ADOPTION OF BRINJAL PRODUCTION TECHNOLOGIES BY THE FARMERS IN RANGPUR DISTRICT

A Thesis By

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CERTIFICATE

This is to certify that the thesis entitled, **"ADOPTION OF BRINJAL PRODUCTION TECHNOLOGIES BY THE FARMERS IN RANGPUR DISTRICT** " submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE** in **AGRICULTURAL EXTENSION AND INFORMATION SYSTEM,** embodies the result of a piece of bona fide research work carried out by **Md. Mosaddak Hasan Mithun** Registration No. **18-09167** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that such help or source of information, as has been availed of during the course of this investigation has been duly acknowledged by him.

Dated: December,2020
Place: Dhaka, Bangladesh

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DEDICATED TO MY BELOVED PARENTS WHO LAID DOWN THE FOUNDATION OF MY SUCCESS.

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The author

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ABSTRACT

The main purpose of the study was to determine the extent of adoption of brinjal production technologies by the farmers. Attempts were made to explore the relationships between the selected characteristics of farmers and adoption of selected technologies. Data were obtained from 100 randomly selected farmers from a total of 500 in Betgari union under Gangachara upazila in Rangpur district during 10 August to 10 September 2020 with the help of an interview schedule. Appropriate scales were developed in order to measure the variables. Correlation test was used to ascertain the relationships between the concerned variables of the study. The findings revealed that, majority (67 percent) of the farmers had medium adoption while (18 percent) had low adoption and (15 percent) had high adoption of selected brinjal production technologies. Correlation analysis indicate that among the selected characteristics of the farmers, education, family size, farm size, annual family income, farming experience, extension contact, training exposure and organizational participation showed significant positive relationships with the adoption of brinjal production technologies. On the other hand, age and Cosmopoliteness of farmers did not show any significant relationships with their adoption of brinjal production technologies.

CHAPTER I

INTRODUCTION

1.1 Background of the study

Bangladesh is an agricultural country where agriculture sector plays a vital role in accelerating the economic growth. It is therefore important to have an effective, sustainable and environment friendly agricultural sector in order to make our country self-sufficient in food production. It is one of the most populous countries in the world. About 80% of the total population of this country lives in the rural areas. And the living of this vast population is mostly dependent on agriculture. About one- third of GDP comes from agriculture and one-third of labor force (as 40%) is engaged in agriculture (BBS 2018).

Agriculture is the dominant sector of the country's economy. In term of GDP it contributes about 14% and provides employment for about 40% of the total labor force. Exports of agricultural products accounted for about 6.83% of total exports in 2017-2018(BER 2019). Crop represents a share of about 14% in the total GDP and about 73% in agricultural GDP. Production of fruits and vegetables has been projected to be 3.54 million metric ton and 1.82 million metric ton respectively by the end of the seventh five year plan period (Anonymous, 1998).The development of agriculture is mostly dependent on the use of modem technologies by the farmers. The future of the farmers and that of Bangladesh is influenced by the extent to which the farmers use more modem technologies which are locally applicable under the changing circumstances. Agriculture production can only be increased if appropriate technologies are used by the farmers who are the primary unit of adoption of improved practices. Diffusion of proper knowledge on modem agriculture among the rural people demands effective communication system. In addition, immediacy and effectiveness is also valuable dimension for communication of

technological messages. This suggests that the flow of information should be as fast as possible and also should be understandable, well interpreted, accepted and liked by users. Bangladesh produces different kind of vegetables. Brinjal or eggplant is one of the most common popular, and principal vegetable crops grown in Bangladesh and other parts of the world. A numbers of cultivars are grown throughout the country depending upon the yield, consumer's preference about the colour, size, and shape of the various cultivars. It is highly productive. Brinjal is the most important vegetable of the country. Brinjal *(Solatiummelongena),* Linnaeus belongs of the family Solanaceae (Thompson, 1951) is also known as eggplant or aubergine is a popular nutritious and grown vegetable in Bangladesh as well as in the world and has got multifarious use as a dish item It is thought to be originated in Indian subcontinent because of maximum of genetic diversity and closely related species of solanuim are grown in this reason (Rashid, 1976; Zeven and Zhukovsky, 1975).Brinjal is an annual in temperate zones and perennial in the tropics plant grow to a height of 60 to 120 cm. (2-4 ft) and bears of a few large fruits which are oval shaped or an elongated oval. A warm season crops of brinjal requires continuous long warm weather during growth and Fruit maturation .The optimum growing temperature is 22-30°C (72°-86°F) and growth stop at temperature below 17°C (63°F).

Brinjal is the second most important vegetable crop next to potato in respect of total average (72,753 ha.) and production (4,20,000 mt. annually) in Bangladesh (BBS, 2018). It is equally preferred by both rich and poor people. Brinjal are extensively cultivated in Bangladesh and is grown in homestead area and commercial field in the both winter and rainy seasons. It is grown round the year in any space available for crop cultivation. Therefore it is available in the country throughout the year especially during the lean period when the seasonal vegetables are in a scarcity in the market. Brinjal is regarded as a cash crop to the farmers which provides them continuous harvesting and financial assistance.

Total production of brinjal has been estimated 425, 410 and 390 thousand MT. in 2014-2015, 2015-2016 and 2016-2017, respectively (BBS, 2018).

1.2 Justification of the study

Brinjal is one of the most important vegetable of the country. Production of brinjal may be increased by using of modem technologies properly. In Bangladesh, the production of brinjal was 425 thousand, m. ton during 2014-2015 (BBS 2018). The concept and benefits of the modem technologies should be disseminated to the farmers in a convincing and attractive manner, so that farmers response quickly to adopt those technologies. This is undoubtedly an educative process and it possible through Extension Education System, concerned mainly with increasing agricultural production and improving living standards of the farmers. Brinjal is the second most important crops of Bangladesh after potato. Some famous varieties are cultivated in Rangpur district which profitability is higher than other vegetables crops. Rangpur district is considered as brinjal surplus production zone of the country. Therefore, the Rangpur district is considered as the most suitable location to study the phenomenon of adoption of brinjal production technologies by the brinjal growers.

On an average about 2.5 to 2.9 million hectares of land remain uncultivated during in winter season. A substantial portion of that brinjal production need less water, faces less problem due to weed and insect. Now considerable effort is being made through research and extension delivery system to increase brinjal production in our country. But the actual increase in production will depend on the activities of the brinjal growers. The behavior of a farmer is influenced by his personal, economic, social and physiological characteristics (Hossain, 2005).

1.3 Statement of the Problem

When an innovation is introduced to the farmer, it may be readily accepted, partly accepted, completely or partly rejected or sometimes it may so happen that the adoption of innovation is discontinued or totally stopped. These happening are certainly due to a number of factors. Adoption of brinjal production technologies are influenced by the farmers demographic and socio economic position. An understanding about the same will be useful to the researchers, planners and extension workers in doing research, planning and execution of extension programs for enhancing adoption of brinjal production technologies. The purpose of this study therefore, was to explore the relationships between different characteristics of the farmers and their adoption of brinjal production technologies.

To expand the cultivation of this vegetable crop in other parts of the country, the knowledge on the present situation of brinjal production technologies in this region will be significantly contributory to design appropriate programs for its widespread cultivation. In these respects, the answers to the following questions will be very much pertinent.

- To what extent of brinjal production technologies has been adopted by the brinjal growers?
- What are the characteristics of brinjal growers?
- What are the relationships of the adoption of brinjal production technologies with some selected characteristics of the brinjal growers?

These questions obviously indicate the need for conducting a research study entitled “Adoption of brinjal production technologies by the farmers in two selected villages of Gangachara upazila in Rangpur district”.

1.4 Specific Objectives of the Study

The following objectives were formulated to give clear direction to the study:

1. To determine and describe following selected characteristics of the farmers:

   selected characteristics are

- Age
- Education
- Family size
- Farm size
- Annual family income
- Farming experience
- Extension contact
- Training exposure
- Organizational participation
- Cosmopolitenes

2. To determine and describe the extent of adoption of brinjal production technologies by the farmers.

- Recommended brinjal variety
- Use of line transplanting method
- Recommended doses of fertilizer
- Use of IPM (Integrated Pest Management) practice

3. To explore the relationship between the selected characteristics of the farmers and their adoption of brinjal production technologies.

1.5 Scope of the Study

The main focus of the study was to determine adoption of brinjal production technologies. The findings of the study will be specifically applicable to 1 no. Betgari union under Gangachara Upazila in Rangpur district. However, the findings will also have implications for other areas of the country having relevance to the socio-cultural context of the study area. The investigator believes that the findings of the study will reveal the phenomenon related to diffusion of innovation. These will be of special interest to the policy makers

and planners in formulating and redesigning the extension programs especially for brinjal production. The findings are expected to be helpful to the field workers of different nation building department and organizations to develop appropriate extension strategies for effective working with the rural people.

1.6 Limitation of the Study

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

- The study was confined in two villages of Betgari union under Gangachara upazila in Rangpur district.
- Ten characteristics of brinjal growers were selected for investigation.
- Population of the study includes only the heads of the farm families.
- The study was confined with the adoption of brinjal production technologies of three years.
- The investigator dependent on the data furnished
- Facts and figures collected by the investigator applied to the situation prevailing during the year 2020.

1.7 Assumption of the Study

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

- The respondent included in the sample was capable of providing proper answer to the question in the interview schedule.
- The researcher who acted as interviewer was adjusted to social and environmental condition of the study area. Hence the data collected by him and the respondents were free from bias.
- Views and opinions furnished by fanners included in the sample were

representative views and opinion of the whole population of the study.

- The responses furnished by the respondents were reliable i.e. they expressed the truth about their conviction and opinions.
- The respondents were more or less conscious about the use of brinjal production technologies
- The finding of the study will have general application to other parts of the country with similar, socio-economic, cultural and agro- ecological conditions of the study area.

1.8 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 seem contrary to, or in accord with common sense. It may prove to be correct or incorrect. In any event, however, it leads to an empirical test”.

The following hypothesis is formulated to explore the relationship between the dependent and independent variables. The major research hypothesis for the study is: “there is relationship between farmer’s adoption of brinjal production technologies and their selected characteristics”.

The research hypothesis was converted into null form for the purpose of statistical testing. The major null hypotheses state that “There is no relationship between farmer’s adoption of brinjal production technologies and their selected characteristics”.

1.9 Definition of key terms

A concept is an abstract of observed thing, events or phenomenon or in other words, it is a short hand representation of variety of facts (Wilkinson and Bhandarkar, 1977). A researcher needs to know the meaning and contents of every term that he uses. However, for clarity of understanding, a number of key

concepts/terms frequently used throughout the study defined are interpreted as follows: **Adoption:** According to Rogers (1995) "Adoption is a decision to make full use of an innovation as the best course of action available." When an individual takes up a new idea as the best course of action and practices it the phenomenon is known as adoption (Ray, 1991). In this study, adoption was defined as the phenomenon of taking up a new idea related to brinjal production and put it into practices by the brinjal growers of Gangachara upazila.

