

**FARMERS' PERCEPTION ON THE USEFULNESS OF
COMMON INTEREST GROUP APPROACH**

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**FARMERS' PERCEPTION ON THE USEFULNESS OF COMMON
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CERTIFICATE

This is to certify that the thesis entitled, “**FARMERS' PERCEPTION ON THE USEFULNESS OF COMMON INTEREST GROUP APPROACH**” 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 (MS) IN AGRICULTURAL EXTENSION & INFORMATION SYSTEM**, embodies the result of a piece of bona-fide research work conducted by **SHAILA JAHAN HAWA, Registration No. 18-09182**, under my supervision and guidance. No part of this thesis has been submitted for any other degree or diploma.

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DEDICATION

DEDICATED TO

*THIS THESIS IS LOVINGLY DEDICATED TO MY PARENTS
AND RESPECTED TEACHERS FOR THEIR ENDLESS
SUPPORTS, ENCOURAGEMENT THROUGHOUT MY LIFE*

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FARMERS' PERCEPTION ON THE USEFULNESS OF COMMON INTEREST GROUP APPROACH

Abstract

Shaila Jahan Hawa

The objectives of this study were to determine the farmers' perception on the usefulness of common interest group (CIG) approach, and to describe the selected characteristics of the farmers and to identify the factors that influence farmers' perception on usefulness of CIG. The study was conducted in six villages of Danya, Gala and Silimpur unions under Tangail Sadar upazila of Tangail district. Data were collected by using interview schedule from the selected 120 respondents during 1st November to 1st December, 2019. Descriptive statistics and multiple regressions (β) analysis were used to achieve the selected objectives. Majority of the respondents (67.5 percent) had moderately favorable perception while 19.2 percent and 18.3 percent of them had highly favorable perception and less favorable perception on usefulness of CIG respectively. The R^2 value (0.411) means that independent variables accounts for 41% of the variation in farmers perception on usefulness of CIG . Among the eleven selected characteristics, farm size, duration of training and involvement with CIG had significant positive contribution to the farmers' perception on usefulness of CIG. The remaining characteristics of the farmers, namely age, educational qualification, annual family income, agricultural work experience, agricultural extension contact, credit facilities, knowledge on CIG did not show any significant contribution with their perception. The findings of the study indicates that, there is still a scope to improve farmers' perception towards CIG's usefulness by facilitating more interaction among the participants and providing more training through CIG approach.

LIST OF ACROYNEMS AND ABBREVIATIONS

BARC	Bangladesh Agricultural Research Council
BAUEC	Bangladesh Agricultural University Extension Centre
BBS	Bangladesh Bureau of Statistics
BRAC	Bangladesh Rural Advancement Committee
CIG	Common Interest Group
DAE	Department of Agricultural Extension
DFID	Department Of International Development
DLS	Department of Livestock
DOF	Department of Fisheries
FIAC	Farmer's Information and Advice Centre
GDP	Growth Domestic Product
NAEP	New Agricultural Extension Policy
NALEP	National Agricultural And Livestock Program
NAP	National Agricultural Policy
NARS	National Agricultural Research System
NATP	National Agricultural Technology Project
NGO	Non Government Organization
SAAO	Sub Assistant Agriculture Officer
UAO	Upazila Agriculture Officer
UECC	Upazila Extension Co-ordination Committee
UNDP	United Nations Development Program
UPO	Union Producer's Organization

