

**ATTITUDE OF FARMERS TOWARDS AGRICULTURAL ACTIVITIES
OF MOHILA BOHUMUKHI SHIKKHA KENDRA**

A Thesis

By

Bidhan Chandro Adhikari

Student No. 1705227

Session: 2017-18

Semester: July-December/2018

**MASTER OF SCIENCE
IN
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**Department of Agricultural Extension
Hajee Mohammad Danesh Science and Technology University
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The Author

ATTITUDE OF FARMERS TOWARDS AGRICULTURAL ACTIVITIES OF MOHILA BOHUMUKHI SHIKKHA KENDRA

ABSTRACT

The main purpose of the study was to determine attitude of farmers towards agricultural activities of Mohila Bohumukhi Shikkha Kendra (MBSK). The study was carried out in Uthrail union of Sadar upazilla under Dinajpur District. Ninety two (92) farmers were selected as sample from 368 farmers involved with MBSK. Data were collected by a pre-tested interview schedule during 20 September to 15 October, 2018. Simple and direct questions with different scales were used to obtain information. Co-efficient of correlation (r) was computed in order to explore the relationships between the nine selected characteristics of the farmers and their attitude towards agricultural activities of MBSK. More than fifty percent (54.3 percent) of the farmers had moderately favorable attitude towards agricultural activities of MBSK while 44.6 percent had highly favorable attitude and only 1.1 percent had slightly favorable attitude towards agricultural activities of MBSK. Correlation analyses indicated that among nine selected characteristics education, annual income, and organizational participation, agricultural training received and innovativeness of the farmers had positive significant relationships with their attitude towards agricultural activities of MBSK. However, age, family size, farm size, and cosmopolitaness of the farmers had no significant relationships with their attitude towards agricultural activities of MBSK. The most common problem faced by the farmers was “Disease and insect infestation” (92.39 percent) and ranked first as per opined by the farmers. ‘High input cost’ (70.65 percent) was the last ranked (5th) problem as cited by the farmers.

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CHAPTER 1

INTRODUCTION

1.1 General Background

Bangladesh is predominantly an agricultural country. In agrarian countries like Bangladesh, agriculture can serve as a powerful driving force to not only raise family income, but also the nation's entire economy. Obviously the economic development of the country depends to a great extent on the prior development of agricultural sector. It contributes about 13.41 percent of the Gross Domestic Product (BBS, 2017).

Rural economies of Bangladesh, and specifically agriculture, have been powerful drivers of poverty reduction in Bangladesh since 2000. Indeed, agriculture accounted for 90 percent of the reduction in poverty between 2005 and 2010. More than 70 percent of Bangladesh's population and 77.0 percent of its workforce lives in rural areas. Nearly half of all of Bangladesh's workers and two-thirds in rural areas are directly employed by agriculture, and about 87 percent of rural households rely on agriculture for at least part of their income. Bangladesh has made commendable progress over the past 40 years in achieving food security, despite frequent natural disasters and population growth (food grain production, for example, tripled between 1972 and 2014, from 9.8 to 34.4 million tons). With one of the fastest rates of productivity growth in the world since 1995 (averaging 2.7 percent per year, second only to China), Bangladesh's agricultural sector has benefited from a sound and consistent policy framework backed up by substantial public investments in technology, rural infrastructure and human capital (Anonymous, 2016).

During mid-seventies, along with GOs, NGOs in Bangladesh started massive activities oriented with relief and charity aims, devoted to male and female development programmes with various sectional activities such as agriculture, fisheries, livestock, health and family planning credit and input delivery, cooperative etc (Wahab, 2006). Mohila Bohumukhi Shikkh Kendra (MBSK), Balubari, Dinajpur is a local NGO, has been working with own initiative from the year 1993 on Savings and Credit activities properly aiming to uplift the economic development of poor people. MBSK is working with the support of Palli Karma Sohayok Foundation (PKSF) from the year 1995 subsequently it has been restarted from October'2007. At present MBSK have been operating different component of Credit program such as Jagoron (Rural Micro credit), Agrosor (Micro enterprise development), Sufolon (Seasonal loan) program and Buniad (Ultra poor) program with the involvement of poor

people. It is mentioned here PKSf supported agriculture based seasonal loan which is contributed to agriculture sector.

MBSK is working with agriculture and livestock unit from September 2013 with the support of Palli Karma Sahayak Foundation (PKSF) to promote agricultural modern technology among the farmers level. The agricultural technologies for which MBSK are working for their extension are: i) USG Block Demonstration, ii) Porous Pipe Technology, iii) Sex pheromon Trap, iv) Compost Manure and v) Demo on High yield variety.

Modern agricultural technologies are very much important for improving the production and socio-economic condition of the MBSK beneficiaries. It is quite pertinent and necessary to know the extent of attitude towards modern agricultural technologies given by MBSK. Though there is no research work has been done on this aspect. Therefore the researcher felt necessity to conduct a research entitled, 'Attitude of Farmers towards Agricultural Activities of Mohila Bohumukhi Shikkha Kendra'.

1.2 Statement of the Problem

Modern agriculture and environment are closely related with the use of modern agricultural technologies, like chemical fertilizer, pesticide and irrigation water. Although these modern technologies are used for increasing production, but these technologies create dangerous effect on environment. It is clear that non-judicious use of modern technologies damage natural resources like land, fisheries, beneficial insects, soil microbes etc. which are part and parcel of environment. If all the modern high techs in agriculture that are available in Bangladesh are adopted judiciously, it is expected that in spite of 1.36 percent population growth and one per cent reduction of cultivable land every year, farmers, agricultural scientists and extension personnel will be able to feed the growing population.

Based on the above discussion, one may find that the farmers may lack proper technological knowledge and may not apply full package of technology in the field and may hold poor conception about the technology than that of researcher. Considering the above facts the following research questions were put forward:

1. To what extent of attitude of the farmers towards agricultural activities of MBSK?
2. Is there any relationship between farmers' selected characteristics and their attitude towards agricultural activities of MBSK?
3. What are the problems do they faced in practicing agricultural technologies?

1.3 Specific Objectives

In order to make the study manageable and operational the following specific objectives were drawn:

1. To determine the extent of attitude of the farmers towards agricultural activities of MBSK.
2. To explore the relationships between the selected characteristics of the farmers and their attitude towards agricultural activities of MBSK. The selected characteristics of the farmers include: age, education, family size, annual income, organizational participation, agricultural training received, cosmopolitans and innovativeness.
3. To determine the problems faced by the farmers in practicing agricultural technologies and suggested solutions to overcome the problems.

1.4 Justification of the Study

The major focus of the study is to determine the attitude of the farmers towards agricultural activities of MBSK. Now a days, government also non-government organizations are currently putting effort and allocating resources for production oriented research and also encouraging the rural people to adopt new agricultural technology. So, attitude determination of the concerned farmers is necessary. Considering the above discussion, the researcher became interested to undertake a study to determine attitude of the farmers towards agricultural activities of MBSK. Enhancing resources of increasing capacities of poor people household towards elimination of farmer's poverty through integrated development of activities. It helps in the livelihood development of target people in the concerned area. The findings of the study will in particular be applicable to the Dinajpur district. However, the findings may also be applicable to other areas of Bangladesh where physical, socio-economic, cultural and geographic conditions do not differ much from those of the study area. Thus, the findings are expected to be useful to students, researchers and extension workers and particularly for planners in formulating and designing plans and procedure for maintaining modern agricultural technologies.

1.5 Assumptions of the Study

An assumption is the supposition that an apparent fact or principle is true in light of the variable evidence. An assumption is taken as a factor believes to be true without proof. The research was carried out keeping the following assumptions in mind:

1. The data collected by the researcher were free from bias.
2. The sample size was representative of the whole population of the study area.

3. The respondents included in the sample for this study were capable enough to furnish proper responses to the question set up in the interview schedule.
4. The responses furnished by the respondents were reliable. The researcher who acted as a interviewer as well as adjusted to the social environment of the study area. So the respondents gave their opinions without any hesitation.
5. The finding of the study has general applications to other parts of the country with similar socio-economic and cultural conditions of the study area.

1.6 Limitations of the Study

Considering time, money and other necessary resources available to the researcher and to make the study manageable and meaningful it became necessary to impose certain limitations. The limitation was as follows:

1. The study was confined only in farmers of MBSK beneficiaries.
2. There are many characteristics of the farmers in the study area but only nine of them were selected for investigation.
3. Data collected from the farmers were furnished by them from their memory during interview.
4. The study was confined in one union named Uthrail under sadar upazila of Dinajpur district.
5. The attitude of the farmers was measured on the basis of their responses to the selected statement.

1.7 Definition of Important Terms

For clarity of understanding, certain terms frequently used throughout the study are defined and interpreted as follows:

Attitude: Attitude means one feelings, beliefs and actions towards an object and concept.

Attitude as a state of mental and emotional readiness to react to situations, person or things, in a harmony with a habitual pattern of response previously conditioned to or associated with these stimuli.

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

Education: Education referred to the development of desirable knowledge, skill, and attitude in an individual through reading, writing, working, observing and other related activities. It means the formal education of a farmer. It was measured by the number of years spent in formal educational institution.

Family size: It referred to the numbers including the respondent himself/herself, his wife/husband, children and other permanent dependent who live and eat together as family unit.

Farm size: The term referred to the hectare of land owned by a farmer on which he carried out his/her farming business. The area being estimated in terms of full benefits to the farmer's family.

Organizational participation: Organizational participation of an individual referred to his direct contact with various organizations within a specific period of time. An individual could take part in various activities of an organization as ordinary member, executive member. All forms of participation were considered to operationally the variable.

Agricultural training received: It referred to the total number of days that a respondent received training in her entire life from different organization under different activities.

NGO: A non-government organization (NGO) referred to any non profit, voluntary, citizen's group which is organized on a local, national, or international level. NGOs perform a variety of service and humanitarian functions, bring, citizen concerns to governments, advocate and monitor politics and encourage political participation through provision of information.

Respondent: A person who provided data for analysis by responding to interview schedule.

