception, finally, the fourth section deals with problems faced in accessing modern agricultural information has been discussed.

4.1 Perception of the maize farmers towards agricultural extension agents

The focus issue of the study was perception of the maize farmers towards agricultural extension agents which are discussed into following two sub-sections.

4.1.1 Rank order of the perception statements of the maize farmers

Farmers Perception Index (PFI) was ranged from 340 to 390 against the possible range of 90-450. It was observed that “assist to increases farm-income of maize farmers” ranked first in the table with FPI 390 followed by “provides advice on land preparation” (FPI=388). This means that the farmers are concern about their higher income and in preparing maize field, because it was observed that most of farmers in the study area are cultivate hybrid maize variety.

“Provide information regarding storage” and “Inform the farmers about marketing” ranked last two i.e. 15th and 14th positions in the table with PFI of 340 and 342 respectively. These situations arise because most of the farmers in the study are selling their maize immediately after harvesting and sufficient buyer was available there.

Table 4.1.1 Distribution of the farmers according to their extent of perception and rank order

Sl. No.	Statements	Extent of Perception					*FPI	Rank order
		5	4	3	2	1		
1.	Provides advice on land preparation	42	40	3	4	1	388	2 nd
2.	Give advice about new variety of maize	29	52	6	3	0	377	4 th
3.	Inform proper time for planting	26	50	11	2	0	367	10 th
4.	Inform about seed treatment seed treatment	14	56	17	2	1	350	13 th
5.	Suggest about insect control methods	29	50	7	4	0	374	5 th
6.	Advice on disease control methods	30	47	13	0	0	377	3 rd
7.	Inform about irrigation practices	27	49	12	2	0	371	6 th
8.	Recommend about fertilizer application	24	52	13	1	0	369	7 th
9.	Suggest about harvesting practices	19	49	19	2	1	353	12 th
10.	Disseminate information through result demonstration meeting	21	52	9	6	2	354	11 th
11.	Give knowledge of farmers on maize production	23	56	8	2	1	368	8 th
12.	Helps in changing attitude of maize growers	25	52	8	5	0	367	9 th
13.	Assist to increases farm-income of maize farmers	37	47	5	1	0	390	1 st
14.	Inform the farmers about marketing	23	33	28	5	1	342	14 th
15.	Provide information regarding storage	15	52	15	4	4	340	15 th

*PI= Perception Index;

5= Strongly agree, 4= Agree, 3= Undecided, 2= Disagree and 1= Strongly disagree

4.1.2 Overall perception of the maize farmers towards agricultural extension agents

Farmers' perception towards extension agents was measured by computing a perception score which could range from 15 to 75. However, the observed scores ranged from 25 to 72 with a mean of 60.78 and the standard deviation of 7.42. Based on their observed perception score the respondents are classified into three categories namely "Unfavourable (≤ 30)", "Neutral (31-45)" and "Favourable (> 45)" as shown in Table 4.1.2.

Table 4.1.2 Overall distribution of the respondents according to perception towards agricultural extension agents

Range		Categories	Respondents		Mean	Standard Deviation
Possible	Observed		Frequency	Percent		
15-75	25-72	Unfavourable (≥ 30)	1	1.1	60.78	7.42
		Neutral (31-45)	8	8.9		
		Favourable (> 45)	81	90.0		
		Total=	90	100.0		

Data contained in the Table 4.1.2 indicate that the overwhelming majority (90.0 percent) of the respondents had favourable perception while 8.9 percent of them had neutral perception and only 1.1 percent of them had unfavourable perception towards agricultural extension agents. These findings indicate that the agricultural extension agents have scope for increasing perception of the maize farmers towards their livelihood improvement.

. 4.2 Selected Characteristics of the Maize Farmers

The ten selected characteristics of the maize farmers such as, age, educational qualification, family size, annual family income, farm size, training received, maize farming experience, training received, agricultural knowledge, aspiration, extension media contact were considered as the independent variables of this study. The findings of these characteristics are presented in Table 4.2 and have been discussed the following sub-sections.

4.2.1 Age

Age scores of the respondent farmers were found to range from 20 to 75. The mean is 44.40 with the standard deviation of 13.86. Based on their age, the farmers were classified into three categories as ‘young’ (up to 35), ‘middle’ (36-50) and ‘old’ (above 50) shown in Table 4.2.

Data contained in Table 4.2 indicate that the highest proportions (37.8 Percent) of the respondents were middle compared to 33.3 percent young and 28.9 percent were old. Near about three-fourths (71.1 Percent) of the respondents were under young to middle aged category. Although, the respondents in the study area were young to middle aged. Young people are generally receptive to new ideas and things. However, they might have valuable opinion in regard to the extent of perception towards extension agents.