Farmers/Growers: The persons who were involved in farming activities are called farmers. They participated in different farm and community level activities like crops, livestock, fisheries, other farming activities etc.

Age: It means the age of a farmer that will refers to the period of time from his birth to the time of investigation.

Education: Education of an individual farmer was defined as the formal education received up to a certain level from an educational institute, (e.g School, College and University)

Family size: Family size refers to the total number of members including the respondent himself, spouse, children and other dependent, who live and eat together in a family unit.

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

Annual income: It means the total earning by the respondents himself and the members of his family from agriculture and other sources during a year. It is expressed in taka.

Training exposure: It refers to the total number of days attended by the farmers in his life to the various agricultural subject matter. Respondent received short/long term training in his entire life up to the date of interviewing

as provided by different organizations is considered for this variable.

Extension contact: It is referred to the respondents becoming accessible to the influence of different information media through different extension teaching methods.

Farming experience: Farming experience of a farmer is defined on the basis of his involvement in farming activities. It is expressed in year.

Organizational participation: Organizational participation of an individual refers to his participation in various or executive officer within a specified period of time.

Cosmopoliteness: It refers to the degree of which an individual's orientation is external to his own social system.

Problem faced: The term 'problem faced' refers to different problems faced by the farmers at the time of operating different activities.

Modern variety: Modem variety is those varieties which possess the quality for better performance in respect of yields, quality, and insect and disease resistance.

Extent of adoption: Ray (1991), defined extent of adoption as "The degree to which the farmer has actually adopted a practice".

Design of the study: It was designed to determine and describe the extent of adoption of brinjal production technologies by the farmers.

Overall adoption: It refers to the extent of adoption of overall selected technologies by a respondent.

Modern technologies: The term is used to those recommended practices by some competent authority through which better yield is achieved by various management and inputs. This term could be interchangeably with improved farm practices, selected farm practices, improved technologies etc.

Variable: A general indication in statistical research of characteristic that occurs in a number of individuals, objects, groups etc. and that can take on various values, for example the age of an individual.

Assumption: An assumption is "The supposition that an apparent fact or principle is true in the light of the available evidence" (Good, 1945).

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

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

Statistical test: A body of rules which help to take decision regarding accepting or rejection of the hypothesis is defined as test. In this study if a null hypothesis is rejected it is assumed that there is a relationship between the variables.

CHAPTER II

REVIEW OF LITERATURE

The researcher made an elaborate search of available literature for the research. Available literature was intensively reviewed to find out work in Bangladesh. The purpose of this chapter is to review literatures having relevance to the study. This chapter is divided into three sections; The **first** section deals with past research findings relating to extent of adoption of innovation, the **second** section deals with the past research findings relating to the relationships of farmers' adoption of innovations with their selected characteristics, and the **third** section deals with the conceptual framework of the study.

2.1. Past research findings relating to adoption of brinjal production technologies

Sarker (1997) studied the extent of adoption of improved potato cultivation practices by the farmers in Comilla district. The study revealed that more than half (55 percent) of the respondents had medium adoption compared to 23 percent having low adoption and 22 percent high adoption of improved potato cultivation practices.

Alam (1997) conducted an investigation on the adoption of HYV rice cultivation in Gazipur district. His study revealed that 40 percent had medium adoption, 32 percent had low and 28 percent had high adoption.

Ahaduzzaman (1999) conducted a study on the adoption of modem T. Aman technologies among the rice growers in sadarthana of Rangpur district. His study revealed that 51.81 percent had medium adoption, while 26.36 per cent had low and 21.81 percent had high adoption.

Rahman (1999) conducted investigation on adoption of balanced fertilizer by the farmers of Ishwargonj upazila in Mymensingh district. The study revealed that the majority (71 percent) of the respondents had medium adoption compared to 29 percent having below optimum adoption and there was no respondent at all who adopted the fertilizer at above optimum level.

Rahman (2001) conducted an investigation on knowledge, attitude and adoption of Aalok-6201 hybrid rice by the farmers of sadar upazila in Mymensingh district. The study revealed that the majority (75 percent) of the farmers had medium adoption while 18 percent and 7 percent had high and low adoption in Aalok-6201 hybrid rice cultivation respectively.

Hussen (2001) conducted an investigation on adoption of modem sugarcane cultivation practices by the farmers of Dewanganj upazila in Jamalpur district. The study revealed that about cent percent (91 percent) of the farmers had medium adoption compared to 7 percent having low adoption and only 2 percent having high adoption of modem sugarcane cultivation practices.

Sardar (2002) studied on “adopting of IPM practices by the farmers under PETRRA Project of RDRS”. He observed that majority (45.9 percent) of the farmers had medium, 38.3 percent had low and 15.8 percent had high adoption of IPM practices.

Islam (2002) conducted a study on adoption of modem agricultural technologies by the farmers of Sandwip. The study revealed that 69 percent of the fanners had medium adoption while 13 percent had low adoption and 18 percent had high adoption of modem agricultural technologies.

Aurangojeb (2002) studied on the extent of adoption of integrated farming technologies by the rural women in RDRS. He observed that the highest

percent of rural women (64%) used high level, (28%) of the women usedmedium level and only 8% used low level integrated homestead fanning technologies.

Rahman (2003) revealed that about half (47 percent) of the growers had medium adoption 44 percent had low and 1 percent had high adoption of year round homestead fruit cultivation practices.

Hassain (2003) found that majority (67 percent) of the Boro rice farmers gad medium adoption, 17 percent had low adoption and 16 percent high adoption of modem Boro rice cultivation practices.

Farmers will be cautious about leaping into full-scale adoption due to the risk that the innovation may prove to be a full-scale failure. Practices which are not trial able may still be adopted, but generally the adoption occurs only after substantial information-seeking, discussion, analysis, and reflection (Pannell *et al.,* 2006).

Pannell *et al.,* (2006) however, described this stage as the trial evaluation. They stressed that trials contribute substantially to both the decision-making and skill development aspects of the learning process. If small-scale trials are not possible (or not enlightening) for some reason, the opportunities for widespread adoption are greatly diminished.

2.2 Past research findings relating to the relationship of farmers extent of adoption of innovations with their selected characteristics

This selection presents a review of previous studies relating the association of the selected characteristics of the farmers and their adoption of innovations. Ten characteristics of the fanners were selected as independent variables of this study. The researcher made outmost efforts to search out

studies dealing with relationships of each of the selected characteristics with the adoption of technologies.

2.2.1 Age and adoption of innovation

Rahman (2001) conducted a study on knowledge, attitude and adoption of the farmers regarding Aalok 6201 hybrid rice in Sadar upazila of Mymensingh district. He found that age of the farmers had no significant relationship with their adoption regarding Aalok 6201 hybrid rice.

Sardar (2002) found that the age of the farmers had positive significant negative correlation with their adoption of IPM practices.

Hossain (2003) revealed that age of the farmers had an insignificant and positive relationship with their adoption of modern Boro rice cultivation practices.

Hossain (2006) revealed that age of the farmers had an insignificant and positive relationship with their adoption of HYV rice cultivation practices.

The personal characteristics that may influence the adoption decision of a farmer include age, gender, education, and level of farming experience (Deressa *et al.*, 2009

A study conducted at Gurudashpur upazila under Natore district in Bangladesh that showed a non-significant negative relationship of age on adoption of conservative agriculture (Poddar *et al.*, 2017).

2.2.2 Education and adoption of innovation

Hasan (1996) conducted a study on adoption of some selected agricultural technologies among the farmers as perceived by the frontline GO and NGO workers. He found that the education had no significant relationship with the perceived adoption of selected agricultural technologies.

Alam (1997) observed that the level of education of the farmer had a positive and significant relationship with the use of their improved farm practices.

Sarkar (1997) found that the level of education of the farmer had a positive significant relationship with their adoption of improved potato cultivation practices.

Hussen (2001) conducted a study on farmer's knowledge and adoption of modem sugarcane cultivation practices. He found that education of the growers had a positive significant relationship with their adoption of modem sugarcane cultivation practices.

Hossain (2003) concluded that education of the farmers had a significant and positive relationship with their adoption and modern Boro rice cultivation practices.

Hossain (2004) concluded that education of the farmers had a significant and positive relationship with their adoption and modern Boro rice cultivation practices.

Amin (2015) conducted a study at Rajapur upazila under Jhalokathi district in Bangladesh that showed a significant contribution of education on adoption of modern technologies by the rice cultivators.

Poddar *et al*., (2017) conducted a study at Gurudashpur upazila under Natore district in Bangladesh that showed a significant positive relationship of education on adoption of conservation agriculture by the farmers.

2.2.3 Family size and adoption of innovation

Ali (1993) in his study found that family size of the respondents had no significant relationship with STP adoption behavior of sugarcane farmers.

Haque (1993) in his study found that family size of growers had a negative and significant relationship with their adoption of improved practices in sugarcane cultivation.

Chowdhury (1997) observed that there was a positively significant relationship between family size and adoption of selected BINA technologies. Similar results were found by Islam (1993), Haque (1993), Basher (1993), Khan (1993), Pal (1995) and Sarkar (1997) in their respective studies.

Haque (2003) conducted a study on farmer's adoption of modem maize cultivation technologies. He observed that family size of the respondents had negatively insignificant relationship with their extent of farmer's adoption of modem maize cultivation technologies.

Islam (2005) conducted a study on adoption of pashupusti in cattle rearing at farmers' level. He observed that family size of the respondents had insignificant relationship with their extent of adoption of pashupusti in cattle rearing at farmers' level.

Poddar *at el.*, (2017) conducted a study at Gurudashpur upazila under Natore district in Bangladesh that showed no significant relationship of family size with adoption of conservation agriculture by the farmers.

2.2.4 Farm size and adoption of innovation

Khan (1993) observed that farm size was positively related to the adoption of insecticides.

Chowdhury (1997) observed that there was a positively significant relationship between farm size and adoption of selected BINA technologies. Similar results were found by Islam (1993), Haque (1993), Bashar (1993), Khan (1993), Pal (1995) and Sarkar (1997) in their respective studies.

Rahman (2001) conducted a study on knowledge, attitude and adoption of the farmers regarding Aalok 6201 hybrid rice in sadarupazila in Mymensingh district. He found that farm size of the farmers had a significant positive relationship with their adoption regarding Aalok 6201 hybrid rice.

Rahman (2001) conducted a study on knowledge, attitude and adoption of the farmers regarding Aalok 6201 hybrid rice in Sadar upazila of Mymensingh district. He found that farm size of the farmers had a significant and positive relationship with their adoption of Aalok 6201 hybrid rice.