MBSK: Mohila Bohumukhi Shikkha Kendra (MBSK) is Community Development and non-political, non-government organization committed to the empowerment of the deprived, disadvantaged and oppressed segments of the society especially poor, women and children who due to poverty, ignorance, household violence, violation of rights and vulnerability find themselves deprived and exploited in various ways. MBSK was originated by a group of dedicated volunteers of the locality who were motivated by the spirit of traditional social work. The organization was founded in 2nd February, 1972 and started activity by formation of a Samity and through the years in 1991, MBSK gradually took the shape of organization.

CHAPTER 2

REVIEW OF LITERATURE

The researcher has tried his best to collect needful information through searching relevant studies, journals, periodicals, bulletins, internet etc. These enhanced the researcher's knowledge for better and clear understanding of the present study. However, the literatures have been organized into following four sections to set the context of the study:

First section : Concept of Attitude

Second section : Reviews of Literature Relevant to the Attitude on Different Issues

Third section : Review of Literature Related to Selected Characteristics of the Farmers with their Attitude

Fourth section : The Conceptual Framework of the Study

2.1 Concept of Attitude

Attitude is a predisposition or a tendency to respond positively or negatively towards a certain idea, object, person, or situation. Attitude influences an individual's choice of action, and responses to challenges, incentives, and rewards (Business Dictionary, 2012).

The classic, tripartite view is that an attitude contains cognitive, affective, and behavioral components. Empirical research, however, fails to support clear distinctions between thoughts, emotions, and behavioral intentions associated with a particular attitude (Rosenberg and Hovland, 2012).

A criticism of the tripartite view of attitudes is that it requires cognitive, affective, and behavioral associations of an attitude to be consistent, but this may be implausible. Thus some views of attitude structure see the cognitive and behavioral components as derivative of affect or affect and behavior as derivative of underlying beliefs (Whitley, 2010).

The readiness to respond to a certain object in a favorable or unfavorable fashion; every attitude has both an intrinsic belief and a behavioral disposition. Attitudes are a permanent system of evaluations, emotions, and direct behavioral tendencies for or against an object. Individuals develop their attitudes through a continuous process of adaptation to the social environment. Attitudes are organized ways of thinking and acting in relation to facts and people in our environment, and they help influence our overall way of life (Encyclopedia of Britannica, 1960).

Attitudes can also be explicit and implicit. Explicit attitudes are those that we are consciously aware of and that clearly influence our behaviors and beliefs. Implicit attitudes are unconscious, but still have an effect on our beliefs and behaviors (Cherry, 2012).

Attitude is the learned orientations towards object, or predisposition to behave in certain ways towards a given objects or a class of objects. An attitude has always on object, person, thing or concept and it may be general or specific (McGrath, 1966).

Attitude, in social psychology, is a predisposition to classify objects and events and to react to them with some degree of evaluative consistency. The concept of attitude arises from attempt to account for observed regularities in the behavior of individual persons. The quality of one's attitude is judged from the observable, evaluative responses he tends to make (Encyclopedia of Britannica, 1960).

An attitude as the degree of positive or negative affect associated with some psychological object like symbol, phrase, slogan, person, institution, ideal or ideas towards which people can differ in varying degrees (Thurstone, 1946).

Attitude as a state of mental and emotional readiness to react to situations, person or things, in harmony with a habitual pattern of response previously conditioned to or associated with these stimuli. Attitude is the by-product of an individual's experience and has their bases in inner uses, acquired habits and environmental influences by which he is surrounded (Goode, 1945).

2.1.1 Components of attitude

Triandis (1971) explained that, "An attitude is an idea charged with emotion, which predisposes a class or actions to a particular class or social situation." This definition suggests that attitude has three components, those components are cognition, affective and behavioral, are:

- a) The cognitive component of attitude consists of the belief of the individual about the object. This may also be said as understanding, knowledge and conception.
- b) The feeling or affective component of an attitude refers to the emotions connected with the object. The object is felt to be pleasing or displeasing; it is liked or it is disliked.
- c) The action or behavioral component of an attitude includes all die behavioral readiness associated with the attitude.

Krech *et al.* (1962) explains attitude as a system of the interrelated components that the authors express as “In defining attitude as systems, we are emphasizing the interrelatedness of the three attitude components. When incorporated in a system, these components become manually interdependent about an object are influenced by his feelings and action tendencies toward that object. And a change in his cognition about the object will tend to produce changes in his feelings and action tendencies toward it.”

2.1.2 Formation of attitude

Attitudes form directly as a result of experience. They may emerge due to direct personal experience, or they may result from observation. Social roles and social norms can have a strong influence on attitudes. Social roles relate to how people are expected to behave in a particular role or context. Social norms involve society's rules for what behaviors are considered appropriate.

Attitudes can be learned in a variety of ways. Consider how advertisers use classical conditioning to influence your attitude toward a particular product. In a television commercial, one sees young, beautiful people having fun in on a tropical beach while enjoying a sport drink. This attractive and appealing imagery causes you to develop a positive association with this particular beverage. Operant conditioning can also be used to influence how attitudes develop. Imagine a young man who has just started smoking.

Whenever he lights up a cigarette, people complain, chastise him and ask him to leave their vicinity. This negative feedback from those around him eventually causes him to develop an unfavorable opinion of smoking and he decides to give up the habit. Finally, people also learn attitudes by observing the people around them. When someone you admire greatly espouses a particular attitude, you are more likely to develop the same beliefs. For example, children spend a great deal of time observing the attitudes of their parents and usually begin to demonstrate similar outlooks (Cherry, 2012).

2.1.3 Changes of attitude

While attitudes can have a powerful effect on behavior, they are not set in stone. The same influences that lead to attitude formation can also create attitude change. The theories of attitude that can influence people's attitude are:

Learning theory of attitude change: Classical conditioning, operant conditioning and observational learning can be used to bring about attitude change. Classical conditioning can be used to create positive emotional reactions to an object, person or event by associating

positive feelings with the target object. Operant conditioning can be used to strengthen desirable attitudes and weaken undesirable ones. People can also change their attitudes after observing the behavior of others.

Elaboration likelihood theory of attitude change: This theory of persuasion suggests that people can alter their attitudes in two ways. First, they can be motivated to listen and think about the message, thus leading to an attitude shift, or they might be influenced by characteristics of the speaker, leading to a temporary or surface shift in attitude. Messages that are thought-provoking and that appeal to logic are more likely to lead to permanent changes in attitudes.

Dissonance theory of attitude change: As mentioned earlier, people can also change their attitudes when they have conflicting beliefs about a topic. In order to reduce the tension created by these incompatible beliefs, people often shift their attitudes (Cherry, 2012).

2.2 Reviews of Literature Relevant to the Attitude of Different Aspects

Rahman (2015) found that about 77.78 percent of the respondents had high favorable attitude towards the rice cultivation and 22.22 percent of the respondents had low favorable attitude towards the rice cultivation.

Chawdhury (2015) observed that the major portion (56.7 percent) of the respondents had moderately favorable attitude compared to 28.9 percent having slightly favorable attitude and only 14.4 percent had highly favorable attitude towards pariza rice cultivation.

Hossain (2015) found that the highest proportion (70.9 percent) of the farmers had favorable, 17.3 percent had not favorable and 11.8 percent had highly favorable attitude towards aquaculture.

Rabby (2014) revealed that half (50.0 percent) of the respondents had favorable attitude towards jute cultivation compared to 48.2 percent respondents had negative attitude while only 1.8 percent had neutral attitude towards jute cultivation.

Rashid (2014) found that highest proportion (58.7 percent) of farmers had moderately favorable attitude, while 22.1 percent and 19.2 percent had highly favorable attitude and slightly favorable attitude towards the use of *dolochun* for crop production.

Husna (2014) revealed that two-thirds (66.2 percent) of the respondents had less favorable attitude followed by 21.3 percent had medium favorable and only 12.5 percent had high favorable attitude towards pesticide risk reduction.

Ahmed (2013) reported that maximum (60.0 percent) of the farmers had highly favorable attitude towards *Thai koi* farming.

Khan (2012) found that the majority (64.0 percent) of the farmers had moderately favorable attitude, compared to 29 percent having favorable and only one percent had unfavorable attitude towards modern jujube cultivation.

Shahin (2012) revealed that, highest proportion (38.0 percent) of farmers had 'moderately favorable' while 32 percent and 30 percent had 'highly favorable' and 'slightly favorable' attitude towards the use of Cattle Health Card (CHC) under SDVC project of CARE respectively

Samad (2010) found that the majority (69.84 percent) of the farmers had favorable attitude, while one percent had unfavorable attitude and 29.16 percent had neutral attitude for the project farmers. The attitude score of non-project farmers showed that the majority (58.33. percent) possessed neutral attitude, 2.08 percent had favorable attitude and 39.59 percent had favorable attitude towards aerobic rice cultivation.

Ahmed (2006) found that majority (87.0 percent) of the shrimp farmers had favorable attitude towards shrimp farming compared to 7 percent having neutral and only 6 percent had unfavorable attitude.

Uddin *et al.*, (2006) observed equal proportion of farmers (39.0 percent) having moderately favorable and highly favorable attitude towards sustainable agriculture. On the other hand, 4 percent and, 18 percent farmers had highly unfavorable and moderately unfavorable attitude towards sustainable agriculture respectively.

2.3 Review of Literature Related to Selected Characteristics of the Farmers with their Attitude

2.3.1 Age and attitude

Rahman (2015) found that Age of the farmers had significant positive relationship with their attitude on BRRI dhan 47 cultivation.

Hossain (2015) found in his study that age of the fish farmers had positive significant relationship with their attitude towards practicing aquaculture.

Husna (2014) revealed that age of the mango growers had negative relationship with their attitude towards pesticide risk reduction.

Rashid (2014) found that age of the farmers showed negative significant relationship with their attitude towards *dolochun* using in land.

Ahmed (2013) observed that age of the respondents had positively significant relationship with their attitude towards *Thai koi* farming.

Khan (2012) revealed that age of the jujube farmers had no significant relationship with their attitude towards modern jujube cultivation.

Shahin (2012) observed that age of the respondents had no significant relationship with their attitude towards SDVC project of CARE.