CHAPTER I

INTRODUCTION

1.1 General Background

Bangladesh is a small country which is considered as one of the most densely populated countries in the world. According to World Population Review, Bangladesh has a population of 166.37 million with a density of 1115.62 people per km². According to the report of WHO, the life expectancy in Bangladesh is 72.76 years and in the report of the UNDP Bangladesh placed 136th position in Human Development Index (UNDP, 2018). However, it is a small country in terms of GDP and per capita income. Agriculture is the backbone of the country which contributes 17 percent of the GDP (BBS, 2016). About 70% of the total population live in rural areas and directly or indirectly depends on agriculture for livelihood. About 63% of the labour forces are employed in agriculture of which 57% is employed in crop sector. Agriculture in Bangladesh is characterized by small granary and rice dominated farming system. In Bangladesh, roughly half of the population depends directly or indirectly on agriculture for their livelihoods. Most of the people living in rural areas depend on land for their livelihoods which is fertile but vulnerable. The rural people use traditional farming system because they do not have adequate knowledge about various new technologies and scientific method of crop production. As a result productivity of rice and other crops is low compare to many developing countries and the same is true for other agricultural commodities such as fisheries and livestock. The rural farming households are the main contributor to our economy and also the major part of our population. To develop the country it is very important to develop the household situation of the farm families. Private investment in research and extension is low. The NGOs, local governments and community organizations are coming up very slowly. Therefore, the public sector must continue to play a leading role in agricultural research and extension. In this regard, the government has taken steps to strengthen the existing research and extension systems to disseminate new agricultural technologies.

The National Agricultural Extension System

There are many agencies which provide extension support to the farmers of Bangladesh. These include government agencies, for example, the Department of Agricultural Extension, Bangladesh Rural Development Board, Bangladesh Water Development Board, Bangladesh Agricultural Development Corporation, Forest Department, Department of Livestock Services and Department of Fisheries. There are also many non-government organizations, commercial traders and input suppliers (manufacturers, wholesalers, and retailers) operating in rural areas of the country. Together, all these partners can be seen as comprising the National Agricultural Extension System.

Agricultural extension is an extremely important process which can accelerate technological, social and economic development, in particular, effective extension.

- Helps farmers identify and overcome production, farm management and marketing problems at farm level through the exchange of information among farmers, extension staff, input suppliers, credit agencies and marketing agents.
- Helps farmers make better use of existing technology, for example, through more efficient use of feed, fertilizer or irrigation, etc.
- Introduces new technology to farmers, such as new breeds, new varieties, new crops and new equipment
- Provides information to agricultural research institutions on farmers' production constraints so that appropriate basic, applied or adaptive research can be carried out to address them.
- Helps in the successful creation of opportunities or situations in which farmers gain the abilities and skills necessary to meet their needs and interests in such a way as to attain continuous improvement and self-satisfaction.
- Helps farmers learn to put information into use in ways that result in improvements in their living standards; - helps farmers gain a clear vision of what can and should be done and encourages farmers to improve their pattern of living and helps them develop the necessary skills to so.

Department of Agricultural Extension (DAE) has been providing agricultural extension service in the country since division of the Bengal after the British rule. The

earlier approach was a face to face dialogue between the extension worker and the farmer. DAE followed a top-down approach of technology delivery that seldom satisfied farmer's demand and thus failed to create desired impact. DAE started reforming the extension approaches and methodologies during 1970-1980 through the introduction of a system called Training and Visit (T&V). The system improved the service delivery to some extent yet failed to fulfill farmer's needs because of the top-down approach. A second reform started through introduction of the group approach in the mid-nineties and a policy document called New Agricultural Extension Policy (NAEP) was formulated in 1996. The system included a bottom up planning and working with gender balanced group and public-private sectors partnership. Because of some inherent weaknesses in the managerial level NAEP soon became non-functional and died after discontinuation of the donor-funding. Recent changes being tried to ensure farmer participation right from the planning process through formation of Common Interest Group (CIG)

Information to extension clients in order to allow them better use of available resources by increasing technological options and organizational skills that in turn allows them to take greater advantages of production and market opportunities.

Common Interest Groups (CIG)

CIG has been placed in order to develop a decentralized extension services (DES) which comprises village level extension that includes farmers, and their federation (producers' organization) at union, upazila and district levels. The whole gamut of planning, implementation and monitoring processes will be done at upazila level through participatory planning by the CIGs. Creation and strengthening of social capital through technological interventions (i.e., shifting of subsistence agriculture to commercial agriculture) and increasing ability of the communities to convert their social capital into economic capital by developing organizational capacity to manage, implement and monitor agricultural development activities are of utmost priority. These obviously include the empowerment of the community organizations (CIGs and POs) to increase their ability to plan, execute and monitor their activities. The activities also include the development of gender sensitive local institutions that can manage and mobilize community assets, and make new investments in agricultural productivity increase.