Hossain (2004) concluded that farm size of the farmers had a significant and positive relationship with their adoption and modern Boro rice cultivation practices.

Amin (2015) conducted a study at Rajapur upazila under Jhalokathi district in Bangladesh that showed a non-significant contribution of farm size on adoption of modern technologies by the rice cultivators.

Islam (2007) conducted a study at Dhamrai upazila under Dhaka district in Bangladesh that showed a significant relationship of farm size on adoption of BRRI dhan49 production technologies.

Poddar *et al*., (2017) conducted a study at Gurudashpur upazila under Natore district in Bangladesh that showed no significant relationship of farm size with adoption of conservation agriculture by the farmers.

2.3.5 Annual income and adoption of innovation

Pal (1995) in his study found a positive and significant relationship between income of the farmers and their adoption of recommended practices in sugarcane cultivation.

Chowdhury (1997) found that the annual income of the respondents had a positively significant relationship with their adoption of selected BINA technologies.

Hussen (2001) conducted a study on farmer's knowledge and adoption of modem sugarcane cultivation practices. He found that annual income of the growers had apositive significant relationship with their adoption of modem sugarcane cultivation practices.

Hussen (2001) found that the annual income had positive significant relationship with their adoption of modern sugarcane cultivation practices.

Rahman (2001) conducted a study on knowledge, attitude and adoption of the farmers regarding Aalok 6201 hybrid rice in Sadar upazila of Mymensingh district. He found that annual income of the farmers had a significant and positive relationship with their adoption of Aalok 6201 hybrid rice.

Aurangozeb (2002) in his study found a positive significant relationship between annual income and adoption of integrated homestead farming technologies.

Aurangozeb (2002) observed that there was a positive relationship between annual income from field crop and adoption of integrated homestead farming technologies.

Hossain (2003) revealed that annual income of the farmers had a significant relationship with their adoption at modern Boro rice cultivation practices.

Hossain (2006) revealed that annual income of the farmers had a significant relationship with their adoption at selected HYV rice cultivation practices.

Poddar *et al*., (2017) conducted a study at Gurudashpur upazila under Natore district in Bangladesh that showed no significant relationship of family income with adoption of conservative agriculture by the farmers.

2.2.6 Farming experience and adoption of innovation

Chowdhury (1996) conducted a study in Nowabgonj, Dhaka on the factors affecting adoption behavior of Boro rice growers. He reported that farming experience significantly influenced farmers in accepting production technology.

Hussen (2001) found that the farming experience had positive significant relationship with their adoption of modern sugarcane cultivation practices.

Aurangozeb (2002) observed that there was significant relationship between farming experience and adoption of integrated homestead farming technologies.

Hossain (2003) revealed that farming experience of the farmers had a significant and positive relationship with their adoption of modern Boro rice cultivation practices.

Hossain (2004) revealed that farming experience of the farmers had a in significant and negatively relationship with their adoption of modern Boro rice cultivation practices.

2.2.7 Extension contact and adoption of innovation

Roy (1997) conducted a study in Magura sadar thana on factors associated with the extent of adoption of IPM practices. He found that extension contact had positive relationship with the extent of adoption of IPM practice.

Sarkar (1997) observed a positive and significant relationship between extension contact and adoption of improved potato cultivation practices.

Rahman (1999) found that extension contact of the boro rice farmers had a significant positive relationship with their adoption of balanced fertilizers in boro rice cultivation.

Sardar (2002) concluded that the extension contact had positively significant relationship with their adoption of IPM practices.

Haque (2003) concluded that extension contact of the farmers had a significant positive relationship with their adoption of modern maize cultivation technologies.

Hossain (2004) concluded that extension contact of the farmers had a significant positive relationship with their adoption of modern Boro rice cultivation practices.

Poddar *et al*., (2017) conducted a study at Gurudashpur upazila under Natore district in Bangladesh that showed positive significant relationship of extension contact with their adoption of conservation agriculture by the farmers.

2.2.8 Training and adoption of innovation

Hossain (1999) found positive significant relationship between training experience of the farmer and their adoption of fertilizer and also observed no relationship with adoption pesticide.

Aurangozeb (2002) observed that there was significant relationship between training experience and adoption of integrated homestead farming technology.

Sardar (2002) conducted a study on adoption of IPM practices by the farmers under PETRRA projects of RDRS. He found that training experience of the farmers had a positive significant relationship with their adoption of IPM practices.

Rahman (2003) revealed that the highest proportion (63 percent) at the farmers had low training experience as compared to 22 percent medium innovativeness and 15 percent very low innovativeness.

Islam (2005) conducted a study on adoption of pashupusti in cattle rearing

at farmers' level. He observed that training orientation of the respondents had negatively significant relationship with their extent of adoption of pashupusti in cattle rearing at farmers' level.

2.2.9 Organizational participation and adoption of innovation

Hossain (1983) conducted a research in Bhabakali union of Mymensingh district to examine the relationships of the farmer's characteristics with their adoption of HYV of rice as transplanted Amon rice and no relationships between participation of rice cultivators and their adoption of HYV rice.

Haque (1984) conducted a study in Jessore district on the adoption of improved practices in sugarcane cultivation. He reported that organizational participation of the growers significantly influenced their adoption of the improved practices.

2.2.10 Cosmopoliteness and adoption of innovation

Pal (1995) conducted a research study on the adoption of recommended sugarcane cultivation practices by the farmers. He observed that the cosmopoliteness of the farmers had significant positive relationship with their adoption of recommended sugarcane cultivation practices.

Chowdhudy (1997) conducted a study on the adoption of selected BIN A technologies by the farmers of Boyra union in Mymensingh district. He found that there was no significant relationship between farmers cosmopoliteness and their composite adoption of selected BINA technologies.

Hossain (1999) found a positive significant relationship between cosmopoliteness of the farmers and their adoption of improved practices.

Rahman (2001) conducted a study on knowledge, attitude and adoption of the farmers regarding Aalok 6201 hybrid rice in Sadarupazilla of

Mymensingh district. He found that cosmopoliteness of the farmers had a significant and positive relationship with their adoption regarding Aalok 6201 hybrid rice.

Aurangozeb (2002) conducted a study on adoption of integrated farming technologies by the rural women in RDRS. He found that there was a positive relationship among cosmopoliteness and their adoption of integrated farming technologies.

Haque (2003) conducted a study on farmer's adoption of modem maize cultivation technologies. He observed that cosmopoliteness of the respondents had insignificant relationship with their extent of farmer's adoption of modem maize cultivation technologies.

Mahmud (2006) found that the Cosmopoliteness of the farmers had significant positive correlation with their adoption of modern wheat cultivation technologies.

Poddar *et al*., (2017) conducted a study at Gurudashpur upazila under Natore district in Bangladesh that showed positive significant relationship of organizational participation with adoption of conservative agriculture by the farmers.

2.3 The Conceptual Framework of the Study

Review of the past studies and literature indicated various factors influenced the adoption of brinjal production technologies by the farmers. It is sometimes difficult to deal with all the factors in a single study.

Related literature, discussion with the experts and research fellows in the relevant field and available resources at hand helped the researcher in selecting ten variables which might have relationship with adoption of brinjal production technologies. On these consideration following conceptual framework was drawn for the study.

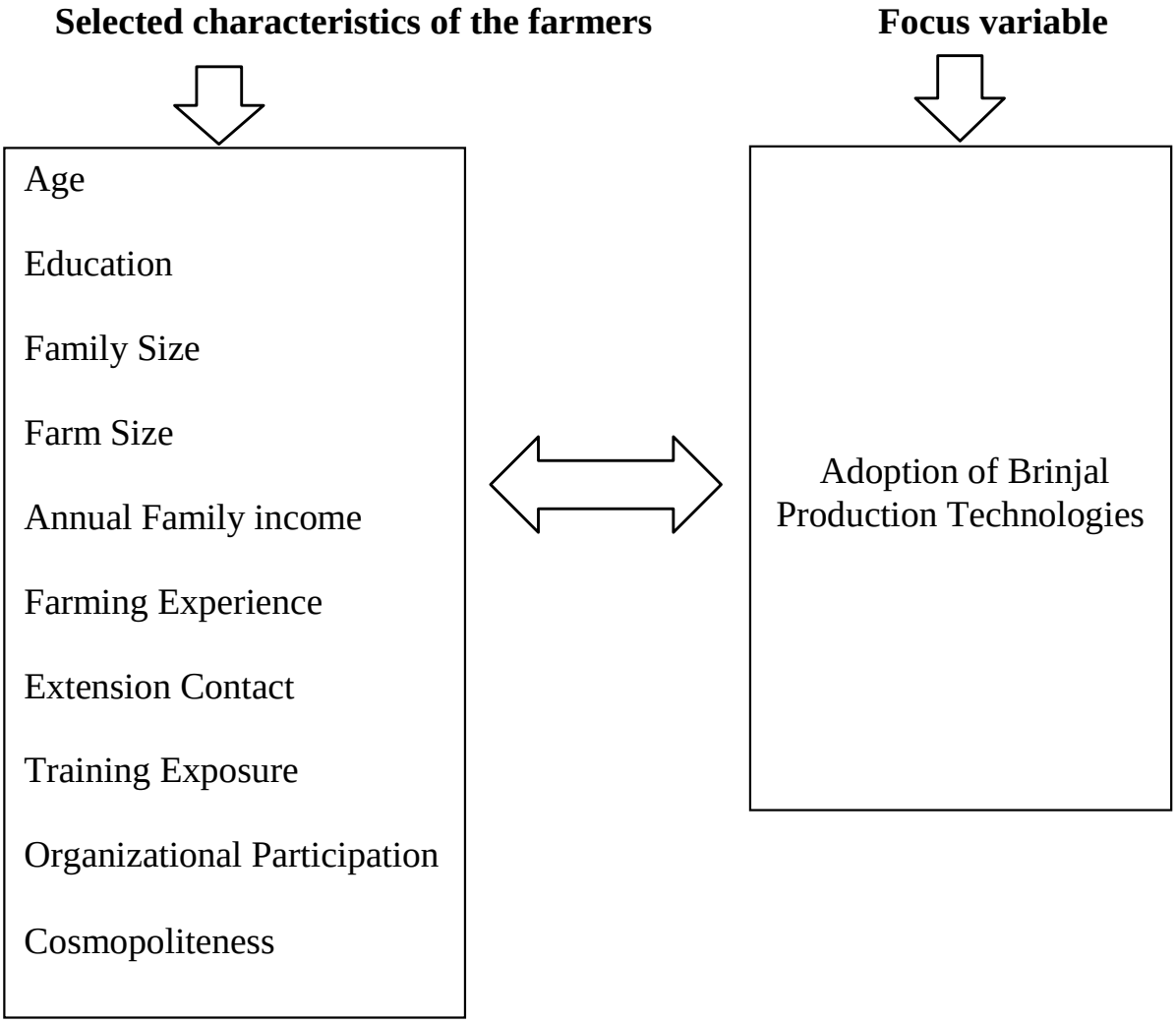

Figure: 2.1: Conceptual framework of the study.