Parvez (2007) concluded that there was no significant relationship between age of the farmers and their attitude towards IPM for HYVs production.

Rahman *et al.*, (2007) found that there was negatively significant relationship between age of the farmers and their attitude towards organic farming.

Chowdhury *et al.*, (2006) reported in his study that age of the farmers had no significant relationship with their attitude towards sustainable agriculture.

2.3.2 Education and attitude

Rahman (2015) found that level of education farmers had significant positive relationship with their attitude on BRRI dhan 47 cultivation.

Chawdhury (2015) found that education had no significant relationships with the farmers' attitude towards pariza rice cultivation.

Hossain (2015) reported in his study that education of the fish farmers had positive significant relationships with their attitude towards practicing aquaculture.

Husna (2014) reported that educational level of the mango growers had significant relationship with their attitude towards pesticide risk reduction.

Rashid (2014) found that educational level of the farmers showed significant relationship with their attitude towards using *dolochun* in land.

Ahmed (2013) observed that educational level of the respondents had positively significant relationship with their attitude towards *thai koi* farming.

Khan (2012) found that educational level of the jujube farmers had no significant relationship with their attitude towards modern jujube cultivation.

Shahin (2012) observed that educational level of the respondents had no significant relationship with their attitude towards SDVC project of CARE.

2.3.3 Family size and attitude

Rahman (2015) found that family size of the farmers had no significant relationship with their attitude towards BRRI dhan 47 cultivation.

Hossain (2015) found in his study that family size of the fish farmers had no significant relationships with their attitude towards practicing aquaculture.

Rashid (2014) observed that family size of the farmers showed negative significant relationship with their attitude towards using *dolochun* in land.

Shahin (2012) found that there was no significant relationship between family size of the farmers and their attitude towards SDVC project of CARE.

Parvez (2007) concluded in his study that there was no significant relationship between family size of the farmers and their attitude towards IPM for HYVs production.

Rahman *et al.* (2007) observed that there was no relationship between family size of the farmers and their attitude towards organic farming.

Chowdhury *et al.* (2006) reported in his study that family size of the farmers had no significant relationship with their attitude towards sustainable agriculture.

2.3.4 Farm size and attitude

Rahman (2015) found that farm size of the farmers had no significant relationship with their attitude towards BRRI dhan 47 cultivation.

Chawdhury (2015) found that farm size had no significant relationships with the farmers' attitude towards pariza rice cultivation.

Hossain (2015) concluded in his study that farm size of the fish farmers had positive significant relationships with their attitude towards practicing aquaculture.

Rabby (2014) observed in his study that farmers' farm size had positive significant relationship with their attitude towards jute cultivation.

Rashid (2014) concluded that farm size of the farmers showed non-significant relationship with their attitude towards using *dolochun* in land.

Husna (2014) found that farm size of the mango growers had non-significant relationship with their attitude towards pesticide risk reduction.

Ahmed (2013) observed that farm size of the respondents had no significant relationship with their attitude towards thai koi farming.

Khan (2012) reported that farm size of the jujube farmers had significant positive relationship with their attitude towards modern jujube cultivation.

Shahin (2012) observed that farm size of the respondents had no significant relationship with their attitude towards SDVC project of CARE.

2.3.5 Annual income and attitude

Chawdhury (2015) found that annual income had no significant relationship with the farmers' attitude towards pariza rice cultivation.

Hossain (2015) concluded in his study that annual income of the fish farmers had positive significant relationships with their attitude towards practicing aquaculture.

Rabby (2014) found in his study that farmers' annual household income had positive significant relationship with their attitude towards jute cultivation.

Rashid (2014) concluded that annual family income of the farmers showed non-significant relationship with their attitude towards using *dolochun* in land.

Husna (2014) observed that annual income of the mango growers had non-significant relationship with their attitude towards pesticide risk reduction.

Ahmed (2013) observed that annual family income of the respondents had no significant relationship with their attitude towards thai koi farming.

Shahin (2012) found that annual family income of the respondents had significant relationship with their attitude towards SDVC project of CARE.

Parvez (2007) concluded in his study that there was no significant relationship between annual income of the farmers and their attitude towards IPM for HYVs production.

Rahman *et al.* (2007) found that there was no significant relationship between annual family income of the farmers and their attitude towards organic farming.

Chowdhury *et al.* (2006) reported in his study that annual family income of the farmers had no significant relationship with their attitude towards sustainable agriculture.

2.3.6 Organizational participation and attitude

Habib (2002) observed in his study that organizational participation of the BSs had no significant relationship with their attitude towards agrochemicals.

Noor (1995) observed in his study that there was positive and significant relationship between the farmers and their attitude towards the cultivation HYV of potato.

2.3.7 Agricultural Training received and attitude

Rahman (2015) found that training exposure of the farmers had no significant relationship with their attitude towards BRRI dhan 47 cultivation.

Chawdhury (2015) found that training received had positive significant relationships with the farmers' attitude towards pariza rice cultivation.

Hossain (2015) reported in his study that training received of the fish farmers had positive significant relationships with their attitude towards practicing aquaculture.

Rabby (2014) found in his study that farmers' training received had positive significant relationship with their attitude towards jute cultivation.

Rashid (2014) revealed that training had positive significant relationship with their attitude towards using *dolochun* in land.

Ahmed (2013) observed that training exposure of the respondent had positive significant relationship with their attitude towards *Thai koi* farming

Bhuiyan (2008) found in his study that farmers' training experience had positive significant relationship with their attitude towards farmers' information need assessment.

Islam (2007) observed a significant positive relationship between training received by the farmers' and their attitude towards modern jute cultivation.

2.3.8 Cosmopolitaness and attitude

Chawdhury (2015) found that cosmopolitaness had positive significant relationships with the farmers' attitude towards pariza rice cultivation.

Samad (2010) revealed that cosmopolitaness had positive significant relationships with the farmers' attitude towards aerobic rice cultivation.

2.3.9 Innovativeness and attitude

Uddin *et al.* (2006) observed that innovativeness of the respondents had positive and significant relationship with their attitude sustainable agriculture.

Khan (2005) reported that innovativeness of the respondents had positive and significant relationship with their attitude towards ground nut cultivation.

Rahman (2001) conducted that innovativeness of the respondents had positive and significant relationship with their attitude towards Binadhan-6.

2.4 Conceptual Framework of the Study

Conceptual frameworks are a type of intermediate theory that attempt to connect to all aspects of inquiry (e.g. problem definition, purpose, literature review, methodology, data collection and analysis). Conceptual frameworks can act like maps that give coherence to empirical inquiry. Because conceptual frameworks are potentially so close to empirical inquiry, they take different forms depending upon the research question or problem (Wikipedia, 2014).

In order to develop the conceptual framework for the selected characteristics and focus issue of this study, attitude is conceptualized having three components as; i) cognitive domain come from head ii) affective domain come from heart and iii) behavior components come from different visible parts of the body such as hand, skin, ear, eye, etc. From the past studies and literature, it is observed that various factors influenced and affected farmers in acquiring their attitude towards innovation. In this study, the researcher mainly attempted to highlight two concepts, namely farmers' selected characteristics (age, education, family size, farm size, annual income, agricultural training received, cosmopolitaness, and innovativeness) and attitude towards agricultural program of MBSK. Problem faced by the farmers in practicing agricultural technologies were also identified. On the basis of above discussion and review of literature, the conceptual framework of this study has been structured as shown in figure 2.1.

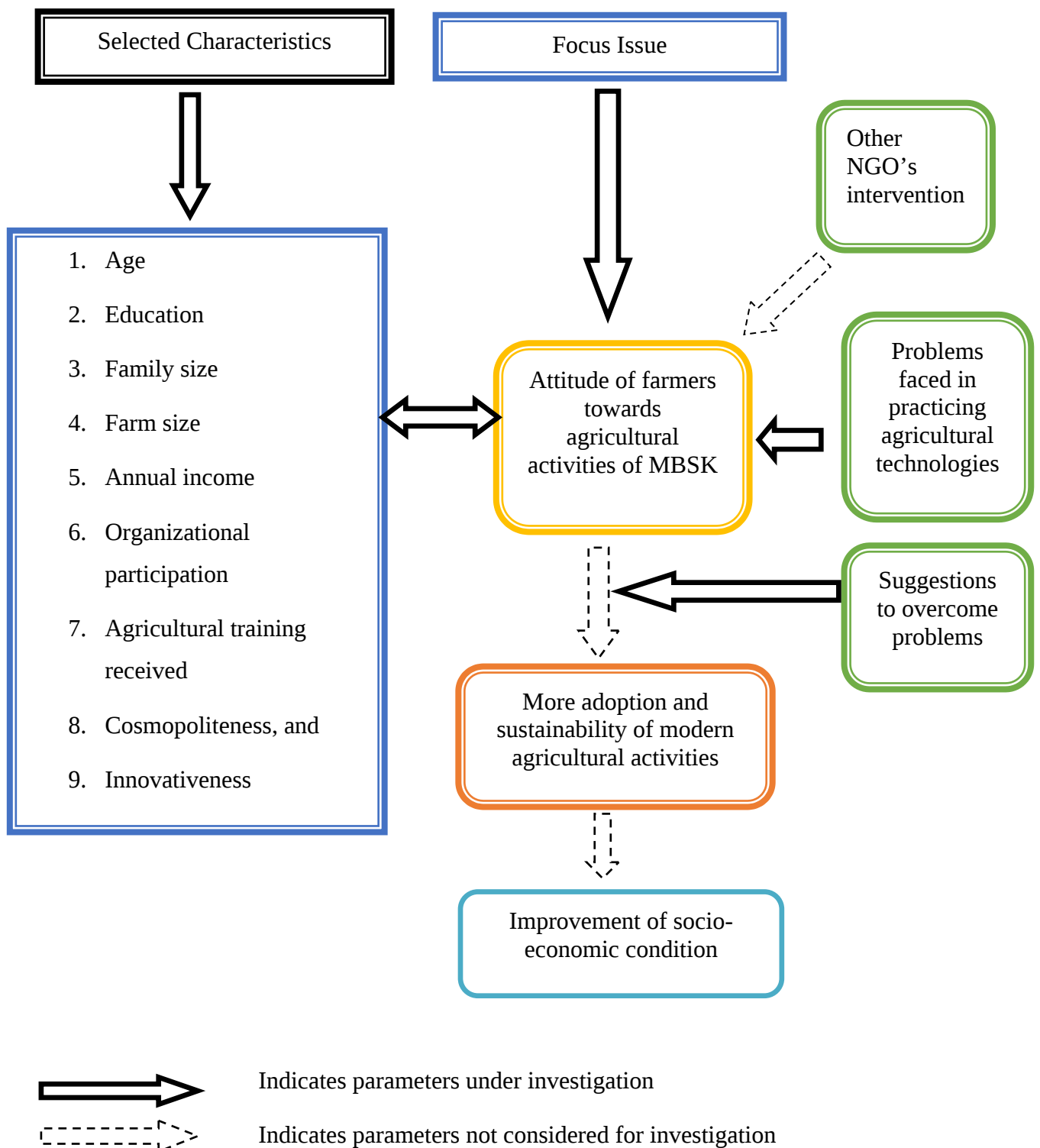


Figure 2.1 Conceptual framework of the study

CHAPTER 3

METHODOLOGY

Methods and procedures used in conducting research need very careful consideration. Methodology enables the researcher to collect valid information and to analyze the same properly to arrive at correct decisions. The methods and procedures followed in conducting this research are being described below:

3.1 The Locale of the Study

The present study was conducted in Uthrail union of Sadar upazila under Dinajpur district. There are 13 upazilas in Dinajpur district. Among these, Sadar upazila is selected purposively because it is one of the agriculturally important upazilla where rice, wheat, maize, vegetables are intensively cultivated. Mahila Bohumukhi Shikkha Kendra (MBSK) was implementing their different agricultural activities in this union. Four villages of Uthrail union were also purposively selected where MBSK is implementing various project oriented to agricultural technologies. Most of the farmers of this area are directly and/or indirectly engaged in agricultural activities. A map of Dinajpur district including its upazilas and Sadar upazila showing the study area is given in Figure 3.1 and Figure 3.2, respectively.

3.2 Population and Sample

The farmers who are getting support from Mahila Bohumukhi Shikkha Kendra (MBSK) were considered as the population of this study. Uthrail union of Dinajpur Sadar upazilla under Dinajpur district was purposively selected. An up-to-date list of 368 farmers from four villages was collected from MBSK office record. Out of them a sample of 92 farmers (25.0 percent) was selected by simple random sampling method. Simultaneously a reserve list of 9 farmers was made in order to use in case of unavailability of sampled farmers. The detailed distribution of population and sample are shown in Table 3.1.

Table 3.1 Village wise distribution of the population and sample

Name of the village	Population	Sample	Reserve list
Dakshin gosaipur	108	27	3
Dangapara	87	22	2
Muradpur bazar	89	22	2
Dakhin faridpur	84	21	2
Total=	368	92	9

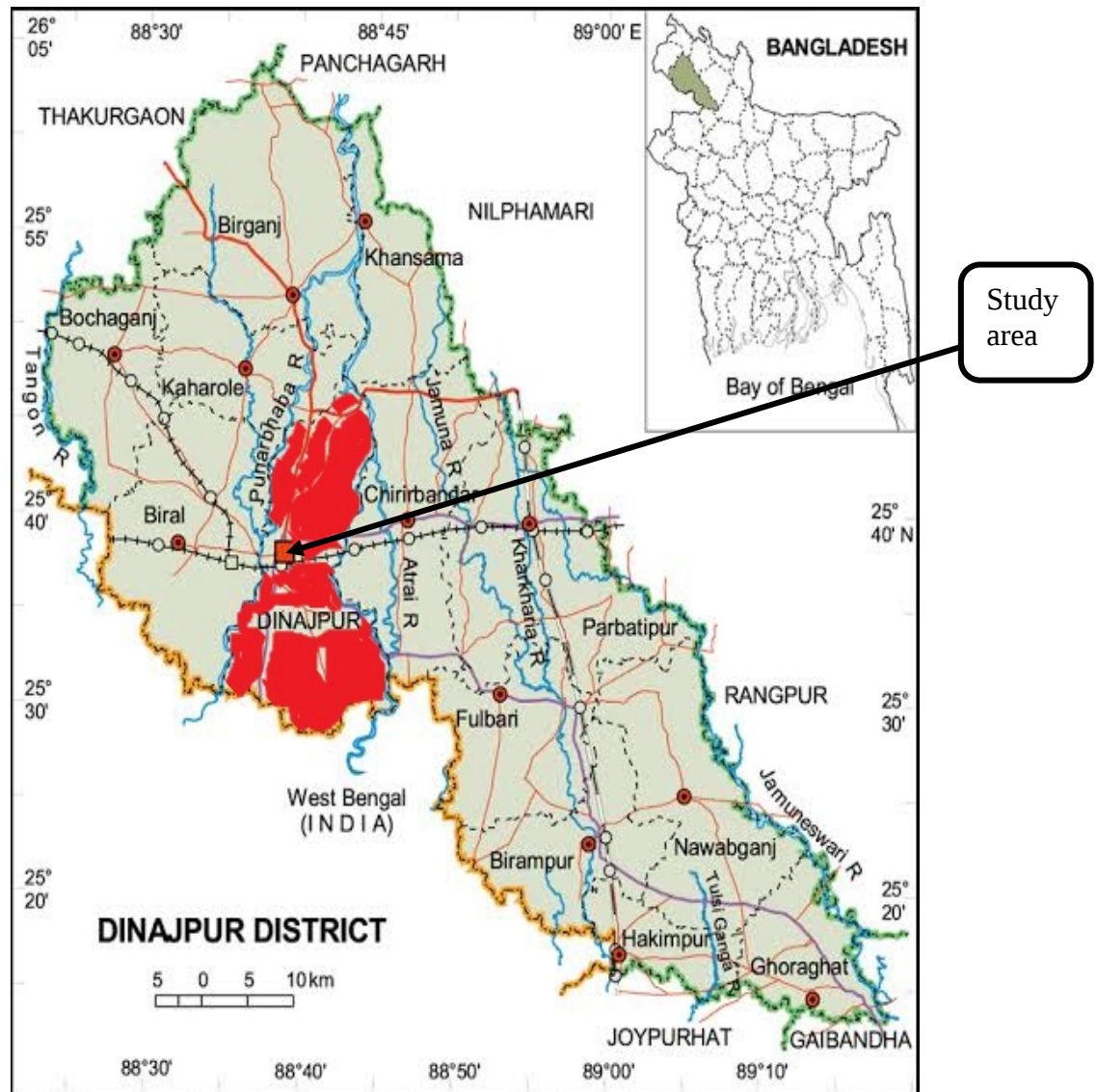


Figure 3.1 Map of Dinajpur district including its upazilla (Bangladesh inset)

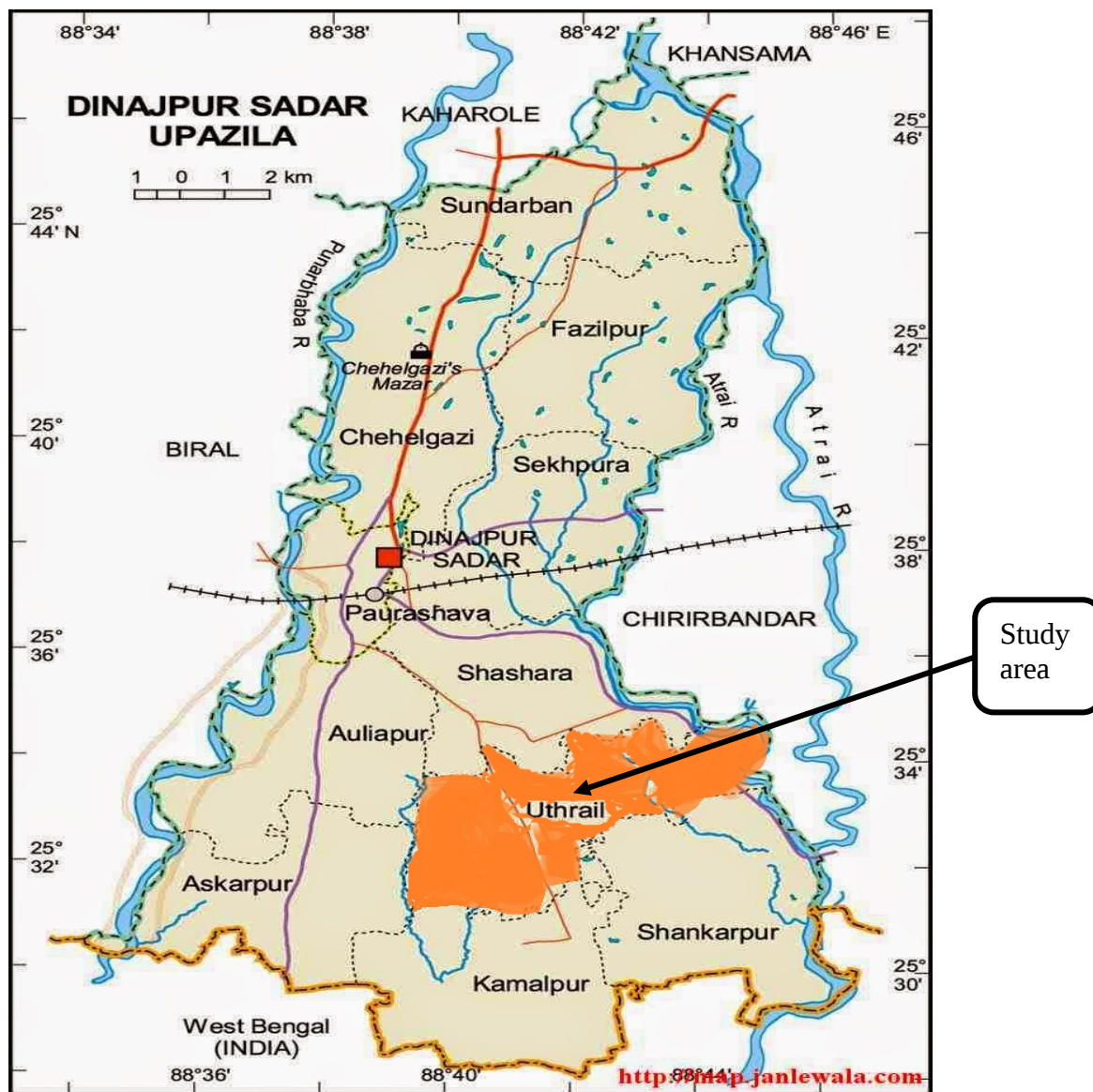


Figure 3.2 Map of Dinajpur Sadar upazilla showing the study area

3.3 Research Instrument

In order to collect data for the study, a structured interview schedule was prepared keeping the objectives in mind. The question and statements contained in the schedule were simple, direct and easily understandable by the respondents. The schedule contained both open and closed form of questions. A draft interview schedule was prepared in advanced before using the same for collection of data. The draft schedule was pre-tested with 10 beneficiaries of MBSK in the selected study area. This pre-test facilitated the researcher to identify faulty questions in the draft schedule and necessary corrections, addition and adjustment was made in the schedule on basis of pre-test results.