Table 4.2 Salient features of the selected characteristics of the maize farmers (N=90)

Characteristics	Scoring method	Range	Categories	Respondents		Mean	SD
		Observed (Possible)		No.	Percent		
Age	No. of year	20-72 (Unknown)	Young aged (≥ 35)	30	33.3	44.40	13.86
			Middle aged (36-50)	34	37.8		
			Old aged (>50)	26	28.9		
Educational qualification	Year of schooling	0.0-16 (Unknown)	Illiterate (0)	7	7.8	5.82	5.02
			Can sign only (0.5)	28	31.1		
			Primary level (1-5)	9	10.0		
			Secondary level (6-10)	29	32.2		
			Above secondary level (>10)	17	18.9		
Family size	No. of members	2-12 (Unknown)	Small (≥ 3)	10	11.1	5.31	1.88
			Medium (4-6)	68	75.6		
			Large (>6)	12	13.3		
Annual family income	('000' Tk.)	32.70-950.0 (Unknown)	Low income (≥ 100)	8	8.9	253.80	189.17
			Medium income (100.01-400)	71	78.9		
			High income (>400)	11	12.2		
Farm size	Hectare	0.22-9.0 (Unknown)	Small (0.21-1.0)	52	57.8	1.32	1.34
			Medium (1.01-3.0)	31	34.4		
			Large (>3.0)	7	7.8		
Maize farming experience	Year	3-25 (Unknown)	Low (≥ 8)	17	18.9	10.89	3.33
			Medium (9-14)	56	62.2		
			High (>15)	17	18.9		
Training received	No. of days	0-15 (unknown)	No (0)	61	67.8	1.00	2.23
			Short (≥ 5)	25	27.8		
			Medium (6-10)	3	3.3		
			Long (>11)	1	1.1		
Agricultural knowledge	Score	10-26 (0-30)	Fair (≥ 10)	2	2.2	19.77	3.73
			Good (11-20)	46	51.1		
			Excellent (>21)	42	46.7		
Aspiration	Score	7-28 (8-40)	Low (≥ 20)	12	13.3	16.23	3.30
			Medium (21-30)	76	84.4		
			High (>30)	2	2.3		
Extension media contact	Score	1-31 (0-42)	Low (≥ 14)	76	84.4	10.38	5.16
			Medium (15-28)	13	14.4		
			High (≥ 29)	1	1.2		

4.2.2 Educational qualification

The educational qualification scores of the respondents ranged from 0 to 16, the mean being 5.82 and standard deviation 5.02. Based on the educational qualification scores, the respondents were classified into five categories like ‘illiterate’ (0); ‘can sign only’ (0.5); ‘primary education’ (1-5); ‘secondary education’ (6-10) and ‘above secondary education’ (>10). The distribution of the respondents on the basis of their educational qualification has been presented in Table 4.2.

Data presented in the above Table 4.2 indicate that 32.2 percent had secondary education, 31.1 percent were can sign only, 18.9 percent had above secondary education level of education, 10.0 percent had primary education and only 7.8 percent of the respondents were illiterate.

Education helps the respondents to obtain useful information related to agricultural practice, especially maize practices. The findings of the study indicate that majority of the respondents (32.2 Percent) had secondary education, who are supposed to prefer in receiving information on maize from extension agents.

4.2.3 Family size

The family size ranged from 2 to 12 with the mean of 5.31 and the standard deviation is 1.88. Based on the family size score the respondents were classified ‘small’ (≤ 3), ‘medium’ (4-6), ‘large’ (> 6).shown in Table 4.2. Data contained in Table 4.2 indicate that majority (75.6 percent) of the respondents fell into medium family size category, while 13.3 and 11.1 percent had small and large family size, respectively. However, 88.9 percent of the respondents had large to medium family size.

The data of this study also indicate that the mean family size (5.31 persons) in the study area was higher than the national mean of 4.85 persons (BBS, 2015). This may be due to the prevalence of joint family system in the study area. In the study area it was found that the family bonding was very common and they wanted to live together.

4.2.4 Annual family income

Annual family income score of the respondents ranged from Tk. 32.70-950.0 with the mean of Tk. 253.80 and the standard deviation is Tk. 189.17. On the basis of the annual family income, the respondents were classified into three categories namely ‘low income’, ‘medium income’, and ‘high income’ as shown in Table 4.2.