CHAPTER III
METHODOLOGY

The methodology used in conducting any research is critically important and deserves careful consideration. Methodology enables the researcher to collect valid and reliable information and to analyze the same properly to arrive at correct decisions. Keeping this in view, the researcher took utmost care in using proper methods in all the aspects of this investigation. The methods and procedures followed in this study have been described in this chapter.

3.1 Locale of the study

The study was conducted in two villages namely Purbo Khaprikhal and Poschim Khaprikhal in Gangachara upazila in Rangpur district. Gangachara upazila is 18 km away from Rangpur Sadar. The density of population is 890 per sq. km. Main occupations were Agriculture 85%, business 10% and others 5%. Paddy, wheat, sugarcane, potato and onion and different types of crops and vegetables are cultivated in the area. NGO whose activities operationally very important in those village are ASA, BRAC etc. The two villages are 13 kilometers away from upazila headquarter. Brinjal is the famous vegetable of the farmers of this union. A map of Rangpur district showing Gangachara upazila Figure 3.1

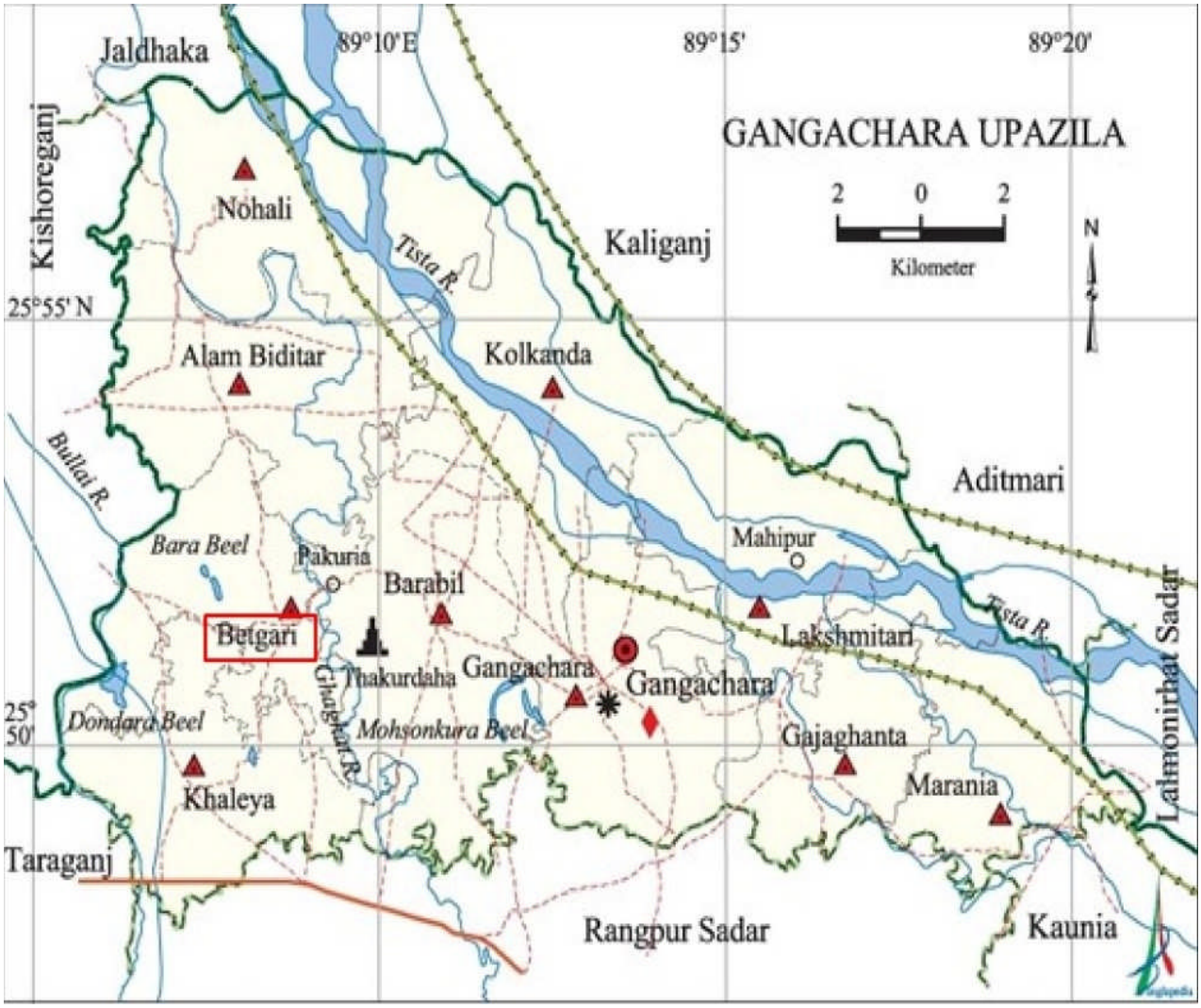

Fig: A map of Rangpur district showing Gangachara upazila

3.2 Design of the Study

The design of the study was a descriptive survey research. It was designed to determine and describe the extent of adoption of brinjal production technologies.

3.3 Population and Sampling Design

Out of ten unions of Gangachara Upazila, Betgari union was selected purposively. From this 1 no. Betgari union two villages- Purbo Khaprikhal and Poschim Khaprikhal were selected purposively also. Then two list of brinjal growers of these two villages were made by the help of the Sub-Assistant Agricultural Officer (SAAO). The list comprised a total of 500 farmers constituting the population of this study. Twenty percent (20%) of the population was randomly selected as sample of population by using a Calculator of Random Numbers. Thus, the total sample size of this study area was about one hundred (100) farmers. In addition to that, the percent of the population was selected randomly and proportionately from each of the selected village. Thus, the additional sample, so drawn stood 10 farmers, which were included in the reserve list. In case, the individuals included in the original samples were not available or not found suitable at the time of data collection, the farmers of the reserve list were used for the purpose. The distribution of the farmers included in the population, sample and those in the reserve list appears in Table 3.1

Table 3.1. Distribution of population and sample of the respondents in two selected villages of Gangachara upazila

Union	Village	Target Population	Sample	Reserve List
Betgari	Purbo Khaprikhal	276	52	5
	Poschim Khaprikhal	224	48	5
Total		**500**	**100**	**10**

3.3 Selection of the Variables of the Study

Ezekiel and Fox (1959) stated a variable is any characteristics which can assume varying or different values in successive individual cases. The researcher keeping all these in mind took adequate measurement in selecting the dependent and independent variables of the study. Before setting the variable of the study, the researcher himself visited the study area and talked to the farmers and he was able to observe the selected characteristics of the farmers (in the study area) which might have influence on the adoption of brinjal production technologies. Based on this experience, review of literature, discussion with the relevant experts and academicians and also with the research supervisor, the researcher selected the variables of the study.

3.5.1.1 Age:

Age of the farmer referred to the period of time his birth to the time of interviewed. It was measured by counting the actual years from his birth to the time of interview on the basis of his statement. It was measured in terms of actual years. One score was assigned for each and every complete year of a respondent's age.

3. 5.1.2 Education

Education was measured by the number of classes passed by an individual. 0 score was assigned for illiterate people, 0.5 for the people who can sign only and a score 1 was assigned for each year of successful schooling. For example, if a respondent passed class V, his education score was given as 5.

3. 5.1.3 Family size

Family size of brinjal growers referred to the total number of members in his/her family including the respondent himself, his wife, sons & daughters and other members fully or partially dependent on him.

3. 5.1.4 Farm size

Farm size was estimated on the basis of the cultivated area either owned by a farmer or cultivated on share cropping, the area being estimated in terms of full benefit to the respondents. The farm size of a respondent was measured in hectares using the following formula:

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

Where,

FS = Farm size

A = Homestead area

B = Own land under own cultivation

C = Land taken from others on lease

D = Land given to others on borga

E = Land taken from others on borga

F = others (pond, fruits garden etc.

3.5.1.5 Annual family income

The annual income of a farmer is an important indicator of how much he can invest in his farming business. Annual income means the total earning in thousand taka by the respondents himself and the members of his family from agriculture, and other sources during a year. It was expressed in thousand taka. The value of all the agriculture products encompassing crops, livestock, poultry, fisheries, fruits and vegetables etc. were taken into consideration for calculating annual income. Earning from each respondent and other member of his family from non-agriculture source (service, business, agricultural labor and others) was also determined by asking question to the respondent farmer. Annual income of individual was expressed in 1,000 Taka. A score of one was given for each TK. 1,000 to compute the annual income scores of the respondents.

3.5.1.6 Farming experience

Farming experience of a farmer was defined on the basis of his involvement in farming activities. Score of 1 was assigned for one year of farming activities. Score 2 for two years and so on.

3.5.1.7 Extension contact

This term refers to one's becoming accessible to the influence of extension program through different communication media and sources. An extension contact scores was computed for each respondent on his/her extent of contact with 13 selected media. Each respondent was asked to mention the frequency of his contact with each of the 13 selected media. Scores were assigned as 0 for no contact, 1 for rarely, 2 for occasionally, 3 for often and 4 for frequently of the contact respectively. Respondent's extension contact score was obtained by adding the weights for his responses to all the sources listed in the instrument. Extension media contact score of the

respondents could range from 0 to 39, where 0 indicating no extension media contact and 39 indicating highest extension media contact.

3.5.1.8 Training exposure

Training exposure was counted by the total number of days a respondent attended in training course. Respondent received short/long term training in his entire life up to the date of interviewing as provided different organizations was considered for this variable. In this study, training exposure score was computed for each respondent's on the basis of his responses.

3.5.1.9 Organizational participation

Organizational participation of the respondent was measured in two-dimension status of his participation and duration of participation in different organizations. Organizational participation score was determined by the following formula: Organizational participation score = 01x 1 + 0 2 x 2 + 0 3 x 3 Where,

1= Total duration (year) of participation as general member

2=Total duration (year) of participation as executive committee member

3=Total duration (year) of participation as an executive committee officer

Organizational participation score of the respondent was computed on the basis of his participation in different organizations as shown in item 9 on the interview schedule. Scores were assigned for participation of a respondent in an organization in the following manner.

Nature of participation	Score assigned
No participation	0
General member	1
Executive member	2
Executive Officer	3

Organization participation score of a respondent was determined by adding his scores for participation in all organizations. Thus, the organizational participation score could range from 0-9, 0 indicated no participation and 9 indicated high participation.