3.4 Measurement of the Variables

3.4.1 Measurement of focus issue

Attitude of a respondent towards agricultural activities of MBSK was measured by developing an attitude scale through Puttaswamy (1977) given scale who developed a scale to measure the attitude of village extension workers towards training and visit system in Indian context. Here, Likert method of summated ratings was used to find out the farmers attitude towards agricultural activities of MBSK. Fourteen statements expressing positive and negative feelings towards agricultural activities were constructed. A statement was considered positive if it indicated a favorable attitude towards agricultural activities of MBSK. If the case was reverse, it was considered as a negative statement. Out of these fourteen statements seven were positive and seven were negative. Scoring was done by assigning 4, 3, 2, 1 and 0 scores to the five alternative responses as 'strongly agreed', 'agreed', 'undecided', 'disagreed', and 'strongly disagreed', respectively in case of a positive statement. Reverse score was assigned for a negative statement. However, attitude towards agricultural activities of a farmer was obtained by summing up his/her scores for all the fourteen statements in item number 10 in the interview schedule. Attitude score, thus, obtained for a respondent could range from zero (0) to 56 where zero (0) indicated very unfavorable attitude and 56 indicated highly favorable attitude.

3.4.2 Measurement of selected characteristics

The selected characteristics of the farmers were the causal factors of the study. To keep the study manageable, nine characteristics were selected. These characteristics were age, education, family size, farm size, annual income, organizational participation, agricultural training received, cosmopolitaness and innovativeness. The measurement procedure of these characteristics discussed below.

3.4.2.1 Age

Age of the respondent was measured in terms of years from his/her birthday to the time of interview which will be found on the basis of response. A unit score was assigned for each year of one's age. The characteristic appears in the item number 1 in the interview schedule (Appendix A).

3.4.2.2 Education

Education was measured as the ability of an individual farmer to read and write or formal education received up to a certain standard. Education of the respondents was measured in terms of one's year of schooling. One score was given for passing each level in an educational institution. For example, if a respondent passed the final examination of class V his/her education score was taken as five (5). If a respondent did not know how to read and write, his education score was given as '0'. A score of 0.5 was given to that respondent who could sign his/her name only. The characteristic appears in the item number 2 in the interview schedule (Appendix A).

3.4.2.3 Family size

Family size of a respondent was measured in term of actual members in the family. The family members included the respondent himself/herself his/her wife/husband, sons, daughters and others dependents. For example, if a respondent had five members in the family, his family size score will be 5. This variable appears in the question number 3 in the interview schedule as presented in Appendix A.

3.4.2.4 Farm size

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

$$\text{Total farm size} = [a + b + (c + d) / 2 + e + f + g]$$

Where,

a= Homestead (including garden and fallow land)

b= Own land under own cultivation

c= Land given to others on *borga*

d= Land taken from others on *borga*

e= Land taken from others on lease

f= Pond area

g= Others (if any)

3.4.2.5 Annual income

Annual income of the farmers was measured in Thousand Taka. The total yearly earning from crops (rice, wheat, maize), vegetables, fruits, poultry fish culture, domestic animals, service, business, day labour, rickshaw/auto-rickshaw driving and others by the respondent himself/herself and other members of his/her family was determined. Thus, yearly earnings were added together to obtain annual income of a farmers. A score of one was given for each Tk. 1,000 to compute the annual income scores of the respondents. The characteristic appears in the item number 5 in the interview schedule (Appendix A).

3.4.2.6 Organizational participation

Organizational participation scores of a respondent were computed on the basis of her involvement in different organizations operating in the study area. The researcher considered 5 different items and assigned a score of 0, 1 and 2 for 'no participation', 'member', and 'team leader', respectively. This variable appears in the item number 6 in the interview schedule (Appendix A).

3.4.2.7 Agricultural Training received

Agricultural training of a farmer was measured by the total number of days he/she participated in different agricultural training activities. A score of one (1) was assigned for each day of training received. The characteristic appears in the item number 7 in the interview schedule (Appendix A).

3.4.2.8 Cosmopolitaness

Cosmopolitaness referred to the degree to which an individual is oriented to his/her social system. Cosmopolitaness of respondent was measured by computing a cosmopolitaness score based on frequent of five different places external to his social system. Each respondent was asked to indicate the number of visits to these five different types of place. Score assigned to one's responses was 3, 2, 1, and 0 for frequently, occasionally, rarely and never, respectively. This score obtained for visiting the above five place was added together to get the cosmopolitaness score of a respondent and ranged from 15 to 0. This variable appears in the item number 8 in the interview schedule (Appendix A).

3.4.2.9 Innovativeness

Innovativeness of a farmer was measured by computing an innovativeness score on the basis of his adoption of 10 selected modern agricultural technologies. Innovativeness sub-score was assigned on the basis of his duration of adoption and extent of adoption after first hearing

of a particular technology. Innovativeness of a new technology was measured as 'do not use', above 2 years of hearing, within 1-2 years of hearing and within 1 year of hearing and score were assigned as 0, 1, 2, and 3, respectively. Innovativeness score of respondent could range from 0 to 30 where 0 indicated no innovativeness and 30 indicated highest innovativeness. The variable appears in the item number 9 in the interview schedule (Appendix A).

3.5 Problems Faced in Practicing Agricultural Technologies and suggested solutions

Different problems that might face by the farmers in practicing agricultural technologies were also identified during the interview as per the opinion given by the farmers. Suggested solution to overcome the problems ranked order was made based on the number of responses opined by the farmers.

3.6 Collection of Data

Data were collected personally by the researcher himself through face to face interview. To familiarize with the study area and for getting local support, the researcher took help from the agricultural Unit of MBSK. The researcher made all possible efforts to explain the purpose of the study to the farmers. Rapport was established with the farmers prior to interview and the objectives were clearly explained by using local language as far as possible. Data were collected during the period of September 20 to October 15, 2018.

3.7 Data Processing

After completion of field survey, all the data were coded, compiled and tabulated 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 in to a 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.

3.8 Statistical Analysis

The data were analyzed in accordance with the objectives of the study. Qualitative data were converted into quantitative data by means of suitable scoring technique wherever necessary. The statistical measures such as range, means, standard deviation, number and percentage distribution were used to describe the variables. Pearson's Product Moment Coefficient of Correlation (r) was used in order to explore the relationships between the concerned variables. Five percent (0.05) level of probability was the basis for rejecting any null hypothesis throughout the study. The SPSS computer package was used to perform all these process.

3.9 Statement of Hypothesis

As defined by Goode and Hatt (1952) a hypothesis is a proposition, which can be put to a test to determine its validity. It may prove correct or incorrect of a proposition. In any event, however, it leads to an empirical test. Hypothesis are always in declarative sentence form and they relate either generally of specifically variables to sentence form and they relate either generally or specifically variables to variables. Hypothesis may be broadly divided into two categories, namely, research hypothesis and null hypothesis.

3.9.1 Research hypothesis

Research hypothesis states a possible relationship between the variables being studied or a difference between experimental treatments that the researcher expects to emerge. The following research hypothesis was put forward to know the relationships between each of the nine selected characteristics of the farmers and their attitude towards agricultural activities of MBSK. Each of the nine selected characteristics of the farmers will have significant relationship with their attitude towards agricultural activities.

3.9.2 Null hypothesis

A null hypothesis states that there is no relationship between the concerned variables. The following null hypothesis was undertaken for the present study “There is no relationship between the selected characteristics of farmers and their attitude towards agricultural activities of MBSK. The selected characteristics were age, education, family size, farm size, annual income, organizational participation, agricultural training received, cosmopolitaness and innovativeness.

CHAPTER 4

RESULTS AND DISCUSSIONS

The findings of the study and interpretations of the results have been presented in this Chapter. These are presented in four sub-sections according to the objectives of the study. The first sub-section deals with attitude of farmers towards agricultural activities of MBSK, while the second sub-section deals with the selected characteristics of the farmers. In third section deals with the relationship between the selected characteristics of the farmers and their attitude towards agricultural activities of MBSK and fourth sub-section deals with the problems faced by the farmers in practicing agricultural technologies.

4.1 Attitude of Farmers toward agricultural activities of MBSK

Attitude of farmers towards agricultural activities of MBSK scores ranged from 14 to 56 whereas the expected score ranged from 0 to 56. The mean of the farmer's attitude being 38.96 with a standard deviation of 9.61. Based on the possible attitude scores, the farmers were classified into three categories as: "slightly favorable" (up to 19), "moderately favorable" (20-37), and "highly favorable" (above 37). The distribution of the farmers according to their attitude towards agricultural activities of MBSK has been shown in Table 4.1.