The National Agricultural Technology Program (NATP) project was undertaken to disseminate new technologies among the rural community and to improve the situation of the poor families and reduce the poverty level of the country. This project was financed by World Bank and International Fund for Agricultural Development (IFAD). The first phase of this project was approved on 7 February and started functioning from the same year. The first phase of this project had already been completed in 2013. Now the second phase is running. The project was launched to develop and disseminate agricultural technology, increase agricultural productivity, strengthen social and economic capital, develop the supply chain, improve agricultural marketing system etc. The four major components of the project were: agricultural research support, agricultural extension support, development of supply chain and project management and co-ordination (BARC, 2014). The project was planned to take care both research and extension in parallel, the specialty of the project. Therefore, beside DAE, different National Agricultural Research System (NARS) institutes, public universities, even some NGOs were brought under the same umbrella. CIG members are the main executor and beneficiaries of this project. A CIG is an association of people from the same socio-economic background who share a common interest or passion. They also exchange thoughts, ideas and belief about the given passion. Farmers can be members of only one CIG through which they can receive training and participate in demonstration plots in more than one technology for the sub-sector-specific extension. The CIG members can increase their agricultural production by adopting various newly improved technologies to the changing climate which will ensure their food security and also economic stability. The sustainable livelihood approach of the Department for International Development (DFID) is inherently responsive to people's own interpretations and priorities for their livelihoods. However, it starts with people, it does not compromise on the environment and main principles in terms of poverty eradication. DFID sustainable livelihood approach include five assets namely; Natural, Financial, Human, Social and physical.

1.2 Justification of the Study

Cultivable land of Bangladesh is about 90.98,460 ha. (BBS 2011) but 1% of cultivable land decreased every year for industrialization, urbanization, habitation and other activities. Now population increased rate is 1.36% (BBS 2011) in our country.

Population will be about 25 cores in 2030. To fulfill future need of Bangladesh it is necessary to increase food production rapidly not only in crops but also livestock and 9 fisheries. DAE initiated NAEP to face such kind of challenges. Now agriculture is no longer a mere domestic affair, it is a commercially competitive sector exposed to the global market. In the new environment, the need is to develop and transfer technology that would be sustainable, leading to conservation of natural resources and response to the challenge. So, it is overdue to shift focus of agriculture from supply-driven to demand-driven requirements, change from a centralized extension service to a decentralized pluralistic extension system and move from a top down operational mode to a participatory demand-led approach. For this reason DAE introduced IPM approach in 1986. It is participatory group based approach but it is a top down process and not integrated with DLS and DOF. In 2008 Government introduced a new integrated Agricultural activity by NATP which is a demand-led, bottom-up and decentralized extension approach. In this system 15 CIGs constructed in a Union with agreed association of 20 farmers for each CIG. Out of the 15 CIGs, 10 would be for crop, horticulture and household, 3 for livestock and 2 for fisheries based. Among 15 CIGs 30% of the group should be household based female farmers group. The crop, horticulture, household, livestock and fisheries based CIGs interacted in monthly meeting, take part to prepare annual extension plan, group discussion and decision making. Decision about commercial agricultural possibilities, production and marketing, implementation of result and method demonstration, arrange field day and motivational tours, take part in training and agricultural fair, introduce savings and Credit program and other socio-economic activities etc. Some activities of CIGs are shown in Photograph no 1.1 to 1.2. This demand-led, bottom-up and decentralized extension approach is almost new activities in agricultural sector because CIG activities started in 2008. So no previous research is done on this issue. Considering the above facts the researcher undertook a research study entitled "Farmers' Perception on the Usefulness of CIG Approach in the selected area of Tangail Sadar upazila.