Data presented in Table 4.2 indicate that the highest proportion (78.9 percent) of the respondents had medium annual income, while 12.2 percent had high income and 8.9 percent

of the respondents have low income. As a result, the most of the respondents (91.1 percent) in the study area were medium to high income earners.

The mean income of the respondents in the study area was higher than the mean per capita income of the Bangladesh 132.66 Taka (BBS 2017). However, higher annual income of the respondents allow them to invest more in farming operations which ultimately leads them to come in contact with media.

4.2.5 Farm size

The farm size of the farmers in the study area varied from 0.22-9.0 ha. The mean farm size is 1.32 ha and the standard deviation is 1.34. Based on the farm size, the respondents were classified into three categories namely 'small farm size', 'medium farm size' and 'high farm size' as shown in Table 4.2.

The Table 4.1 shows that the highest proportion (57.8 percent) of the respondents belonged to small farm size; while 34.4 percent belonged to medium farm size and only 7.8 percent belonged to large farm size. Thus, most of the farmers (92.2 percent) were in the categories of small to medium farm size. The study revealed that most of the farmers of the study area were poor and they had little land for crop production. Islam, (2014), has found near similar this. This farm size mean was higher than the national mean of 0.91 hectare (BBS, 2013).

4.2.6 Maize farming experience

The maize farming experience of the farmers in the study area varied from 3-25 years. The mean maize farming experience is 10.89 and the standard deviation is 3.33. Based on the farming experience, the respondents were classified into three categories, namely 'Low' (≤ 8), 'Medium' (9-14), and 'High' (> 15) as shown in Table 4.2.

The Table 4.2 shows that the highest proportion (62.2 percent) of the respondents belonged to medium maize farming experience category, while 18.9 percent of the respondents belonged to low maize farming experience of the farmers and 18.9 percent belonged to high maize farming experience category.

4.2.7 Training received

Training received scores of the respondents were found to be varying from 0 to 15 days with the mean of 1.00 and the standard deviation was 2.23. The farmers on the basis of their training received score were classified into four categories namely 'No' (0), 'Short' (≤ 5), 'Medium' (6-10) and 'Long' (> 11) as shown in Table 4.2.

The Table 4.2 shows that the highest proportion (67.8 percent) of the respondents belonged to no training received category, while 27.8 percent belonged to short training received and 3.3 percent belonged to medium training received category and only (1.1) percent to long training received category. However, training received helps the respondents in different farming activities.

4.2.8 Agricultural knowledge

The agricultural knowledge scores of the respondents ranged from observed 10 to 26 against the possible range of 0 to 30. The mean is 19.77 and standard deviation is 3.73. On the basis of their agricultural knowledge the respondents were classified into three categories 'Fair' (≤ 10), 'Good' (11-20), 'Excellent' (> 21) as shown in Table 4.2.

Data presented in Table 4.2 indicated that more than half (51.1 percent) of the farmers had good knowledge while 46.7 percent had excellent knowledge followed by 2.2 percent had fair knowledge on agriculture. Thus, overwhelming majority (97.8 percent) of the farmers had good to excellent agricultural knowledge.

4.2.9 Aspiration

The aspiration scores of the respondents ranged from 7 to 28 against the possible range 8-40 with a mean and standard deviation 16.23 and 3.30, respectively. Based on their aspiration scores, the respondent were classified as 'low aspiration' (up to 20); 'medium aspiration' (21-30) and 'high aspiration' (> 30) which is presented in the Table 4.2.

It is revealed from the Table 4.2 that the highest proportion (84.4 percent) of the respondents had medium aspiration, 13.3 percent of the respondents had low aspiration and 2.3 percent of the respondents had high aspiration respectively. Findings showed that majority of the farmers (97.8 percent) possessed low to medium aspiration.

4.2.10 Extension media contact

The extension contact scores of the maize growers ranged from 1 to 31 against 0 to 42 with an mean of 10.38 and standard deviation of 5.16. Based on their aspiration scores, the respondent were classified as Low (≤ 14), Medium (15-28), High (> 29) which is presented in the Table 4.2.

Data presented in Table 4.2 indicate that more than four-fifths (84.4 percent) of the respondents had low extension contact while 14.4 percent had medium and only 1.2 percent had high extension contact.

Findings indicate that the respondents under the study area had generally extension contact with the different information sources. Extension contact helps the farmers for better understanding and to get recent information regarding improved technologies. Sarkar (1997) and Podder (1999) found the similar results. However, Pal (2009) observed that the highest proportion of the growers had low extension contact in their respective studies.