Table 4.1 Overall distributions of the farmers according to their attitude towards agricultural activities of MBSK

Range		Categories (Possible Score)	Respondents (N=92)		Mean	SD
Possible	Observed		Number	Percent		
0-56	14-56	Slightly favorable (Up to 19)	1	1.1	38.96	9.61
		Moderately favorable (20-37)	50	54.3		
		Highly favorable (above 37)	41	44.6		

Data presented in Table 4.1 showed that more than fifty percent (54.3 percent) of the farmers had moderately favorable attitude towards agricultural activities of MBSK. A similar finding was observed by Chawdhury (2015); Rashid (2014), Khan (2012) and Shahin (2012) while 44.6 percent had highly favorable attitude and only 1.1 percent had slightly favorable attitude towards agricultural activities of MBSK.

It was found that the overwhelming majority (98.9 percent) of the farmers showed moderately favorable to highly favorable attitude towards agricultural activities of MBSK.

4.2 Selected Characteristics of the Farmers

Nine characteristics of the farmers were selected to find out their relationships with their attitude towards agricultural activities of MBSK. The selected characteristics included their

age, education, family size, farm size, annual income, organizational participation, agricultural training received, cosmopolitaness, and innovativeness. These characteristics of the farmers are described in this section.

Data contained in the Table 4.2 reveal the main features of the characteristics of the farmers in order to have an overall picture of these characteristics at a glance. However, for ready reference, separate tables are provided while presenting categorizations, discussing and /or interpreting results concerning each of the characteristics in this chapter.

4.2.1 Age

The observed age of the farmers ranged from 20-59 years with a mean of 34.45 year and standard deviation of 8.87. Based on the social standard, they were classified into three categories as young (≤ 35), middle aged (36-50) and old (≥ 51) (Table 4.2). The highest proportions (64.1 percent) of the farmers were found young aged and 31.5 percent were middle aged. While the rest belonged to old aged category.

It indicated that about 95.6 percent of the farmers were young to middle aged. Young people are generally interested to new ideas and things. The farmers have a favorable attitude towards trying new ideas or technologies.

4.2.2 Education

The education scores of the farmers ranged from 0 to 15, the mean being 6.53 and standard deviation 3.86. Based on education system, the respondents were classified into five categories such as illiterate (0), can sign only (0.5), primary level (1-5), secondary level (6-10), and above secondary level (>10) as presented in Table 4.2.

The distribution of the farmers according to their education is shown in Table 4.2. The highest proportion (45.7 percent) of the farmer's had secondary level education, 22.8 percent primary level, 13 percent can sign only, 13.0 percent above secondary level, and only 5.4 percent illiterate. Thus, the overwhelming majority (68.5 percent) of the farmers had education ranging from primary to secondary level. Education helps individuals to become rational, conscious and to get useful information to solve their daily working problems through different sources of information.

4.2.3 Family size

The family size of the farmers ranged from 2 to 10 having mean value of 5.22 and standard deviation 1.36. Based on their family size, they were classified into three categories as small (1-4), medium (5-6) and large (>7) family size (Table 4.2).

Data presented in Table 4.2 revealed that the highest proportion (55.4 percent) had medium sized family. On the other hand, 31.5 percent had small family and 13.0 percent had large

family. Thus, the overwhelming majority (86.9 percent) of the farmers had small to medium sized family.

4.2.4 Farm size

The farm size is the main indicator of holding farming status by the farmers. The farm size scores of the farmers ranged from 0.01 to 2.30, the average being 0.48 and standard deviation of 0.39. On the basis of social standard, the farmers were classified into four categories as 'landless' (≤ 0.02) 'marginal' (0.021-0.20), 'small' (0.21-1.0) and 'medium' (1.01-3.0) as shown in Table 4.2.

The highest proportions (65.20 percent) of the respondents were small farm sized, 27.2 percent had marginal farm size, 6.5 percent had medium farm size and only 1.1 percent was landless. Farm size of the people is being decreased day by day due to land fragmentation through generation to generation.

4.2.5 Annual income

Annual income of the farmers ranged from 35.0 to 618.80, the mean being 189.43 and standard deviation of 106.16. On the basis of their observed annual income scores, the farmers were divided into three categories: low (≤ 90), medium (90.01-290.0) and high (>290). The distribution of the farmers according to their family income is shown in Table 4.2.

The highest proportion (72.8 percent) of the farmers had medium income compared to 15.2 percent of them having high income and only 12.0 percent had low income. Thus, the overwhelming majority (88.0 percent) of the farmers had medium to high income.

Table 4.2 Main features and categorization of the farmers (N=92)

Characteristics	Scoring method	Range		Categories	Respondents		Mean	SD
		Minimum	Maximum		No.	Percent		
Age	No. of year	Unknown	20-59	Young (≤ 35)	59	64.1	34.45	8.87
				Middle (36-50)	29	31.5		
				Old (≥ 51)	4	4.3		
Education	Year of schooling	Unknown	0-15	Illiterate (0)	5	5.4	6.53	3.86
				Can sign only (0.5)	12	13.0		
				Primary level (1-5)	21	22.8		
				Secondary level (6-10)	42	45.7		
				Above secondary (>10)	12	13.0		
Family size	No. of members	Unknown	2-10	Small (1-4)	29	31.5	5.22	1.36
				Medium (5-6)	51	55.4		
				Large (>6)	12	13.0		
Farm size	Hectare	Unknown	0.01-2.30	Landless (≤ .02)	1	1.1	0.48	0.39
				Marginal (0.021-0.20)	25	27.2		
				Small (0.21-1.0)	60	65.2		
				Medium (1.01-3.0)	6	6.5		
Annual income	('000' Tk.)	Unknown	35.0-618.80	Low (≤ 90.0)	11	12.0	189.43	100.16
				Medium (90.01-290.0)	67	72.8		
				High (>290.0)	14	15.2		
Organizational participation	Score	Unknown	1-4	Low (≤ 1)	43	46.7	1.68	0.74
				Medium (2-3)	48	52.2		
				High (>3)	1	1.1		
Agricultural Training received	Days	Unknown	0-9	0)	40	43.5	1.34	1.65
				1 (≤ 3)	47	51.1		
				Medium (4-6)	3	3.3		
				High (>6)	2	2.2		
Cosmopoliteness	Score	0-15	0-13	Low (up to 5)	69	75.0	4.13	3.09
				Medium (6-10)	18	19.6		
				High (>10)	5	5.4		
Innovativeness	Score	0-30	0-21	Low (up to 10)	81	88.0	5.59	3.93
				Medium (11-20)	10	10.9		
				High (≥ 21)	1	1.1		

In order to have a reasonable standard of living these farmers must be able to have high yield of crops per hectare and increase their cultivation intensity.

4.2.6 Organizational participation

The computed organizational participation score of the farmers ranged from 1-4, the average being 1.68 and standard deviation of 0.74. On the basis of computed scores, the farmers were classified into three categories namely, low participation (≤ 1), medium participation (2-3), high participation (> 3).

Data presented in Table 4.2 revealed that highest proportion (52.2 percent) of the farmers had medium participation while 46.7 percent of the farmers had low participation in organization and 1.1 percent of the farmers had high participation in organization. It indicated that the farmers of the study area were involved with various organizations.

4.2.7 Agricultural training received

The agricultural training received scores of the farmers ranged from 0 to 9 with an average of 1.34 days and a standard deviation of 1.65. On the basis of their observed agricultural training received scores, the farmers were classified into four categories: no (0), short (≤ 3), medium (4-6) and long (>6). The distribution of the farmers according to their training received score is shown in Table 4.2.

Result presented in Table 4.3 showed that 51.1 percent of the farmers had received short training, 43.5 percent of them had no training, 3.3 percent had medium and only 2.2 percent farmers had high training. It also proved that there is always a relationship between training received and change attitude towards modern technologies. Because training received develops the farmers' knowledge, skill and attitude in positive manner. The findings suggest that training experience might be the most important factor for the respondents to change their attitude towards agricultural activities of MBSK.

4.2.8 Cosmopoliteness

The cosmopoliteness score of the farmers ranged from 0 to 13 with a mean of 4.13 and standard deviation of 3.09. Based on the cosmopolite scores, the farmers were classified into three categories as low (up to 5), medium (6-10) and high (>10). The distribution of the farmers according to their cosmopoliteness score is presented in Table 4.2.

Data showed that exactly three-fourths (75.0 percent) of the farmers had low cosmopoliteness while 19.6 percent had medium cosmopoliteness and only 5.4 percent of the farmers had high cosmopoliteness. People differ in their traveling behavior. Despite the innate characteristics of traveling behavior, actually most of the people now a day, in the rural community are very much concerned about their basic needs and they extensively visit to other place time to time as because in most of the cases there is good communication network. The communication

system in most of the cases in our country is developing day by day. Cosmopoliteness sometimes depends on the involvement with different types of profession.

4.2.9 Innovativeness

The innovativeness score of the farmers ranged from 0 to 21 with a mean of 5.59 and standard deviation was 3.93. Based on the innovative score farmers were distributed into three categories namely, low (up to 10), medium (11-20), and high (≥ 21). The majority (88.0) of the farmers had low innovativeness, while 10.9 percent of the farmers had medium and 1.1 percent of the farmers had high innovativeness.

4.3 Relationships between the Selected Characteristics of the Farmers with their Attitude towards Agricultural Activities of MBSK

The purpose of this section is to explore the relationships between each of the selected characteristics of the farmers and their attitude towards agricultural activities of MBSK. The selected characteristics constituted causal factors and the focus issue was considered attitude of farmers towards agricultural activities of MBSK. Pearson's product moment correlation co-efficient 'r' was used to test the null hypothesis concerning the relationship between any two variables. The summary results of test of correlation coefficient are shown in table 4.3. However, a correlation matrix for focus issue and selected characteristics were presented in Appendix B.

4.3.1 Age and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (-0.179) value as shown in Table 4.3 the relationship between age and attitude of farmers towards agricultural activities of MBSK is not significant. Hence, the concerned null hypothesis could not be rejected. The findings indicated that age of the farmers had no significant relationship with their attitude towards agricultural activities of MBSK. Similar findings were also observed by Husna, 2014, Rashid, 2014, Parvez, 2007 and Chowdhury, 2006.