3.5.1.10 Cosmopoliteness

Cosmopoliteness scores of the respondents were computed on the basis of respondents' visit to eight different places external to his own social system and as shown in item number 10 in the interview schedule. The respondents indicated whether they visited those places frequently, occasionally, rarely and not at all. Weights were assigned to these visits as 3, 2, 1 and 0 respectively. A respondent's cosmopoliteness score was obtained by adding the weights for his visits to all the places listed in the instrument. Cosmopoliteness score could range from 0 to 30 where 0 indicating no cosmopoliteness and 30 indicating highest cosmopoliteness.

3.5.2 Measurement Adoption of selected brinjal production technologies

Adoption of selected brinjal production technologies was measured by computing adoption quotient. It was calculated by asking farmers used

- Recommended brinjal variety
- Use of line transplanting method
- Recommended doses of fertilizer
- Use of IPM (Integrated Pest Management) practice

Adoption of selected brinjal production technologies was measured by Mean Adoption Quotient as the following formula suggested by Bhuiyan (2005)

$$AQ = \frac{\sum u/p}{y \times n} X\ 100$$

Where,

u = Use of area

P = Potential of area

y = Years of use of technologies use

n = Number of technologies

Thus adoption of selected brinjal production technologies score of a respondent could range from 0-100, while 0 indicating no adoption and 100 indicating highest adoption.

3.4 Instruments for Data Collection

Data were collected personally by the researcher himself through face to face visit to all the selected farmers of Purbo Khaprikhal and Poschim Khaprikhal villages of Gangachara upazila under Rangpur district to obtain valid and pertinent information. The researcher made all possible efforts to explain the purpose of the study to the farmers. In order to collect relevant information, a previously structured interview schedule was used as data gathering device in keeping the objectives in mind. Both open and closed form questions were used in collecting data. Simple and direct questions were included in the schedule to ascertain the variables. The interview schedule was pretested with ten farmers in actual field situation before finalizing the same for collection of data. On the test experiences,

necessary additions, corrections and modifications of the schedule were done. Valuable suggestions and comments were received from the research supervisor and co-supervisor. Appropriate scales were developed to operationalize some selected characteristics of the brinjal growers. The interview schedule was prepared in Bangla. A copy of the interview schedule in English version is presented in the Appendix-B.

3.5 Collection of Data

Data for this study were collected through personal interview by the researcher himself. All possible efforts were made to explain the purpose of the study to the respondents in order to get valid and pertinent information from them. Interviews were usually conducted with the respondents in their homes. While starting interview with any respondent the researcher took all possible care to establish rapport with him so that he did not hesitate to furnish proper responses to the questions and statements in the schedule. However, if any respondent failed to understand any question the researcher took care to explain the issue. He received excellent co-operation from the respondents and others concerned during the time of interview. The entire process of collecting data took place during 10 August to 10 September 2020.

3.6 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 unit. All the individual responses to questions of the interview schedule were transferred to master sheet to facilitate tabulation, categorization and organization to the objective of the study. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form.

Data was transferred to coding sheet with numerical scores given to each question. Simple statistics like frequency, percentage, range, mean, standard deviation and rank order were used to perform the data analysis. Correlation coefficients were to determine the relationships between each of the selected characteristics of the farmers and adoption of brinjal production technologies.

3.7 Statement of Hypothesis

Defined by Goode and Hatt (1952), "A hypothesis is a proposition which can be put to a test to determine its validity. It may be true or false, it may seem contrary to, or in accord with common sense. However, it leads to an empirical test". According to Kerlinger (1973), a hypothesis is a conjectural statement of the relation between two or more variables. Hypotheses are always in declarative sentence form and they relate either generally or 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.

3.8 Research hypothesis

The following research hypotheses were put forward to know the relationships between each of the ten selected characteristics of the brinjal growers and their adoption of brinjal production technologies. Each of the ten selected characteristics of the brinjal growers has significant relationships with their adoption of brinjal production technologies.

3.8.1 Null hypothesis

For the statistical test of the research hypotheses they were converted into null form. The null hypotheses were as follows. "There is no relationship between each of the selected characteristics of the brinjal growers and their adoption of brinjal production technologies". The selected characteristics

were age, education, family size, farm size, annual income, farming experience, extension media contact, training exposure, organizational participation, and cosmopoliteness. If the null hypothesis is rejected on the basis of a statistical tests, it is assumed, that there is a relationship between the concerned variables.

3.9 Statistical Analysis

The collected data were compiled, coded, tabulated and analyzed in accordance with the objectives of the study. Qualitative data were quantified by means of suitable scoring techniques. The statistical measures such as range, mean, standard deviation, percentage distribution and rank order were used to describe both the independent and dependent variables. Tables were also used in presenting data for clarity of understanding. In order to explore the relationships between each of the selected characteristics of the growers with their adoption of brinjal production technologies, the Pearson's Product Moment Correlation Co-efficient was computed. Five percent (0.05) level of significance was used as the basis of rejecting any null hypothesis. If the computed value of co-efficient of correlation "r" was equal to or greater than tabulated value at designated level of significance for the relevant degrees of freedom, the null hypothesis was rejected and it was concluded that there was a significant relationship between the concerned variables. However, when the calculated value of co-efficient of correlation was found to be smaller than the tabulated value at the designated level of significance for the relevant degrees of freedom, it was concluded that the null hypothesis was accepted and hence, there was no relationship between the concerned variables. Co-efficient values significant at 0.05 level was indicated by single asterisk (*) and at 0.01 level by double asterisks (**).

CHAPTER IV

RESULT AND DISCUSSION

In this Chapter, the findings of the study and interpretation of the results have been presented. Data obtained from respondents by interview were measured, analyzed, tabulated and statistically treated according to the objectives of the study. The **first** section deals with the selected characteristics of the brinjal growers, the **second** section deals with the extent of adoption of brinjal production technologies by the farmers, the **third** section, relationships between the extent of adoption of brinjal production technologies of the farmers and their characteristics have been discussed.

4.1 Selected Characteristic of the farmers

This section deals with the classification of the farmers according to their various characteristics. Behavior of an individual is largely determined by his characteristics. These characteristics of an individual contribute to a great extent in the matter of shaping of his behavior. In this section the findings on the farmer's ten selected characteristics have been discussed. The selected characteristics are (i) age, (ii) education, (iii) family size, (iv) farm size, (v) annual family income, (vi) farming experience, (vii) extension contact, (viii) training exposure, (ix) organizational participation and (x) cosmopoliteness. Range, mean and standard deviations of these characteristics of the brinjal growers are described in this section.

4.1.1 Age

The age of the farmers was found to range from 25 to 74 years, the average being 44.58 years and the standard deviation was 8.73. On the basis of their age, the farmers were classified into three categories 'young aged' (up to 35),

'middle aged' (36-50) and 'old aged' (above 50). The categories and distribution of the farmers are shown in Table 4.1.1

Table 4.1.1 Distribution of the farmers according to their age

Categories	Farmers		Mean	SD
	Number	Percent		
Young aged (up to 35)	27	27%	44.58	8.73
Middle aged (36-50)	56	56%		
Old aged (>50)	17	17%		
Total	**100**	**100%**		

Table 4.1.1 showed that majority (56%) of the farmers were middle aged as compared to 27 percent being young and 17 percent being old. More than four-fifths 83% of the farmers fell in the young to middle aged category. This indicates that decision making in relating of farming aspects in the study area could have considerable influence by young and middle aged farmers. Therefore, it was expected that the extent of adoption of brinjal production technologies would be reflected more in the young and middle aged farmers compared to old aged farmers.

4.1.2 Education

The education score of the farmers ranged from 0-14. The average was 3.62 and the standard deviation was 4.21. On the basis of their educational scores, the brinjal growers were classified into four categories, namely; "illiterate' (0), can sign only" (.5), 'primary' (1-5) 'secondary'(6-10) and 'above secondary' (above 10). The distribution of the fanners according to their education is shown in Table 4.1.2

Table 4.1.2 Distribution of the farmers according to their education

Category	Farmers		Mean	SD
	Number	Percent		
Illiterate (0)	18	18%	3.62	4.21
Can sign only(0. 5)	24	24%		
Primary Level (1- 5)	29	29%		
Secondary Level (6-10)	21	21%		
Higher level (>10)	8	8%		
Total	**100**	**100%**		

From the Table 4.1.2, it was observed that the majority (24 percent) of the brinjal farmers can sign only and 18 percent were illiterate where as 29 percent were primary educated, 21 percent farmers were secondary educated and 8 percent were higher educated. The findings indicate that education of and individual is likely to be more receptive to the modem facts and ideas; they have much mental strength in deciding of a matter related to problem solving.

4.1.3 Family size

The family size of the brinjal farmers ranged from 2 to 10 members. The average was 4.83 with a standard deviation of 1.58. On the basis of their family size, the farmers were classified into the three categories: "small family" (up to 3), "medium family" (4-7) and "large family" (above 7). Table 4.1.3 contains the distribution of the brinjal growers according to their family size.

Table 4.1.3 Distribution of farmers according to their family size

Categories	Farmers		Mean	SD
	Number	Percent		
Small family (up to 3)	14	14%	4.83	1.58
Medium family (4-7)	73	73%		
Large family (>7)	13	13%		
Total	**100**	**100%**		

Table 4.1.3 indicates that the highest proportion (73 percent) of the brinjal growers had medium family of 4 to 7 members compared to 13 percent had large family. Thus 87 percent of the brinjal farmers had medium to large families. The average family size of 4.83 of the farmers.

4.1.4 Farm size

The farm size of the farmers varied from 0.25 to 2.94 hectares. The average farm size was 0.69 hectare with a standard deviation of 0.42. The farmers were classified into the following three categories based on their farm size: "marginal farm" (up to 0.3 ha), "small farm" (0.3 - 1.0 ha) and "medium farm" (1.0 -3.0). The distribution of the farmers according to their farm size is shown in Table 4.1.4.

Table 4.1.4 Distribution of the farmers according to their farm size

Categories	Farmers		Mean	SD
	Number	Percent		
Marginal farm(up to 0.3 ha)	8	8%	0.69	0.42
Small farm(0.3-1.0 ha)	79	79%		
Medium farm(1-3.0 ha)	13	13%		
Total	**100**	**100%**		

More than forth-fifths (79 percent) of the farmers possessed small farms compared to above 13 percent of them having medium farms and only 8 percent marginal farms. Thus, most 92 percent of the farmers were in the categories of small and medium farm size. The average farm size of the farmers was 0.69 ha.