4.3 Relationship between the focus issue and selected characteristics of the maize farmers

This section deals with the findings exploring the relationship between the focus issue and selected characteristics of the maize farmers of the study area. Pearson's Product Moment Co-efficient of Correlation (r) was used to test the null hypothesis regarding the relationship between the concerned variables. Five percent (0.05) level of probability was used as the basis for rejecting null hypothesis. The relationship between the focus issue and selected characteristics of the maize farmers has been presented in Table 4.3. However, the correlation matrix has been presented in Appendix-B in order to have a clear exploration of the inter-correlation and multi-co-linearity among the variables.

Table 4.3 Relationship between the focus issue and selected characteristics of the maize farmers

Focus Issue	Selected Characteristics	Computed values of ' r ' with 88 d.f.
Perception of the maize farmers towards agricultural extension agents	Age	-0.062
	Educational qualification	0.191
	Family size	0.225*
	Annual family income	0.311**
	Farm size	0.202
	Maize farming experience	0.007
	Training received	0.220*
	Agricultural knowledge	0.133
	Aspiration	0.265*
	Extension media contact	0.250*

** Correlation is significant at the 0.01 level ($r = 0.270$)

* Correlation is significant at the 0.05 level ($r = 0.208$)

4.3.1 Relationship between age and perception of the maize farmers

The correlation coefficient between age of the maize farmers and their perception towards agricultural extension agents was '-0.062' as shown in Table 4.3. This value is less than the tabulated value of ' r ' (0.208) at the 0.05 level of probability. So the null hypothesis could not be rejected. Therefore, it can be concluded that the age of the farmers had no significant

relationship with their perception towards agricultural extension agents. Similar relationships were revealed by Sarker (2007), Sayeed (2003), Chowdhury (2001), Islam (2000) and Hossain (2000).

4.3.2 Relationship between educational qualifications and perception of the maize farmers

The calculated correlation coefficient between educational qualifications of the farmers and their perception towards agricultural extension agents was “0.191” as shown in Table 4.3. This value is less than the tabulated value of ‘r’ (0.208) at the 0.05 level of probability. So the concerned null hypothesis was not rejected. Thus, it may be concluded that there is no significant relationship between educational qualifications and perception of the maize farmers towards agricultural extension agents. Similar findings were also found by Bhiuyan (1988), Kasemand Jones (1988), Sarker (1995), Ullah (1996) and Anissuzzaman (2003) in their respective studies.

4.3.3 Relationship between family size and perception of the maize farmers

The computed correlation coefficient between family size and their perception towards agricultural extension agents was ‘0.225’ as shown in Table 4.3 which is more than the tabulated value of ‘r’ (0.208) at the 0.05 level of probability. Hence, the null hypothesis was rejected. It is, therefore, concluded that family size of the farmer had significant relationship with their perception towards agricultural extension agents.

4.3.4 Relationship between annual family income and perception of the maize farmers

The correlation coefficient between annual family income and their perception towards agricultural extension agents was ‘0.311’ as shown in Table 4.3 which is more than the tabulated value of ‘r’ (0.270) at the 0.01 level of probability. So, the concerned null hypothesis was rejected. Thus, it may be concluded that there was significant and positive relationship between annual family income and their perception towards agricultural extension agents. So it could be said that annual family income of the maize farmers played an important role in their perception. The farmers with more annual family income were likely to have more positive perception towards agricultural extension agents. The study conducted by Sayeed (2003) and Chintawar (1997) also observed similar findings in their respective studies.

4.3.5 Relationship between farm size and perception of the maize farmers

The computed correlation coefficient between farm size of the maize farmers and their perception was '0.202' as shown in Table 4.3. This is less than the tabulated value of 'r' (0.208) at the 0.05 level of probability. So, the concerned null hypothesis was not rejected. Thus, it may be concluded that there was no significant relationship between the farm size and perception of the maize farmers towards agricultural extension agents.

4.3.6 Relationship between maize farming experience and perception of the maize farmers

The calculated correlation coefficient between maize farming experience of the farmers and their perception towards agricultural extension agents was '0.007' as shown in Table 4.3. This is less than the tabulated value of 'r' (0.208) at even 0.05 level of probability. So, the concerned null hypothesis was not rejected. Thus, it may be concluded that there was no significant relationship between maize farming experience and perception of the maize farmers towards agricultural extension agents.

4.3.7 Relationship between training received and perception of the maize farmers

The correlation coefficient between training received of the maize farmers and their perception towards agricultural extension agents was '0.220' as shown in Table 4.3. This value is more than the tabulated value of 'r' (0.208) at the 0.05 level of probability. So, the concerned null hypothesis was rejected. Thus, it may be concluded that there was significant and positive relationship between training received of the maize farmers and their perception towards agricultural extension agents. This means that, with the increase of training received of the maize farmers, perception towards agricultural extension agents was noticeably increased. Majlish (2007), Sarker (2007), Sana (2003), Kabir (2002), Fardous (2002) and Chowdhury (2001) also found similar relationships in their respective studies.