4.3.2 Education and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (0.215) value as shown in Table 4.3 the relationship between education and attitude of farmers towards agricultural activities of MBSK was statistically significant with 90 degrees of freedom at 0.05 level of probability. Hence, the concerned null hypothesis could be rejected. The finding indicated that education of the farmers had positive significant relationship with their attitude towards agricultural activities of MBSK. Similar findings were also observed by Rahman (2015), Hossain (2015), Husna (2014), Rashid (2014) and Ahmed (2013).

4.3.3 Family size and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (0.109) value as shown in Table 4.3 the relationship between

family size and attitude of farmers towards agricultural activities of MBSK was not significant. Hence, the concerned null hypothesis could not be rejected. The finding indicated that family size of the farmers had no significant relationship with their attitude towards agricultural activities of MBSK. Similar findings were also observed by Rahman (2015), Hossain (2015) and Shahin (2012).

Table 4.3 Correlation between focus issue and selected characteristics

Focus Issue	Selected Characteristics	Correlation Value of 'r' with 90 df
Attitude of Farmers towards Agricultural Activities of MBSK	Age	-0.179
	Education	0.215*
	Family size	0.109
	Farm size	0.043
	Annual income	0.432**
	Organizational participation	0.403**
	Agricultural training received	0.315**
	Cosmopoliteness	0.108
	Innovativeness	0.233*

*, Correlation is significant at the 0.05 level (Tabulated value 0.206)

**, Correlation is significant at the 0.01 level (Tabulated value 0.267)

4.3.4 Farm size and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (0.043) value as shown in Table 4.3 the relationship between farm size and attitude of farmers towards agricultural activities of MBSK was statistically not significant at 5 percent level of probability. Hence, the concerned null hypothesis could not be rejected. The finding indicated that farm size of the farmers had no significant relationship with their attitude towards agricultural activities of MBSK. Thus, it could be showed that there was a positive relationship between the farm size of the farmer and attitude towards agricultural activities of MBSK. Similar finding was revealed by Rahman (2015), Chowdhury (2015) and Rashid (2014).

4.3.5 Annual income and attitude towards agricultural activities of MBSK

According to the computed 'r' (0.432) value as shown in Table 4.3 the relationship between annual income and attitude of farmers towards attitude towards agricultural activities of MBSK was significant with 90 degrees of freedom at 0.01 level of probability. Hence, the concerned null hypothesis could be rejected. The finding indicated that annual income of the farmers had positively significant relationship with their attitude towards agricultural activities of MBSK. Similar findings were also observed by Hossain (2015), Rabby (2014) and Shahin (2012).

4.3.6 Organizational participation and farmers attitude towards agricultural activities of MBSK

The computed correlation coefficient between organizational participation of the farmers and their attitude towards agricultural activities of MBSK was 0.403 which was positively significant at 0.01 level of probability (Table 4.3). Hence the concerned null hypothesis could be rejected. Thus, it is showed that there was positively significant relationship between organizational participation and their attitude towards agricultural activities of MBSK. This might be due to that organizational participation makes them able to understand about the social, economical, environmental and political issues. It creates awareness of the farmers about functional activities of different GOs and NGOs. Similar findings were observed in Noor (1995).

4.3.7 Agricultural training received and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (0.315) value as shown in Table 4.3 the relationship between agricultural training received and attitude of farmers towards agricultural activities of MBSK was positively significant at 0.01 level of probability. Hence, the concerned null hypothesis could be rejected. The findings indicated that agricultural training received of the farmers had positive significant relationship with their attitude towards agricultural activities of MBSK. Agricultural training helps a farmer to improve knowledge on culture system. Similar result was found by Chawdhury (2015), Hossain (2015) and Rabby (2014).

4.3.8 Cosmopoliteness and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (0.108) value as shown in Table 4.3 the relationship between cosmopoliteness and attitude of farmers towards agricultural activities of MBSK was statistically not significant. So, the concerned null hypothesis could not be rejected.

4.3.9 Innovativeness and attitude of farmers towards agricultural activities of MBSK

According to the computed 'r' (0.233) value as shown in Table 4.3 the relationship between innovativeness and attitude of farmers towards agricultural activities of MBSK was positively significant with 90 degrees of freedom at 0.05 level of probability. Hence, the concerned null hypothesis could be rejected. The finding indicated that innovativeness of the farmers had positive significant relationship with their attitude towards agricultural activities of MBSK. Similar result was found by Uddin *et al.* (2006), Khan (2005) and Rahman (2001).

4.4 Problems Faced in Practicing Agricultural Technologies

Farmers may face several problems that hinder agricultural farming system. For easy understanding, the problems given by them are listed in this section with their number of citation, percent and rank order. The researcher made an attempt to identify the various problems which are presented below (Table 4.4).

Table 4.4 Rank order of the problems faced by the farmers in practicing agricultural technologies

Problems	No. of citation	Percent	Rank order
Disease and insect infestation	85	92.39	1 st
Unavailability of inputs	78	84.78	2 nd
Lack of technical knowledge	75	81.52	3 rd
Lack of credit facilities with low interest	71	77.17	4 th
High input cost	65	70.65	5 th

It is evident from the Table 4.4 that ‘Disease and insect infestation’ (92.39 percent) emerged as the most important problem expressed by the farmers. It is due to that they have low level of knowledge on preventive measures of insect and diseases.

‘High input cost’ (70.65 percent) was the last ranked (5th) problem as cited by the farmers. This might be due to that the input cost of the modern agricultural technologies like seeds of HYV are high.

4.4.1 Suggested solutions to overcome the problems

The farmers of MBSK also provided some suggestion to overcome the problems they faced in practicing agricultural technologies. Those are given in Table 4.5.

It is noted from the data in Table 4.5 that the foremost (83.69 percent) suggestion cited by the farmers was ‘Supply of good quality seeds by the input supply agencies of GO and NGOs’. It may be due to that farmers had adopted various technologies related to climate adaption. So it is the first ranked suggestion opined by the farmers of the study area.

Table 4.5 Rank order of the suggestions offered by the farmers to overcome the problems faced in practicing agricultural technologies.

Suggested solutions	No. of citation	Percent	Rank order
Supply of good quality seeds by the input supply agencies of GO and NGOs	77	83.69	1 st
Increased training facilities according to their needs.	70	76.08	2 nd
Strengthening of extension services.	67	72.82	3 rd
Increased financial support availability according to the needs.	65	70.65	4 th
Decreased rate of interest of credit by the NGOs.	60	65.21	5 th
Increased marketing facilities of farm produce.	55	59.78	6 th

‘Increased training facilities according to their needs’ were the second most important (76.08 percent) suggestion offered by the farmers of MBSK. ‘Increased marketing facilities of farm produce’ was the last important (59.78 percent) suggestion offered by the farmers. It may be due to low marketing facilities of the farm produce for the farmers. That is why it might be the last ranked suggestion opined by the farmers.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings

The study was conducted to determine the attitude of farmers towards agricultural activities of MBSK, to explore the relationship between selected characteristics of the farmers with their attitude towards agricultural activities of MBSK and to determine the problems faced by the farmers in practicing agricultural technologies. The study was carried out in Uthrail union of Sadar upazilla under Dinajpur district. Ninety two (92) farmers were selected as sample from 368 farmers involved with agricultural activities of MBSK. Data were collected by a pre-tested interview schedule during September 20 to October 15, 2018. This Chapter presents the summary of the major findings, conclusion and recommendations of the study.

5.1.1 Attitude of farmers toward agricultural activities of MBSK

Attitude of farmers towards agricultural activities of MBSK scores ranged from 14 to 56 whereas the expected score ranged from 0 to 56. More than fifty percent (54.3 percent) of the farmers had moderately favorable attitude towards agricultural activities of MBSK while 44.6 percent had highly favorable attitude and only 1.1 percent had slightly favorable attitude towards agricultural activities of MBSK. It was found that the overwhelming majority (98.9 percent) of the farmers showed moderately favorable to highly favorable attitude towards agricultural activities of MBSK.

5.1.2 Selected characteristics of the farmers

The observed **age** of the farmers ranged from 20-59 years and more than half (64.1 percent) of the farmers were young aged compared to 31.5 percent of them being middle aged and 4.3 percent old. Majority of the farmers (95.6 percent) were middle aged to young aged.

The **education** scores of the farmers ranged from 0 to 15 and the highest proportion (45.7 percent) of the farmer's had secondary level, 22.8 percent primary level, 13 percent can sign only, 13.0 percent above secondary level, and 5.4 percent illiterate. Thus, the overwhelming majority (68.5 percent) of the farmers had education ranging from primary to secondary level.

The **family size** of the farmers ranged from 2 to 10 and the highest proportion (55.4 percent) had medium sized family. On the other hand, 31.5 percent had small family and 13 percent had large family. Thus, the overwhelming majority (86.9 percent) of the farmers had small to medium sized family.

The **farm size** scores of the farmers ranged from 0.01 to 2.30. The highest proportions (65.2 percent) of the respondents were small farm sized, 27.2 percent had marginal farm size, and 6.5 percent had medium farm size and only 1.1 percent landless.

Annual income of the farmers ranged from 35.0 to 618.80. The highest proportion (72.8 percent) of the farmers had medium income compared to 15.2 percent of them having high income and only 12.0 percent had low income. Thus, the majority (88.0 percent) of the farmers had medium to high income.

The **organizational participation** score of the farmers ranged from 1-4. The highest proportion (52.2 percent) of the farmers had medium participation while 46.7 percent of the farmers had low participation in organization and 1.1 percent of the farmers had high participation in organization.

The **agricultural training received** scores of the farmers ranged from 0 to 9 with an average of 1.34 days and a standard deviation of 1.65. The study showed that 51.1 percent of the farmers had short training received, 43.5 percent of them had no training, 3.3 percent had medium and 2.2 percent farmers had high training.

The **cosmopoliteness** score of the farmers ranged from 0 to 13. Data showed that highest proportion (75.0 percent) of the farmers had low cosmopoliteness while 19.6 percent had medium cosmopoliteness and only 5.4 percent of the farmers had high.

The **innovativeness** score of the farmers ranged from 0 to 21. The overwhelming majority (88.0 percent) of the farmers had low innovativeness, while 10.9 percent of the farmers had medium and 1.1 percent of the farmers had high.