Photo 1.1: CIG farmers are taking



Photo 1.2: Exposure visit of CIG farmers



Photo 1.3: Showing new technologies to CIG farmers



Photo 1.4: CIG farmers' monthly meeting

1.3 Statement of the problem

Bangladesh is yet to reach the expected height of development despite having a huge human resource base vibrant with life and vigor. Well spread illiteracy is a pull factor behind this. However, in recent times Bangladesh has achieved commendable success in some areas.

Analyzing the issue from farmer's perspective, this study was specifically designed to find out the answer to the following questions:

- (i) What are the farmers' selected characteristics that are related to their perception on the usefulness of CIG?
- (ii) What is the farmers' perception on the usefulness of CIG?
- (iii) How farmers' personal, social, economic and psychological characteristics are related to their perceptual behavior regarding CIG?

In order to answer the above mentioned research questions the present study entitled “Farmers’ perception on the usefulness of common interest group approach”.

1.4 Specific Objectives

In order to proper direction to the research the following specific objectives were formulated:

1. To determine the selected socio-economic characteristics of the farmers participate in CIG. Selected characteristics of CIG members are:
 - Age
 - Educational qualification
 - Farm size
 - Annual family income
 - Agricultural work experience
 - Agricultural extension contact
 - Credit facilities
 - Duration of training
 - Knowledge on CIG
 - Involvement with CIG
 - Farmers’ perception on usefulness of CIG
2. To determine the farmers’ perception on the usefulness CIG.
3. To explore the contribution of the selected socio-economic characteristics of farmers to their perception on the usefulness of CIG.

1.5 Assumptions

An assumption is taken as a fact or belief to be true without proof. So The following assumptions were in mind of the researcher while carrying out this study:

- (i) The respondents included in the sample were capable of furnishing proper responses to the questions of the interview schedule.
- (ii) Views and opinions furnished by the respondents were the representative views and opinions of the whole population of the study.
- (iii)The responses furnished by the respondents were reliable and they truly expressed their opinions about usefulness of CIG.

- (iv) The data collected by the researcher were free from bias.
- (v) The researcher who acted as the interviewer was well adjusted to the social and cultural environment of the study area. Hence, the respondents furnished their correct opinions without any hesitation.
- (vi) The respondents had almost similar background and seemed to be homogenous to a great extent. The information sought by the researcher revealed the real situation to satisfy the objectives of the study.
- (vii) Data are normally distributed.

1.6 Limitations of the Study

The purpose of the study was to have an understanding of the extent of perception of the CIG members and to explore its relationship with their selected characteristics. Considering time, money and other necessary resources available to the researcher and to make the study manageable and meaningful it became necessary to impose certain limitations. The limitations were as follows:

- The study was confined to selected six villages namely Silimpur, Galutia, Kandila, Rashulpur, Pachkahnna, Dorjipara of Tangail Sadar upazila under Tangail district.
- There were many characteristics of the CIG members in the study area but only eleven of them were selected for investigation.
- For information about the study, the researcher depended on the data furnished by the selected respondents during their interview with her.
- There were 2200 CIG members in the study area, but only 120 CIG members were considered for this study.
- Facts and figures collected by the researcher applied to the situation prevailing in the locality during the year 2020.
- The respondents for data collection were kept limited within the farmers who were just attached with the CIG.

1.7 Scope of the Study

The findings of the study will be expected to be of great value for researcher, extension service providers, students and particularly planners in formulating and designing extension strategies for involvement of farmers in CIG. The findings of the

study will in particular be applicable to Tangail Sadar upazila of Tangail district. However the findings may also be applicable to other areas of Bangladesh where physical, socio-economic, cultural and geographical conditions do not differ much from those of the study area. Thus the findings will be helpful to the students, researchers, extension specialists and particularly for policy makers and planners for promoting agricultural production as well as CIG development in our country.

1.8 Operational Definition Terms

Definition of terms is a procedure whereby concepts are defined in terms of their operations as used in the study for purposes of the study, the following terms were used:

Common interest group: It means an association of same socio-economic status living together preferably in a particular community. It has a common interest in major livelihood activity. The group members work together for achieving a common goal. The CIG members have the ability to formulate demand, mobilization of resources, planning, budgeting, implementation and monitoring of the activities related to them.