4.3.8 Relationship between agricultural knowledge and perception of the maize farmers

The calculated correlation coefficient between agricultural knowledge of the maize farmers and their perception towards agricultural extension agents was '0.133' as shown in Table 4.3. which are less than the tabulated value of 'r' (0.208) at the 0.05 level of probability. So, the concerned null hypothesis could not be rejected. Thus, it may be concluded that there is no significant relationship between agricultural knowledge the maize farmers and their perception towards agricultural extension agents.

4.3.9 Relationship between aspiration and perception of the maize farmers

The correlation coefficient between aspiration of the farmers and their perception towards agricultural extension agents was '0.265' as shown in Table 4.3. This value is more than the tabulated value of 'r' (0.208) at the 0.05 level of probability. So the concerned null hypothesis was rejected. Thus, it may be concluded that there was positive and significant relationship between aspiration of maize farmers and their perception towards agricultural extension agents.

4.3.10 Relationship between extension media contact and Perception of the maize farmers

The computed correlation coefficient between extension media contact of the maize farmers and their perception towards agricultural extension agents was '0.250' as shown in Table 4.3 which is more than the tabulated value of 'r' (0.208) at the 0.05 level of probability. So, the concerned null hypothesis was rejected. Thus, it may be concluded that there was significant and positive relationship between extension media contact of the maize farmers and their perception towards agricultural extension agents.

4.4 Problems faced in accessing modern agricultural information

For maize cultivation, farmers faced lot of significant challenging circumstances. To overcome these situations, reflective thinking is very essential. The maize farmers in the study area mentioned six problems in accessing modern agricultural information. The distribution of the maize farmers according to their problems is presented in Table 4.4.

Table 4.4 Distribution of the respondents according to the overall problem faced in accessing modern agricultural information

Problems	No. of Citation	Percentage	Ranking
Low literacy level for understanding modern agricultural information	39	43.3	1 st
Inadequate training facilities	18	20.0	2 nd
No invitation from concerned authority	17	18.9	3 rd
Limited knowledge about training opportunities	12	13.3	4 th
No time to participate in modern agricultural information orientation program due to busy schedule	10	11.1	5 th
Distance from training centre	8	8.9	6 th

Data presented in Table 4.4 indicate the first rank of the respondents faced problem in accessing agricultural information was "low literacy level for understanding modern

agricultural information” and the last one was “distance from training centre”. Therefore the data revealed that more than half of the respondents (51 maize farmers) don’t feel problem in receiving modern agricultural information.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study was undertaken to measure the extent perception of the maize farmers towards agricultural extension agents, to explore the relationship between selected characteristics of the maize farmers and their perception and to identify problems faced by the farmers faced in accessing modern agricultural information. The study was carried out in Sadar upazila of Dinajpur district. Ninety respondents were selected as sample from list of 904 farmers using random sampling method. Data were collected by a pre-tested interview schedule during 15 February to 24 March 2018. A summary of the major findings is given in the subsequent sections.

5.1.1 Perception of maize farmers towards agricultural extension agents

Farmers' perception towards agricultural extension agents was measured by computing a perception score which could range from 15 to 75. However, the observed scores ranged from 25 to 72 with a mean of 60.78 and the standard deviation was 7.42. The highest proportion (90.0 percent) of the respondents had favourable perception while 8.9 percent of them had neutral perception and 1.1 percent of them had unfavourable perception towards agricultural extension agents.

5.1.2 Selected characteristics of the farmers

The major findings of the study are summarized below:

Age: Age scores of the respondent farmers were found to range from 20 to. The mean was 44.40 with the standard deviation of 13.86. Highest proportions (37.8 Percent) of the respondents were found under middle aged category compared to 33.3 percent young and 28.9 percent were old aged category. Near about three-fourths (71.1 Percent) of the respondents were under young to middle aged category.

Educational qualification: The educational qualification scores of the respondents ranged from 0.0 to 16, the mean being 5.82 and standard deviation is 5.02. Findings indicate that the highest proportion (32.2 Percent) of the respondents had secondary education, 31.1 percent were can sign only, 18.9 percent had above secondary education level of education, 10.0 percent had primary education and only 7.8 percent of the respondents were illiterate.