4.1.5 Annual family income

The annual income of the farmers ranged from 15.40 thousand Tk. to 195.80 thousand Tk. the mean being 72.63 thousand Tk. and standard deviation was 36.34 thousand tk. Based on their annual income scores, the farmers were classified into three categories: "low income" (up to 35), "medium income" (36 to 100.00) and "high income" (above 100). The distribution of the farmers according to their family annual income is shown in Table 4.1.5

Table 4.1.5 Distribution of the farmers according to their annual family income

Categories	Farmers		Mean	SD
	Number	Percent		
Low income (Up to 35)	14	14%	72.63	36.34
Medium income (36 - 100.00)	68	68%		
High income (Above 100)	18	18%		
Total	**100**	**100%**		

From the Table 4.1.5, it was observed that the highest portion (68 percent) of the respondents had medium income, while 14 percent farmers had low income and 18 percent had high income. Most of the farmers of the study area had low to medium. The average income of the farmers of the study area was much higher than national average income of the country. This

might be due to the fact that the farmers of the study area were not engaged in only agriculture. They earned from other sources such as service, business etc.

4.1.6 Farming experience

Farming experience of the respondents ranged from 2 to 26 years with an average of 7.35 and the standard deviation of 3.64. Based on the farming experience, the farmers were classified into three categories as shown in Table 4.1.6

Table 4.1.6 Distribution of the farmers according to their farming experience

Categories	Farmers		Mean	SD
	Number	Percent		
Low experience (up to 4)	22	22%	7.35	3.64
Medium experience (5-10)	62	62%		
High experience (above 10)	16	16%		
Total	**100**	**100%**		

From the Table 4.1.6, it was observed that majority (62%) of the farmers had medium farming experience while 22% had low farming experience and 16% had high farming experience of the study area.

4.1.7 Extension contact

The computed extension contact scores of the farmers ranged from 16 to 37 against the possible range of 0-39, with an average of 26.0 and a standard deviation of 5.0. On the basis of their extension contact scores, the farmers were classified into three categories: “low extension contact" (up to 21), "medium extension contact" (22-31) and "high extension contact" (above

31). The distribution of the farmers according to their extension contact is shown in Table 4.1.7.

Table 4.1.7 Distribution of the farmers according to their extension contact

Categories	Farmers		Mean	SD
	Number	Percent		
Low extension contact(up to 21)	19	19%	26.0	5.0
Medium extension contact(22-31)	64	64%		
High extension contact(>31)	17	17%		
Total	**100**	**100%**		

This table 4.1.7 indicates that majority (64 percent) of the farmers had medium extension contact, while 17 percent of them had high contact. The proportion of the farmers having low extension contact was only 19 percent. Thus, about four-fifths 81 percent of the farmers had medium to high extension contact.

4.1.8 Training exposure

Training exposure plays an important role in motivating the farmers in adoption of modern technologies. Training exposure of the farmers range from 0-1 with an average 2.25 and the standard deviation of 3.85.

Table 4.1.8 Distribution of the farmers according to their training exposure

Categories	Farmers		Mean	SD
	Number	Percent		
No training response	62	62%	2.25	3.85
Training response	38	38%		
Total	**100**	**100%**		

Data presented in above Table 4.1.8, indicate that the most (38 percent) of the farmers had training exposure and 62 percent of the farmers had no training exposure. Training exposure was helpful for the farmers to better understanding of the selected brinjal production technologies.

4.1.9 Organizational participation

Organizational participation scores of the farmers ranged from 0 to 13 with an average of 4.62 and a standard deviation of 3.73. On the basis of their organizational participation scores, the farmers were classified into four categories: "no participation" (0), "low participation" (1-4), "medium participation" (5-8) and “high participation” (9-13). The distribution of respondents according to their organizational participation is shown in Table 4.1.9

Table 4.1.9. Distribution of the farmers according to their organizational participation

Categories	Farmers		Mean	SD
	Number	Percent		
No participation (0)	22	22%	4.62	3.73
Low participation (1-4)	36	36%		
Medium participation (5-8)	26	26%		
High participation (9-13)	16	16%		
Total	**100**	**100%**		

From the above 4.1.9, table it was observed that majority (36 percent) of the farmers had low organizational participation. A mentionable (22 percent) number of farmers had no organizational participation, while 26 percent had medium and 16 percent had high participation.

4.1.10 Cosmopoliteness

Cosmopoliteness score of the farmers ranged from 11 to 29 with an average of 21.62 and a standard deviation of 3.85 against the possible range of 0 to 30. On the basis of their cosmopoliteness scores, the farmers were classified into three categories: "low cosmopolite" (0-19), "medium cosmopolite" (20-26) and "high cosmopolite" (above 26). The distribution of the farmers according to their cosmopoliteness is shown in Table 4.1.10.

Table 4.1.10. Distribution of the farmers according to their cosmopoliteness

Categories	Farmers		Mean	SD
	Number	Percent		
Low cosmopolite (up to 19)	21	21%	21.62	3.85
Medium cosmopolite (20-26)	65	65%		
High cosmopolite (>26)	14	14%		
Total	**100**	**100%**		

Data presented in the Table 4.1.10, show that majority (65 percent) of the farmers were "medium cosmopolite" compared to 21 percent of them being "low cosmopolite" and 14 percent "highly cosmopolite". Thus, overwhelming majority (86 percent) of the farmers were medium to low in terms of their cosmopoliteness.

4.2 Adoption of Selected brinjal production technologies

There are many technologies in brinjal production. In this study only four important dimensions were taken into consideration for determining the adoption of brinjal production technologies.

The four dimensions were:

- Recommended brinjal varieties
- Use of line transplanting method
- Recommended doses of fertilizer
- Use of IPM practices for controlling pests and disease of brinjal

According to the measurement procedure of adoption of selected brinjal production technologies mentioned in methodology chapter. The adoption of four brinjal production technologies of the farmers ranged from 28 to 72 against the possible score of 0 to 100. The average adoption was 46.58 with a standard deviation of 11.78. Based on the adoption score, the farmers were classified into three categories: "low adoption" (up to 36), medium adoption" (37-60) and "high adoption" (above 60).

Table 4.2 Distribution of the farmers to their adoption of brinjal production technologies

Categories	Farmers		Mean	SD
	Number	Percent		
Low adoption (up to 36)	18	18%	46.58	11.78
Medium adoption (37 - 60)	67	67%		
High adoption (above 60)	15	15%		
Total	**100**	**100%**		

Data contained in Table 4.2 indicate that the highest proportion (67 percent) of the farmers had medium adoption as compared to (15 percent) high adoption and 18 percent low adoption. Data also revealed that majority (82 percent) of the farmers of the study area had medium to high level of adoption of brinjal production technologies.

4.3 Relationships between the selected characteristics of the brinjal growers and their adoption of brinjal production

Coefficient of correlation was computed in order to explore the relationship between the selected characteristics of the brinjal growers and their adoption of selected brinjal production technologies.

To explore the relationships, Pearson's product moment correlation co-efficient (r) has been used to test the hypothesis concerning the relationships between two variables. Five percent, one percent level of significance was used as the basis of acceptance or rejection of a hypothesis. The summary of the results of the correlation co-efficient between the selected characteristics of the growers and their adoption of brinjal production technologies is shown in Table 4.4

Table 4.3 Co-efficient of correlation of the selected characteristics of the respondents and their adoption of brinjal production technologies

Focus variable	Selected characteristics of farmers	Computed value of "r"	Table value of "r" at 108 degree of freedom	
			0.05%	0.01%
Adoption of improved practices in Brinjal cultivation	Age	0.118^{NS}	0.196	0.226
	Education	0.327**		
	Family size	0.216*		
	Farm size	0.729**		
	Annual income	0.619**		
	Farming experience	0.206*		
	Extension contact	0.220*		
	Training exposure	0.278**		
	Organizational participation	0.222*		
	Cosmopoliteness	0.068 ^{NS}		

NS = Non significant, *= Significant at 0.05 level of probability,

**= Significant at 0.01 level of probability

4.3.1 Relationship between age of the brinjal growers and their adoption of brinjal production technologies

The relationship between age of the brinjal growers and their adoption of brinjal production technologies was examined by testing the following null hypothesis: ***"There is no relationship between age of the brinjal growers and their adoption of brinjal production technologies".*** As shown in the Table 4.4 the co-efficient of correlation between the concerned variables was computed and found to be 'r' = 0.118^{NS} which led to the following observation.

- Firstly, the relationship showed a positive trend.
- Secondly, a very low relationship was found to exist between the two variables.
- The computed value of 'r' (0.118^{NS}) was smaller than the table value (r = 0.196) with 98 degrees of freedom at 0.05 level of probability.
- Hence, the concerned null hypothesis was accepted.
- The correlation co-efficient between the two concerned variables was not significant.

The findings imply that the age of the brinjal growers had no influence on their adoption of brinjal production technologies. Islam (1993), Kher (1992) and Sarkar (1997) observed the similar findings in their studies.

4.3.2 Relationship between education of the brinjal growers and their adoption of brinjal production technologies

The relationship between the education of the brinjal growers and their adoption of brinjal production technologies was examined by testing the following null hypothesis: **"**There is no relationship between education of the brinjal growers and their adoption of brinjal production technologies" The co-efficient of correlation between the concerned variables was found to be 'r'= 0.327** as shown Table 4.4. This led to the following

observations the relationship between two variables under consideration:

- The relationship showed a tendency in the positive direction between the concerned variables.
- The relationship between the concerned variables was low.
- The computed value of 'r' (0.327**) was greater than the table value (r = 0.196) with 98 degrees of freedom at 0.01 level of probability.
- The concerned null hypothesis was rejected.
- The correlation co-efficient between the two concerned variables was significant.

The findings indicate that education of the farmers had significant relationship with their adoption of brinjal production technologies. Haque (1982) found no relationship between farmer's education and perception of effectiveness of Television as a medium of agricultural information.

4.3.3 Relationship between family size of the brinjal growers and their adoption of brinjal production technologies

The relationship between family size of the farmers and their adoption of brinjal production technologies, the following null hypothesis was tested "**There is no relationship between family size of the brinjal growers and their adoption of brinjal production technologies".** The co-efficient of correlation between the concerned variables was found to be r= 0.216* as shown in Table 4.4 this led to the following observations regarding the relationship between the two variables under consideration:

- The relationship showed a tendency in the positive direction between the concerned variables.
- The relationship between the concerned variables was low.
- The computed value of "r" (0.216*) was greater than the table value (r= 0.196) with 98 degrees of freedom at 0.05 level of probability.

- The co-efficient of correlation between the concerned variable was significant at 0.05 level of probability.
- The null hypothesis could be rejected.

Based on the above findings, the researcher concluded that the family size of the farmers had significant relationship with their adoption of brinjal production technologies.