CIG members: The persons who were involved in CIG were considered as CIG members.

Age: Age of a farmer refers to the period of time from his/her birth to the time of interview.

Educational qualification: 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) at the time of interview

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

Annual family income: It refers to the total annual earning of all the family members of a respondent from agricultural and other non-agricultural sources (Services, business, daily labour etc.) during a year. It was expressed in Taka.

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

Duration of training: It refers to the total number of days attended by the farmers in his/her life to the various agriculture related subject matter.

Knowledge on CIG: Knowledge on CIG refers to the understanding of the respondents about different extension services.

Involvement with CIG: It refers to the extent of participation of the members in CIG regarding status of participation and duration of participation in CIG during the time of interviewing.

Perception: Perception is the mental process by which an individual becomes aware of the world around .It is a response which in turn furnishes stimuli that elicit and steer that further response. Ruch (1953) states that perception is the process of organizing and interpreting sensory data by combining them with the result of previous experience.

Agricultural extension: This is a service or system which assists farmers through training and educational procedures to improve their farming techniques, increasing their production efficiency and incomes, hence bettering their standards of living. For this study, agriculture extension was the service received by farmers through CIGs.

Extension approaches: Defined as a style of managing extension system aimed at passing agricultural messages to farmers through interaction, to enable farmers improve their agricultural productivity and livelihoods. The extension approach for this study is passing information through common interest groups on high value traditional crops.

CHAPTER II

REVIEW OF LITERATURE

To carry out the research program, review of literature gives a clear and concise direction to the researcher. In this Chapter, review of literatures relevant to the objectives of this study is presented. This was mainly concerned with farmers' perception on the usefulness of CIG in various aspects. There was serious dearth of literature with respect to research studies on this aspect. So the directly related literatures were not readily available for this study. Some researchers addressed various aspects of farmers' role, their opinion on extension program and its effect on client group and suggesting strategies for their emancipation from socio-economic deprivations. A few of these studies relevant to this research are briefly discussed in this Chapter. The researcher made an elaborate search of available literature for this purpose. The researcher attempted to study the relationship of each of the variables. This Chapter is divided into four sections; conceptual issues on perception, CIG and related concept, the relationship between farmers' characteristics and their perception towards various issues, the conceptual framework of the study.

2.1 Conceptual Issues on Perception

In psychology and the cognitive science perception is the process of acquiring interpreting selecting and organizing sensory information. Perception under sees our basic awareness experience and under pretention of the world perceptual study. Promises to reveal how much and what kind of knowledge is inborn in humans, how much and what kind of knowledge has to be learned. Perception is the necessary first step in information gathering about the environment understanding perception is therefore important even from the early stage of life. Perception works through orchestrated stages of information processing and complex computation. Sensory registration is the beginning point of numerous process that transform and store the initial internal representation of a stimulus input. According to the Huffman et.al (1994), which ever senses are involved perception consist of three basic process (1) selection, in which we select stimuli to focus on while disregarding the rest; (2) organization, in which we assemble selected sensations into common patterns and shapes and (3) interpretation, in which we attempt to explain the selected and

organized sensations and make reasonable judgments from them. Thus, sensation and perception process are interlinked and perception follows sensation stimuli.

2.1.1 The cycle of perception

Perception as with all other cognitive functions is situated in the environment. That is the perceiver must interact extensively and continuously with the environment to construct and maintain an accurate internal model of external objects and events (Kellogg, 1995). It is attempted here to provide a synthesis of the different theoretical positions we have been considering.