Family size: The family size ranged from 2 to 12 with the mean of 5.31 and the standard deviation was 1.88. The majority (75.6 percent) of the respondents fell into medium family size category, while 13.3 and 11.1 percent had small and large family size respectively. However, 88.9 percent of the respondents had large to medium family size.

Annual family income: Annual family income score of the respondents ranged from Tk. 32.70-950.0 with the mean of Tk. 253.80 and the standard deviation is Tk. 189.17. Highest proportion (78.9 percent) of the respondents had medium annual income, while 12.2 percent had high income and 8.9 percent of the respondents had low income. As a result, the most of the respondents (91.1 percent) were medium to high income earners.

Farm size: The farm size of the farmers in the study area varied from 0.22-9.0 hectares. The mean farm size was 1.32 ha and the standard deviation was 1.34. The highest proportion (57.8 percent) of the respondents belonged to small farm size, while 34.4 percent belonged to medium farm size and 7.8 percent belonged to large farm size. Thus, most of the farmers (92.2 Percent) were in the categories of small to medium farm size.

Maize farming experience: Maize farming experience scores of the farmers in the study area varied from 3-25. The mean maize farming experience was 10.89 and the standard deviation was 3.33. Highest proportion (62.2 percent) of the respondents belonged to medium maize farming experience category, while 18.9 percent of the respondents belonged to low maize farming experience and 18.9 percent belonged to high maize farming experience category.

Training received: Training received scores of the respondents were found to be varying from 0 to 15 days with the mean of 1.00 and the standard deviation was 2.23. The highest proportion (67.8 percent) of the respondents belonged to no training received category, while 27.8 percent belonged to short training received and 3.3 percent belonged to medium training received and 1.1 percent to long training received category.

Agricultural Knowledge: The agricultural knowledge scores of the respondents ranged from observed 10 to 26 against the possible range of 0 to 30. The mean is 19.77 and standard deviation is 3.73. The highest proportion (51.1 percent) of the farmers had good knowledge while 46.7 percent had excellent knowledge followed by 2.2 percent had fair knowledge on agriculture.

Aspiration: The aspiration scores of the respondents ranged from 7 to 28 against the possible range 8 to 40 with a mean and standard deviation 16.23 and 3.30, respectively. The majority (84.4 percent) of the respondents had medium aspiration, 13.3 percent of the respondents had low aspiration and 2.2 percent of the respondents had high aspiration.

Extension media contact: The extension contact scores of the maize growers ranged from 1 to 31 against 0 to 42 with a mean of 10.38 and standard deviation of 5.16. Result indicate that more than four-fifths (84.4 percent) of the respondents had low extension contact while 14.4 percent had medium and only 1.2 percent had high extension contact.

5.1.3 Relationships between the selected characteristics of maize farmers and their extent of perception towards agricultural extension agents

Ten null hypotheses were tested to explore the relationship between the selected characteristic of the respondents and perception of maize farmers towards agricultural extension agents. Out of ten selected characteristics, five characteristics of the respondents such as family size, annual family income, training received, aspiration, extension media contact had significant positive relationships with their perception towards agricultural extension agents. The remaining selected characteristics, namely, age, educational qualification, farm size, maize farming experience, agricultural knowledge did not show any significant relationship with their perception towards agricultural extension agents.

5.1.4 Problems faced in accessing modern agricultural information

In this study, “low literacy level for understanding modern agricultural information” became first major problem faced by the maize farmers in accessing agricultural information and the last one was “distance from training centre”. Therefore it was revealed that more than half of the respondents (51 maize farmers) don’t feel problem in receiving modern agricultural information.

5.2 Conclusions

1. Overwhelming majority (90.0 percent) of the respondents had favourable perception towards agricultural extension agents. These findings may conclude that the agricultural extension agents have ample scope for increasing perception of the maize farmers towards their livelihood improvement.
2. Annual family income had positively significant relationship with perception of the maize farmers towards agricultural extension agents. The mean of annual family income from maize was 253.80 thousand taka which was higher than the average per capita income of Bangladesh. So, it may be concluded that maize cultivation have considerable effect on the annual family income of the maize farmers.
3. Most of (67.8 percent) of respondents had no training received though it had significant relationship with the perception of maize farmers towards agricultural extension agents. So, it may be concluded that training received might be very important factor to determine perception of maize farmers towards agricultural extension agents.
4. The extension media contact showed a positive relationship with their perception towards agricultural extension agents. It can be concluded that maize cultivation will sustainable among those farmers who maintain contact with information source.
5. The maize farmers faced six different problems in accessing agricultural information. Out of that problems, “low literacy level for understanding modern agricultural information” become first in the ranking. Therefore it may be concluded that the maize farmers faced considerable amount of problems in accessing agricultural information. .