4.3.4 Relationship between farm size of the brinjal growers and their adoption of brinjal production technologies

The relationship between farm size of the brinjal growers and their adoption of selected brinjal production technologies was examined by testing the following null hypothesis: "There is no relationship between farm size of the brinjal growers and their adoption of selected brinjal production technologies". Computed value of the co-efficient of correlation between farm size of the farmers and their adoption of selected brinjal production technologies was found to be 'r' = 0.729** as shown in Table 4.4 The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a tendency in the positive direction between the concerned variables.
- A high relationship was found between the two variables.
- The computed value of 'r' (0.729**) was found to be greater than the table value (r = 0.226) with 98 degrees of freedom at 0.01 level of probability.
- The co-efficient of correlation between the concerned variable was significant at 0.01 level of probability.
- The concerned null hypothesis was rejected

The findings indicate that the farm size of the brinjal growers had a positive significant relationship with their adoption of selected brinjal production

technologies. Hence, large growers get more scope than the small growers as they can invest more money for adoption of brinjal production technologies. Many researchers Hoque (1993), Khan (1993), Pal (1995), Chowdhury (1997), Muttaleb (1995), Islam (2002) and Rahman (2002) observed the similar findings in their studies.

4.3.5 Relationship between annual family income of the brinjal growers and their adoption of brinjal production technologies

The relationship between annual income of the brinjal growers and their adoption of selected brinjal production technologies was examined by testing the following null hypothesis: **"There is no relationship between annual family income of the brinjal growers and their adoption of brinjal production technologies"** Computed value of the co-efficient of correlation between annual family income of the brinjal growers and their adoption of selected brinjal production technologies was found to be 'r' = 0.619** as shown in Table 4.4 The following observations were recorded regarding the relationship between the two variables on the basis of the co-efficient of correlation:

- The relationship showed a tendency in the positive direction between the concerned variables.
- A high relationship was found between the two variables.
- The computed value of 'r' (0.619**) was found to be greater than the table value (r = 0.226) with 98 degrees of freedom at 0.01 level of probability.
- The concerned null hypothesis was rejected.
- The co-efficient of correlation between the concerned variable was significant at 0.01 level of probability.

The researcher concluded that annual family income of the brinjal growers had a positive significant relationship with their adoption of brinjal production technologies. Hossen (2001) found that the annual income of the sugar cane growers had a positive significant relationship with their adoption of modem sugarcane cultivation practices. Khan (1993), Pal (1995), Chowdhury (1997) and Islam (2002) also found the similar findings. Relationship between farming experience of the brinjal growers and their adoption of brinjal production technologies. The relationship between farming experience of the brinjal growers and their adoption of selected brinjal production technologies the following null hypothesis was tested "***There is no relationship between farming experience of the brinjal growers and their adoption of selected brinjal production technologies".*** The co-efficient of correlation between the concerned variables was found to be 0.206* as shown in Table 4.4 this led to the following observations regarding the relationship between the two variables under consideration:

- The relationship showed a tendency in the positive direction between the concerned variables.
- The relationship between the concerned variables was low.
- The computed value of "r" (0.206*) was larger than the table value (r= 0.196) with 98 degrees of freedom at 0.05 level of probability.
- The co-efficient of correlation between the concerned variable was significant at 0.05 level of probability.
- The null hypothesis could be rejected.

The researcher concluded that the farming experience of the brinjal growers had positive significant relationship with their adoption of selected brinjal production technologies and possible due to the farming experience motivated a farmer in adopting this. Rahman (1996) found similar finding but Choudhury (1996), Roy (1997) and Khalil (1998) dissimilar findings.

4.3.6 Relationship between extension contact of the brinjal growers and their adoption of brinjal production technologies

The relationship between extension contact of the brinjal growers and their adoption of selected brinjal production technologies was examined to the following null hypothesis: **"There is no relationship between extension contact of the brinjal growers and their adoption of brinjal production technologies."** The co-efficient of correlation between the concerned variables was found to be 'r'= 0.220* as shown in Table 4.4. This led to the following observations were recorded regarding the relationship between the two variables under consideration:

- The relationship showed a positive trend.
- A moderate relationship was found between the concerned variables.
- The computed value of 'r' (0.220*) was greater than the table value (r = 0.196) with 98 degrees of freedom at 0.05 level of probability.
- The concerned null hypothesis was rejected.
- The co-efficient of correlation between the concerned variable was significant at 0.05 level of probability.

Thus, the researcher concluded that the extension contact of the brinjal growers had positive significant relationship with their adoption of brinjal production technologies. The extension contact strengthened the base of their knowledge. The knowledge definitely acts as motivator towards adoption of new technologies. Hossen (2001) found that extension contact of the growers had significant relationship with their adoption of modem sugarcane cultivation practices. Kashem et al. (1990), Bashar (1993), Sarker (1997), Pal (1995), Chowdhury (1997) also found the similar findings.

4.3.7 Relationship between the training exposures of the brinjal growers and their adoption of brinjal production technologies

The relationship between training exposure of the brinjal growers and their adoption of selected brinjal production technologies was examined to the following null hypothesis: "There is no relationship between training exposure of the brinjal growers and their adoption of brinjal production technologies." The co-efficient of correlation between the concerned variables was found to be $Y = 0.278^{**}$ as shown in Table 4.4. This led to the following observations were recorded regarding the relationship between the two variables under consideration:

- The relationship showed a tendency in the positive direction between the concerned variables.
- A low relationship was found between the two variables.
- The computed value of 'r' (0.278**) was found to be greater than the table value (r = 0.226) with 98 degrees of freedom at 0.01 level of probability.
- The concerned null hypothesis was rejected.
- The co-efficient of correlation between the concerned variable was significant at 0.01 level of probability.

Based on the above findings, the researcher concluded that there was a positive significant relationship between training exposure and adoption of selected brinjal production technologies. Sardar (2002) observed the similar findings in their studies.

4.3.8 Relationship between organization participation of the brinjal growers and their adoption of brinjal production technologies

The relationship between Organization participation of the brinjal growers

and their adoption of brinjal production technologies the following null hypothesis was tested ***"There is no relationship between organization participation of the brinjal growers and their adoption of selected brinjal production technologies".*** The co-efficient of correlation between the concerned variables was found to be 0.222* as shown in Table 4.4 this led to the following observations regarding the relationship between the two variables under consideration:

- The relationship showed a tendency in the positive direction between the concerned variables.
- The relationship between the concerned variables was low.
- The computed value of "r" (0.222*) was greater than the table value (r=0.0196) with 98 degrees of freedom at 0.05 level of probability.
- The co-efficient of correlation between the concerned variable was significant at 0.05 level of probability.
- The null hypothesis could be rejected.

Based on the above findings, the researcher concluded that there was a positive significant relationship between training exposure and adoption of selected brinjal production technologies. Haque (1984) observed the similar findings in their studies.

4.3.9 Relationship between cosmopoliteness of the brinjal growers and their adoption of brinjal production technologies

The relationship between cosmopoliteness of the brinjal growers and their adoption of brinjal production technologies was examined to the following null hypothesis: "***There is no relationship between cosmopoliteness of the brinjal growers and their adoption of brinjal production technologies".*** The co-efficient of correlation between the concerned variables was found to be 'r'= 0.068^{NS} as shown in Table 4.4 This led to the following

observations regarding relationship the two variables under consideration:

- The relationship showed a positive trend.
- A very low relationship was found to exist between the two variables.
- The computed value of 'r' (0.068NS) was smaller than the table value (r =196) with 98 degrees of freedom at 0.05 level of probability.
- Hence, the concerned null hypothesis was accepted.
- The co-efficient of correlation between the concerned variable was insignificant at 0.05 level of probability.

The researcher concluded that cosmopoliteness of the brinjal growers had positive and insignificant relationship with their adoption of brinjal production technologies. Aurangozeb (2002), Islam (2002), Sardar (2002), Rahman (2001) and Hossain (1999) also found the dissimilar findings.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions and recommendations of the study.

5.1 Summary of Findings

The major findings of the study are summarized below:

5.1.1 Selected characteristics of the farmers

5.1.1.1 Age

Highest proportions 56 percent of the farmers were middle aged category as compared to 27 percent being young and 17 percent old aged.

5.1.1.2 Education

The highest proportion 24 percent of the farmers had “can sign only” and 18 percent are illiterate compared to 29 percent having “primary education”, 21 percent having “secondary education” and only 8 percent having “above secondary education”.

5.1.1.3 Family size

The highest proportion 73 percent of the farmers had medium family size compared to 13 percent large and 14 percent small family size categories.

5.1.1.4 Farm size

The highest proportion 79 percent of the farmers had small farm size compared to 13 percent having medium farm size and 8 percent having marginal farm size.

5.1.1.5 Annual family income

The highest proportion 68 percent of the farmers had medium income compared to 14 percent low income and 18 percent under high income categories.

5.1.1.6 Farming experience

The highest proportion 62 percent of the farmers had medium experienced compared to 22 percent low experienced and 16 percent under high experienced categories.

5.1.1.7 Extension contact

The highest proportion 64 percent of the farmers had medium extension contact compared to 17 percent having high and only 19 percent having low extension media contact.

5.1.1.8 Training exposure

Training response was 38 percent compared to having no training response was 62 percent.

5.1.1.9 Organizational participation

The highest proportion 36 percent of the farmers had low participation in organization compared to 26 percent had medium participation, and only 16 percent had high organizational participation categories and 22 percent had no participation.

5.1.1.10 Cosmopoliteness

The highest proportion 65 percent of the farmers had medium cosmopoliteness compared to 21 percent having low cosmopoliteness and only 14 percent having high cosmopoliteness.

5.1.2 Adoption of brinjal production technologies

The adoption of brinjal production technologies of the farmers ranged from 28 to 72 against the possible score of 0 to 100. The average adoption was 46.58 with a standard deviation of 11.78. The highest proportion 67 percent of the farmers had medium categories while 15 percent had high adoption and 18 percent had low adoption of brinjal production technologies.

5.1.3 Relationship between selected characteristics of farmers with their adoption of brinjal production technologies

Education, Family size, Farm size, annual family income, Farming experience, Extension contact, Training Exposure, Organizational Participation had positive significant relationship with adoption of brinjal production technologies. On the other hand, Age and Cosmopoliteness had no significant relationship with adoption of brinjal production technologies.

5.2 CONCLUSIONS

Findings of the study and the logical interpretations in the light of relevant facts prompted the researcher to draw the following conclusions:

1. The adoptions of brinjal production technologies of the farmers were moderate, as nearly 67 percent of the farmers had medium adoption. However, to enhance the rate and extent of adoption of brinjal production technologies among the farmers both the Government Organization and Non-Government Organization workers should provide appropriate technical and management related information to the farmers through continued extension and other support services.

2. The findings indicate that majority (83 percent) of the farmers had young to middle aged and the rest (17 percent) were old aged. Age of the farmers had no significant relationship and concluded that it is necessary to give special attention to young farmers for adoption of brinjal technologies.