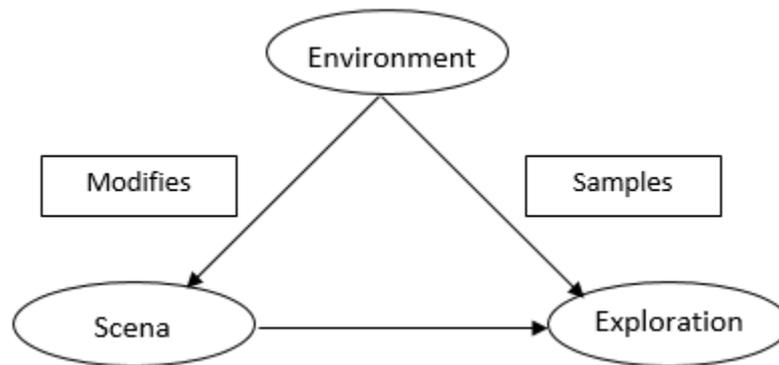


Figure 2.1. The cycle of perception

The basic outline of the theoretical position is shown in figure 1. In essence, it is assumed that there is a perceptual cycle involving schemata (i.e., mental representations of knowledge about the world), perceptual exploration, and the stimulus environment. Schemata contain a collection of knowledge derived from past experience which serves the function of directing perceptual exploration towards relevant environmental stimuli. Such exploration often involves movement around the environment. Perceptual exploration leads the perceiver to sample some of the available stimulus information. If the information obtained from the environment fails to match information in the relevant schema, it is modified appropriately.

2.1.2 The process of perception

Perception of the individual is not a spontaneous process. The total matter of perceiving occurs in steps. First, the stimuli from the outside world are sensed through our receptors like the ears, eyes, nose, etc., and get into the brain. Perception is the way through which sensations are interpreted using knowledge and understanding of the world, so that they become meaningful experiences. Thus, perception is not a

passive process of simple absorbing and decoding incoming sensations. The process of perception can be simply understood from figure 2. If it were people's understanding of the environment would be poor indeed people fill in missing information and draw on past experiences to give meaning to what they say, hear or touch.

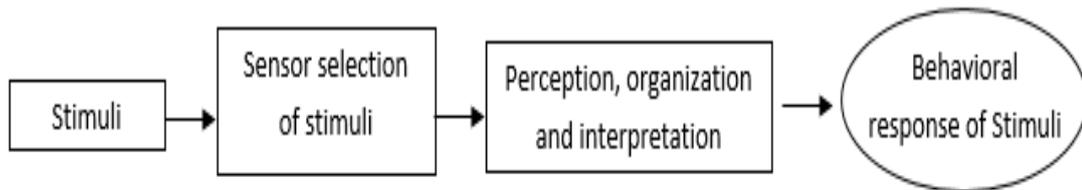


Figure 2.2 The perception process (Altman 1985)

2.1.3 Perception and linkages

The following diagram illustrates some of the relationships between perception and other psychological aspects of the human being. The ways people behave, feel, and think are governed to a large extent by the way of perceive or interpret the stimulation that comes to them through sensation. Thus, the capacities and limitations of perception have far reaching effects on how people react to and interact with objects, situations, and other people. However, the linkages can be seen simply from Figure 3 and we can think that perception is not an isolated process; rather it is strictly interacted to the personal status of the individual concern and environment