5.3 Recommendations

5.3.1 Recommendations for policy implication

1. In the study area, overwhelming majority (90.0 percent) of the respondents had favourable perception towards agricultural extension agents. In order to increase maize cultivation, creating functional relationship, partnership, co-operation, and interdependence among the concerned GOs, NGOs, and other private sectors should be enhanced.
2. The highest proportion (67.8 percent) of the maize growers had no training received. Therefore, it may be recommended that DAE, NGOs and input supply companies can organize training programs for the maize growers.

3. Apparently, educational qualification and agricultural knowledge are the key points of the maize farmers' perception towards agricultural extension agents, though they have no significant relationships among them. So it is recommended that different organizations should provide non-formal education and knowledge increasing program in the study area.
4. Maize farmers are facing problems in accessing modern agricultural information. So the researcher recommended that concerned authorities like GOs, NGOs, and private sectors should give proper attention for the solutions of the problems.

5.3.2 Recommendations for further study

1. The present study was carried out in sadar upazil of Dinajpur district. Similar studies may be conducted in other parts of the country to get a clear picture of the whole country which will be helpful for effective policy formulation.
2. In the present study the relationship of ten selected characteristics of the maize farmers with their perception towards agricultural extension agents were investigated. Therefore, Further studies should be designed considering other characteristics of the farmers that might effect their perception.
3. In the present study study, age and education qualification, farm size, maize farming experience, agricultural knowledge of the respondents had no significant relationship with their perception towards agricultural extension agents. Hence, further studies are necessary to find out the relationship between the concerned variables to make the present findings valid.
4. Research should also be undertaken to identify other factors which cause hindrance in accessing modern agricultural information by the maize farmers.

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APPENDIX A

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An interview schedule for the study entitled

“Perception of the Maize Farmers towards Agricultural Extension Agents”

Date:

Serial no.

Name of the respondent..... Village.....

Union..... Mobile No.....

(Please answer the following questions and put tick (✓) mark when necessary)

1. Age: What is your present age?Years

2. Educational qualification: (Please mention your educational qualification)

- a) I can't read and write (.....)
- b) I can sign name only (.....)
- c) I have studied up to class (.....)

3. Family size: Please mention your total number of family members (including yourself)

Family member	Numbers
Male	
Female	
Total	

4. Annual family income: Please mention your annual family income from the followings:

Sl. No.	Source of income	Production (Local unit)	Market price (Tk./local unit)	Total (Tk.)
1.	Maize			
2.	Paddy			
3.	Wheat			
4.	Potato			
5.	Vegetables			
6.	Fruits			
7.	Poultry			
8.	Fish culture			
9.	Domestic Animals			
10.	Service			
11.	Business			
12.	Day labor			
13.	Rickshaw/Auto-Rickshaw driving			
14.	Others(if any)			
Total (TK.)=				

5. Farm size: Please indicate the area of land in your possession.

Sl. No.	Nature of use	Area	
		Local Unit	Standard Unit (ha.)
A	Homestead		
B	Own land under own cultivation		
C	Land taken from others on lease		
D	Land taken to others on <i>borga</i>		
E	Land given from others on <i>borga</i>		
F	Pond area		
G	Others		
Total			

6. Maize Farming Experience: How many years to cultivate maize..... years?

7. Training received: Did you receive any training from this or any other organization?

Yes ☐

No ☐

If yes, please give the following information

Sl. No.	Subject of the training	Duration	Sponsoring agency
1.			
2.			
3.			
4.			

8. Agricultural knowledge: Please reply the following questions.

Sl. No.	Questions	Assigned scores	Obtained score
1.	Name two beneficial insects.	2	
2.	Name two diseases of maize.	2	
3.	Mention two agricultural development related TV program.	2	
4.	After how many days of germination, one have to top-dress fertilizer on maize?	1	
5.	Mention the ways and means of increasing soil fertility.	2	
6.	How cropping diversity does secure balance use of family labour throughout the year?	2	
7.	Mention the reasons for using higher dose of MP in Modern Variety (MV) of Maize.	3	
8.	Mention the means of controlling pest without insecticide.	2	
9.	What is the necessity of fertilizer application in the pond?	2	
10.	What will happen if urea fertilizer applies during booting stage of rice?	2	
11.	Mention the water color of cultivable pond.	2	
12.	Which types of sapling are considered for tree plantation?	2	
13.	What is the important concern (time) if wheat is grown after harvesting of T. Aman?	2	
14.	Mention the methods of controlling rice hispa and stem borer without applying pesticide.	2	
15.	How can you prevent of foot and mouth disease (FMD) of cattle?	2	
Total=		30	