3. Education of the farmers showed that there was significant and positive relationship with their adoption of brinjal production technologies. It influences to adopt brinjal production technologies. They could be motivated to adopt the improved practices due to influence by others. However, education has no alternative.

4. Farm size is an important factor in agriculture. Farm size of the farmers had a significant and a positive relationship with their adoption of brinjal production technologies. In respect of farm size of the farmers it was observed that 92 percent of the farmers had small to medium farms. Considering the above facts, it may be concluded that encourage the farmers having small and medium farms in order to increase their rate of adoption of brinjal production technologies.

5. The farmers having high income can invest appreciable amount of money in their adoption of brinjal production technologies. Annual family income of the farmers showed positive and significant relationship with their adoption of brinjal production technologies. It may be concluded that the availability of money is more essential for the adoption of quality seed, balance fertilizer and IPM by the farmers. So government should create interest free credit system for these farmers.

6. Farming experience of the farmers showed positive and significant relationship with their adoption of brinjal production technologies. More experienced farmers are more motivated to adoption of brinjal production technologies.

7. Extension contact of the farmers had a positive significant relationship with their adoption of brinjal production technologies and concluded that any attempt to increase the extension contact of the farmers would be helpful to increase the level of adoption of improved farming practices.

8. Organizational participation of the farmers had significant relationship with their adoption of brinjal production technologies. So encourage the farmers to involve the organization of the community.

5.3 Recommendations

5.3.1 Recommendations for policy implications

On the basis of findings and conclusion of the study the following

recommendation were made:

1. It may be recommended that agricultural extension agencies especially the DAE and relevant NGOs should critically review their training program and make sound provisions so that the farmers understand the benefit of adoption of brinjal production technologies. The DAE and other NGOs should strengthen their extension services to the farmers to motivate them for adoption of brinjal production technologies.

2. It is recommended that the extension workers should work with the all age group of farmers to promote adoption of brinjal production technologies. However, they will have to work more with comparatively larger member of middle-aged farmers as majority of the farmers belongs to middle-aged group.

3. It may be recommended that special attention should be given by the extension providers to the illiterate farmers and primary educated farmers so that they become aware about the benefit of adoption of brinjal production technologies.

4. Farm size of the farmers had positive significant relationship with their adoption of brinjal production technologies. All the farmers had marginal to medium farms and they could give more attention to their farming operation as they generally work on the farm. Hence, extension workers should work with the all category farmers so as to increase the adoption of brinjal production technologies on a high significant scale.

5. Necessary inputs such as quality seed/seedling, chemical fertilizers, insecticides, to be made available to the brinjal growers at proper time and at fair prices.

6. To ensure proper prices for brinjal, marketing support storage facilities shouldbe ensured.

7. Extension agencies should realize the existing problems of the brinjal production and take necessary steps to minimize these problems.

5.3.2 Recommendations for further study:

The following suggestions are put forward for further research studies.

1. The present study was conducted in two villages of Betgari union in Gangachara upazila in Rangpur district. So, similar studies may be undertaken in other parts of the country to verify the findings of the present study.

2. The present study was conducted based on the ten selected characteristics of the brinjal growers. Further research may be conducted on other characteristics of the brinjal growers.

3. The present study has been carried out among the male farmers only. So, a similar study may be conducted with the farm women to examine their views and opinions regarding the adoption of brinjal production technologies.

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APPENDIX II

Correlation Matrix of the dependent and independent variables

Variables	XI	X2	X3	X4	X5	X6	X7	X8	X9	X10	Xll	X12
XI	1.00											
X2	**-0.177**	1.00										
X3	**0.545****	**-0.86**	1.00									
X4	0.110	**0.319****	**0.214***	1.00								
X5	**0.129**	**0.264****	**0.239***	**0.587****	1.00							
X6	**0.805****	**-0.136**	**0.656****	**0.246***	**0.255***	1.00						
X7	**-0.110**	**0.148**	**0.073**	**0.153**	**0.291****	**-0.035**	1.00					
X8	**0.116**	**0.169**	**0.247***	**0.170**	**0.148**	**0.300****	0.020	1.00				
X9	**0.70**	**0.454****	**0.078**	**0.231***	**0.262****	**0.062**	**0.056**	**0.237***	1.00			
X10	**-0.131**	0.120	**-0.252***	**0.052**	**0.065**	**-0.230***	**0.140**	**0.383****	**-0.235***	1.00		
Xll	**0.182**	**0.129**	**0.324****	**-0.023**	**0.223***	**0.280****	**0.083**	**0.404****	**0.180**	**0.273****	1.00	
X12	**0.116**	**0.340****	**0.216***	**0.779****	**0.629****	**0.206***	0.222 ♦	**0.275****	**0.219***	**0.079**	**0.157**	1.00

**** Correlation is significant at 0.05 level of probability**

LEGEND

X, = Age

X $_2$ = Education

X $3^{=}$ Family size

X_4 = Farm size

X_5 = Annual family income

X $_6$ = Farming experience

X_7= Extension Contact

X_8= Training exposure

X_9= Organizational participation

X_{10}= Cosmopoliteness

X_{11}= Problems

X_{12}= Adoption of brinjal production technologies

English Version of the Interview Schedule Department of Agricultural Extension and Information System Sher-e-Bangla Agricultural University Dhaka-1207

An Interview schedule on

ADOPTION OF BRINJAL PRODUCTION TECHNOLOGIES BY THE FARMERS OF TWO SEECTED VILLEGE OF GANGACHARA UPAZILA IN RANGPUR DISTRICT

Name of the respondent: ..... SL.
Father's name: ..... No.
Date.....
Village: .....
Union: .....
Upazila: .....
District.....

(Please answer the following questions. Confidentiality would be maintain strictly)

1. Age

How old are you?.....Years

2. Level of education

Please indicate your educational qualification.

a) Can't read and write.....
b) Can sign only.....
c) Studied up to .....class

3. Family size

How many members are there in your family? ..... Persons

4. Farm size

Please give particulars of your farm size as follows

SL No.	Land area	Total (decimal)	Total (hectare)
A	Homestead area		
B	Own land under own cultivation		
C	Land taken from others on lease		
D	Land given to others on borga		
E	Land taken from other on borga		
F	Others (fruit garden, Pond et.)		

4.Annual family Income

Please mention about your annual income from the following sources

Source of income		Total production Kg/Mon	Price per unit Kg or Mon/ha.	Total price (Tk.)
Agriculture	Rice Wheat Maize Sugarcane Oil seeds Pulses Fruits Brinjal Other vegetables Poultry Livestock Fisheries Others			
Sub-total				
Non agriculture	Service Business Day labor others			
Sub-total				
Total				

5. Farming experience

Farming experience .....years.

6.Extension contract

Please mention the frequency of communication with the following persons and agriculture related media

S I No.	Communication media		Nature of communication media		
		Frequently	Occasionally	Rarely	Not at all
a. Personal contact					
1.	Sub-assis. Agri. Officer/ AAEO	1 times/ 2month ()	1 time/ year ()	1 times/ 2year( )	Never ()
2.	Local leader	4 or more times/ month ( )	3-1 times/ month ( )	3 times / year ()	Never ( )
3.	NGO workers	3 or more times/ month ( )	3-1 times/ month ( )	3 times/ year ()	Never ( )
4.	Upazila Agricultural officer/ Agricultural Extension officer	1 time/ 2month ( )	At least 1 time/6 months ( )	1 time/ year ( )	Never ( )
5.	Others (Friends/ Relatives/ Neighbors)	4 or more times/month ( )	1-3 times/ month ( )	3 times/ year ( )	Never ( )
b. Group contact					
6.	Participation in group discussion	4 or more times/ month ( )	2-3 times/ month ()	1 time/ year ( )	Never ( )
7.	Field day	3 or more times/ month ( )	1-3 times / month ( )	1 times/ year ( )	Never ( )
8.	Result demonstration	3 times/month ( )	1-3 times/ month ( )	3 times/ year ( )	Never ( )
9.	Participation in agril. Training course	2 times/year ( )	1 times/year ( )	1 time/ 2year ( )	Never ( )
c. Mass contact					
10.	Listening Farm Radio Talk	4 or more times/ month ( )	2-3 times/ month ( )	1 time/month ( )	Never ( )
11.	Watching agricultural program in Television	4 or more times / month ( )	2-3 times/ month ( )	1 time/ month ( )	Never ( )
12.	Reading agricultural magazine (Booklet/Leaflet/ Krishi Kotha etc.)	5 or more times/ year( )	3-4 times/ year ( )	1-2 times/ year( )	Never ( )
13.	Visiting agricultural fair	1time/year	1 times/2year	1 time/3year	Never ( )

7. Training exposure

Have you ever participated any Agricultural training program?

1. No

2. Yes if yes, furnish the following information.

SL. No.	Name of the training course	Offering organization	Day
1			
2			
3			
4			

8.Organizational participation

Please mention the organization that you are associated with:

SL. No.	Name of organization	Extent of participation(year)			
		No participation	General member with duration	Executive Member With Duration	Executive Officer with duration
1.	Union council				
2.	IPM Club				
3.	Krishak samabay sa mity				
4.	NGO (specify the name)				
5.	School committee				
6.	Madrasa committee				
7.	Others (if any)				

9. Cosmopoliteness

SI. No.	Place of visit	Extent of visit			
		frequently	Occasionally	Rarely	Not at all
1.	Village other than own village	2 or more times/ month	2-3 times/ 6month	1-4 times / year	No visit
2.	Visit to relative house	5 or more times/ month	2-3 times/ 3month	1-4 times /6 month	No visit
3.	Visit to market	9 or more times/ month	5-8 times/ month	1-4 times / month	No visit
4.	Visit to fair/mela	1times/year	1-times/ 2year	1 time/ 4year	No visit
5.	Visit to other Union	1times/ 2month	1 times/ 6month	1 time/ year	No visit
6.	Visit to other Upazilla headquarter	3times/ year	2 times/ year	1time/ year	No visit
7.	Visit to other Upazilla town	2times/ year	1 times/ year	1time/ 2year	No visit
8.	Visit to own district town	2 or more times/year	1 time/ year	1time/ 3year	No visit
9.	Visit to other District town	1time/ year	1 times/ 2 year	1time/3 year	No visit
10.	Visit to Dhaka capital city or other divisional town	1times/year	1times/ 2year	1time/ 3year	No visit

10. Adoption of brinjal production technologies

SL. No	Name of technologies	2019-2020		2020-2021	
		Net useable land (ha)	Net used land (ha)	Net useable land (ha)	Net used land (ha)
1.	a) Islampuri Variety b) Uttara Variety				
3.	Transplanting Method Line sowing				
4.	Application of fertilizer				
5.	Integrated pest management practice				

Thanks for your participation

Signature of interviewer

Date.....