5.1.3 Relationships between the selected characteristics of the farmers with their attitude towards agricultural activities of MBSK

Coefficient of correlation was computed in order to explore the relationship between the selected characteristics of the farmers with their attitude towards agricultural activities of MBSK. Correlation analyses indicated that among nine selected characteristics education, annual income and organizational participation, agricultural training received and innovativeness of the farmers had positive significant relationships with their attitude towards agricultural activities of MBSK. However, age, family size, farm size, and cosmopoliteness had no significant relationships with their attitude towards agricultural activities of MBSK.

5.1.4 Problems faced in practicing agricultural technologies and suggested solutions to overcome the problems

The most common problem faced by the farmers was “Disease and insect infestation” (92.39 percent) and ranked first as per opined by the farmers. ‘High input cost’ (70.65 percent) was the last ranked (5th) problem as cited by the farmers.

The foremost (83.69 percent) suggestion cited by the farmers was ‘Supply of good quality seeds by the input supply agencies of GO and NGOs’. ‘Increased marketing facilities of farm produce’ was the last important (59.78 percent) suggestion offered by the farmers.

5.2 Conclusions

Based on the above findings the following conclusions were drawn:

1. More than fifty percent (54.3 percent) of the farmers had moderately favorable attitude towards agricultural activities of MBSK. It may be concluded that farmers are practicing various modern agricultural technologies given by the MBSK for improving agricultural production and upgrading their socio-economic condition.
2. The overwhelming majority (68.5 percent) of the farmers had education ranging from primary to secondary level. It may be concluded that education of the study area would give positive attitude towards the innovative agricultural technologies and also help extension providers to demonstrate, disseminate, train and motivate farmers to adopt appropriate technologies.
3. The overwhelming majority (86.9 percent) of the farmers had small to medium farm size. So, it could be concluded that farm size also help to increase family income.
4. The highest proportion (72.8 percent) of the farmers had medium income. So, it could be concluded that the farmers of medium annual income, the highly favorable attitude towards agricultural activities of MBSK.
5. Exactly three-fourths (75.0 percent) of the farmers had low cosmopoliteness. So, it could be concluded that more cosmopoliteness, more knowledge on different NGOs.
6. Correlation test showed that education, annual income, organizational participation, agricultural training received and innovativeness of the farmers had positively significant relationships with their attitude towards agricultural activities of MBSK. Therefore it can be concluded that these characteristics of the farmers might have good link with their attitude towards agricultural activities of MBSK.
7. Age, family size, farm size and cosmopoliteness had no significant relationships with their attitude towards agricultural activities of MBSK. This indicates that farmers’

attitude agricultural activities of MBSK, and above characteristics of the farmers are independent to each other.

8. From the findings it might be concluded that farmers were facing considerable amount of various problems.

5.4 Recommendations

5.3.1 Recommendations for policy implication

1. Majority of the farmers of the study area had moderate to highly favorable attitude towards agricultural activities of MBSK. So, the GOs and other NGOs should take action on socio-economic development of farmer with the help of modern agricultural activities.
2. Age had no significant relationship with attitude of the farmers towards agricultural activities of MBSK. Therefore, it may be recommended that DAE and GOs should target young and middle aged beneficiaries to change their attitude towards agricultural activities of MBSK and others related NGOs.
3. The literacy rate of the farmers was high and it related to their knowledge gain. It is therefore, recommended that farmers can take advantage of different printed materials i.e. book, booklets, leaflets, posters, newspapers, etc. so that they can get more knowledge easily and can increase positive attitude. It is, therefore, recommended that arrangement should be made by the concerned authorities to undertake more educational activities for increasing the education level of the farmers.
4. Farmers faced considerable amount of problems in practicing agricultural technologies. It is therefore, recommended that concerned authorities should take attention to the solution of the problems as soon as possible.

5.3.2 Recommendations for further study

1. The study was conducted among the farmers of selected area of Uthrail union of Sadar upazilla under Dinajpur district. Findings of this study need verification by similar research in other parts of the country.
2. Attitude towards agricultural activities of MBSK was investigated. But such study may be conducted by taking into consideration of other factors.
3. Relationships of nine characteristics of the farmers with their attitude were investigated in this study. Further research should be conducted to explore

relationships of other characteristics of the farmers with their attitude towards agricultural activities of MBSK.

4. It is difficult to determine the appropriate attitude of the farmers towards agricultural activities of MBSK. Measurement of attitude of the farmers is not free from questions. More reliable measurement of the concerned variables is necessary for evaluating farmers' attitudes and opinions.
5. Larger farm size compared to national average suggests further studies may be conducted with larger samples than the sample taken at present study.

APPENDIX B

Correlation Matrix between Selected Characteristics of the Farmers and Focus Issue

Selected Characteristics	Age	Education	Family size	Farm size	Annual Income	Organizational Participation	Agricultural Training Received	Cosmopoliteness	Innovativeness	Attitude
Age	1									-0.179
Education	-0.259*	1								0.215*
Family size	-0.108	-0.067	1							0.109
Farm size	0.103	0.066	0.340**	1						0.043
Annual Income	-0.166	0.112	0.149	0.348**	1					0.432**
Organizational Participation	-0.146	0.140	-0.029	0.113	0.324**	1				0.403**
Agricultural Training Received	0.086	0.085	-0.082	0.047	0.178	0.420**	1			0.315**
Cosmopoliteness	-0.081	-0.064	0.142	-0.205	-0.009	-0.049	-0.105	1		0.108
Innovativeness	0.183	0.083	-0.115	0.142	0.026	0.223*	0.214*	-0.134	1	0.233*
Attitude	-0.179	0.215*	0.109	0.043	0.432**	0.403**	0.315**	0.108	0.233*	1

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

APPENDIX A

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Hajee Mohammad Danesh Science and Technology University
Dinajpur

Interview schedule of the research study entitled
Attitude of Farmers towards Agricultural Activities of
Mohila Bohumukhi Shikkha Kendra

Date.....

Sl. No.

a) Name of the respondent:

b) Village:

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

1. Age: What is your present Age?.....years.

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

Sl. No.	Nature of holding	Area		
		Local Unit		Hectare
		Bigha	Decimal	
a.	Homestead (including garden and fallow land)			
b.	Own land under own cultivation			
c.	Land given to others on <i>borga</i>			
d.	Land taken from others on <i>borga</i>			
e.	Land taken from others on lease			
f.	Pond area			
g.	Others (if any)			
Total [a+b+ (c+d)/2 + e+f+g]=				

5. Annual income: Give particulars about your family income of last year from different sources.

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

6. Organizational Participation: Please mention the nature of your participation in the programs of the following NGOs.

Sl. No.	Name of the NGOs	No participation	Member	Team leader
1.	MBSK			
2.	BRAC			
3.	ASA			
4.	Caritas			
5.	Others			

7. Agricultural training received: Have you received any training during the last three Years?

Yes ☐ No ☐

If yes, please furnish the following information

Sl. No.	Name of Organization(s)	Duration (Days)
1.		
2.		
3.		

8. Cosmopolitaness: How often you visit places outside of your village

Sl. No.	Places of visit	Extent of visit			
		Frequently	Occasionally	Rarely	Never
1.	Other village	13 or more times/month	5-12 times/month	1-4 times/month	0 times/month
2.	Own Upazila headquarter	13 or more	7-12 times/	1-6 times/	0 times/

		times/ month	month	month	month
3.	Other Upazila	8 or more times/ year	4-7 times/ year	1-3 times/ year	0 times/ year
4.	Own district town	6 or more times/ year	3-6 times/ year	1-2 times/ year	0 times/ year
5.	Divisional or Capital city	3 or more times/ year	2 times/ year	1 times/ year	0 times/ year

9. Innovativeness: If you adopt the following technologies please mention their duration of adoption after you first hearing of the same.

Sl. No.	Name of technology	Do not use	Duration of adoption After First Hearing		
			Above 2 years	Within 1-2 years	Within 1 year
1.	Application of organic manure				
2.	Use of balance fertilizer				
3.	Application of Vermi-compost				
4.	Use of hybrid seeds				
5.	Use of IPM				
6.	Rearing improved variety of poultry				
7.	Rearing improved variety of goat				
8.	Vaccination of poultry				
9.	Vaccination of cattle				
10.	Tree plantation for environment protection				

10. Farmers Attitude towards Agricultural Activities of MBSK: Please indicate your opinion in respect of the following statements.

Sl. No.	Statements	Extent of opinion				
		SA	A	U	D	SD
1. (+)	Rice production increased due to the use of USG fertilizer.					

2. (-)	Application of USG in the rice field is laborious and need extra labor.					
3. (+)	Alternate Wetting and Drying (AWD) technology minimizes the use of irrigation water.					
4. (-)	For setting and using of porous pipe in AWD after planting of seedling needs an extra care and time to time monitoring.					
5. (+)	Sex pheromone trap is an effective technology for pesticide free vegetable production.					
6. (-)	For large scale production of vegetable sex pheromone trap is not so effective like pesticide due to the high cost.					
7. (+)	Farmers are getting more production and profit from the introduction of HYVs.					
8. (-)	Farmers are dismotivated in organic vegetables for getting lower price at local market					
9. (+)	Farmers are producing and preserving more seeds of rice through participation in MBSK programs.					
10. (-)	Quality seed production is comparatively costly because it requires intensive care, proper and time to time monitoring					
11. (+)	Trico-compost improves the health of the soil and ultimately increase the crops production					
12. (-)	Farmers have less interest in the production of Trico-compost because it is laborious and costly					
13. (+)	Perching and light trap in paddy field is an environment friendly insect control system					
14. (-)	Farmers are dismotivated to use perching and light trap technology because it requires more labour, time and cost.					

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

11. Problem Faced: Please mention the problems that you are facing in practicing agricultural technologies.

1.
2.
3.
4.
5.

12. Please mention the possible suggestion as you think to overcome those problems.

1.
2.
- 3.....
- 4.....
5.

Thanks for your cooperation and giving me your time.

.....
Signature of the Enumerator

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