9. Aspiration: Please indicate the degree of your agreement with the following statement.

Sl. No.	Statements	Extent of agreement/disagreement				
		SA	A	U	D	SD
1. (+)	If one works carefully, success will surely knock at his door					
2. (-)	I do not prefer to adopt new technology					
3.(+)	Special training on Maize will be helpful for me for better production					
4. (-)	By doing agricultural activities I do not want to improve my social status					
5. (+)	I want that everybody should accept my suggestion					
6. (-)	Establishment in life is not possible by Maize cropping technology					
7. (+)	By practicing maize cropping I can improve my status					
8. (-)	Production will be low even with a balanced fertilization					

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree and SD= Strongly Disagree

10. Extension media contact: Please indicate the extent of your contact with following extension media.

Sl. No.	Extension media	Not at all	Extent of contact		
			Rarely	Occasionally	Frequently
A.	Individual Contact				
1.	Neighbour (times/week)		1-2	3-4	≥ 5
2.	Local leader (times/week)		1	2	≥ 3
3.	Agricultural input dealer (times/season)		1-3	4-5	≥ 6
4.	Sub-Assistant Agricultural Officer (times/season)		1-2	3-4	≥ 5
5.	Agricultural Extension Officer (times/year)		1-2	3-4	≥ 5
6.	Upazila Agricultural Officer (times/year)		1	2-3	≥ 4
7.	Veterinary Surgeon (times/year)		Do	Do	Do
8.	Upazila Livestock Officer (times/year)		Do	Do	Do
9.	Upazila Fisheries Officer (times/year)		Do	Do	Do
B.	Group contact				
1.	Participate in field day (times/year)		0.5	1	≥ 2
2.	Participate in result demonstration meeting (times/year)		Do	Do	Do
C.	Mass Contact				
1.	Visit to agricultural fair (times/year)		0.33	0.50	≥ 1
2.	Watching agricultural TV program (times/month)		1	2-4	≥ 5
3.	Reading agricultural booklets or magazines (No./year)		1	2-3	≥ 4

11. Farmers' perception towards extension agents (EAs): Please mention your perception regarding Extension Agents (EAs) according to the following statements

Sl. No.	Statements	Extent of Perception				
		SA	A	U	D	SD
1.	Provides advice on land preparation					
2.	Give advice about new variety of maize					
3.	Inform proper time for planting					
4.	Inform about seed treatment seed treatment					
5.	Suggest about insect control methods					
6.	Advice on disease control methods					
7.	Inform about irrigation practices					
8.	Recommend about fertilizer application					
9.	Suggest about harvesting practices					
10.	Disseminate information through result demonstration meeting					
11.	Give knowledge to the farmers on maize production					
12.	Helps in changing attitude of maize growers					
13.	Assist to increases farm-income of maize farmers					
14.	Inform the farmers about marketing					
15.	Provide information regarding storage					

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree, and SD= Strongly Disagree

12. Problem: What are the main problems you face in accessing agricultural information?

- i. -----
- ii. -----
- iii. -----
- iv. -----
- v. -----

Thank you for your kind information and cooperation.

Signature of the Interviewer

Date:

Appendix B

Correlation Matrix between Selected Characteristics and Perception of the Maize Farmers

Selected Characteristics of the maize farmers	Age	Education	Family size	Annual family income	Farm size	Maize farming experience	Training received	Agricultural knowledge	Extension media contact	Extension media contact	Perception of the Maize Farmers
Age	1										
Education	-0.359**	1									
Family size	-0.113	0.196	1								
Annual family income	-0.081	0.280**	0.380**	1							
Farm size	-0.036	0.309**	0.260*	0.407**	1						
Maize farming experience	0.230*	-0.248*	-0.025	0.024	-0.010	1					
Training received	0.179	0.128	0.062	0.256*	0.131	-0.115	1				
Agricultural knowledge	-0.098	0.337**	0.166	0.151	0.237*	-0.005	0.111	1			
Aspiration	0.047	-0.125	0.090	0.201	-0.035	0.046	0.450**	0.005	1		
Extension media contact	-0.143	0.131	0.166	0.366**	0.058	0.142	0.128	0.288**	0.219*	1	
Perception of the Maize Farmers	-0.062	0.191	0.225*	0.311**	0.202	0.007	0.220*	0.133	0.265*	0.250*	1

** Correlation is significant at the 0.01 level;

* Correlation is significant at the 0.05 level