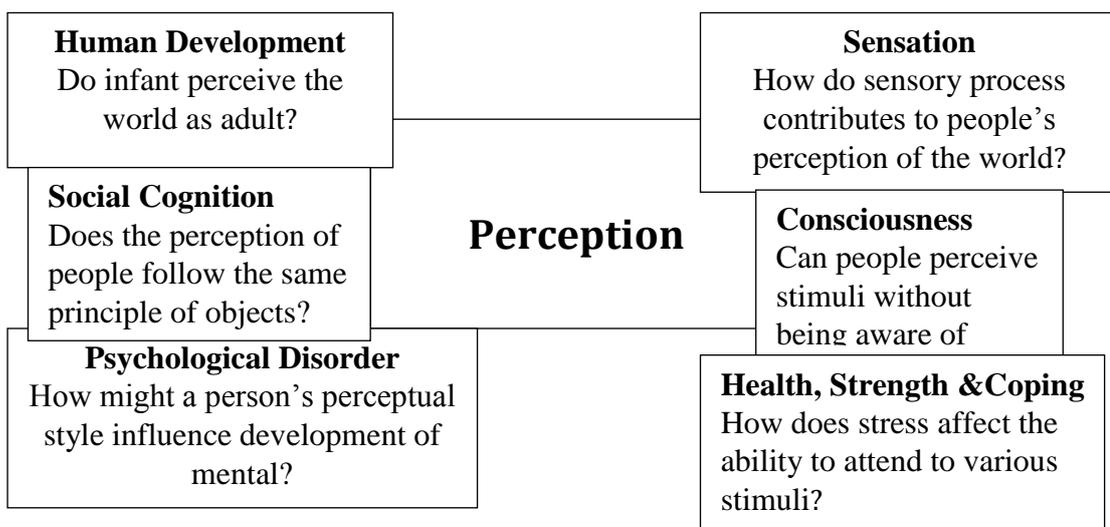


Figure 2.3 Linkage of perception with other aspects of human psychology

It is well recognized that knowledge and experience play important role and necessary for basic aspects of perception, such as perceptual constancy or pattern recognition. A thorough understanding of perception can give fresh and meaningful awareness about outside world. It, thus, increases our communication skills. The way we interpret, or perceive, this formation depends on several factors, including clarity and familiarity of the stimuli, our physical characteristics, our needs and values, knowledge, feelings, and past experience. However, a number of factors influence a person's perception. Four of the most important, according to Altman *et al* (1985) , are (a) selection of stimuli, (b) organization of stimuli (c) the situation and (d) the person's self-concept. Other than the above factors affecting perception perhaps the most consistent influence on perception is previous experience. (Goldstein, 1980) Motivation of the perceiver has strong influence on perception. Our desire and needs may strongly influence our perceptions. People in need are more likely to perceive something that they link will satisfy that need. Again expectations about what we are supposed to perceive can also influence perception. Cultural background can also influence people's perceptions. The language that people speak can affect the way in which they perceive their surroundings and cultural differences in people's experiences can also influence how people use perceptual causes (Morris, (1993) Thus, the process of perception is such that different people respond to the same stimuli in different ways frequently these differences in response cause difficulty when one person deals with another.

2.1.4 Review of literature on perception of different aspects

Kabir (2002) in his study observed that majority (65%) of the farmers had moderately favorable perception on the effect Barind integrated area development project towards environmental upgradation where only 16 and 19% of the farmers had low and highly favorable perception respectively.

Maoba conducted a study on Farmers' Perception of Agricultural Extension Service Delivery In Germiston Region, Gauteng Province, South Africa .The study further revealed that extension activities had low impact on improving farm production yield and profitability ($M=1.9$, $SD=\pm 0.67$) and enabling farmers to identify their own needs, problems and solve them ($M=1.9$, $SD=\pm 0.69$).

Akinwumi et.al (1995) conducted a study on Farmers' perceptions and adoption of new agricultural technology: evidence from analysis in Burkina Paso and Guinea, West African. Economists investigating consumer demand have accumulated considerable evidence showing that consumers generally have subjective preferences for characteristics of products and that their demand for products is significantly affected by their perceptions of the product's attributes. However, the role of farmers' preferences in adoption decisions have received very limited attention in adoption studies conducted by economists. This paper tests the hypothesis that farmers' perceptions of technology characteristics significantly affect their adoption decisions. The analysis, conducted with Tobit models of modern sorghum and rice varietal technologies in Burkina Paso and Guinea, respectively, strongly supports this hypothesis. Our results provide a strong case for future adoption studies to expand the range of variables used away from the broad socio-economic, demographic and institutional factors to include farmers' subjective perceptions of the characteristics of new agricultural technologies.

Ayesha Khan And Muhammad Akram conducted a study on farmers perception of extension methods used by extension personnel for dissemination of new Agricultural technologies in Khyber Pakhtunkhwa: Pakistan. The data revealed that majority of sample respondents i.e. 151 perceived extension services as not effective. Regression analysis showed that contact with extension personnel influenced the effectiveness of extension service.

Maoba, et.al (2016) conducted to determine farmers' perception of extension service delivery in Germiston Region, Gauteng Province, South Africa. It was found that extension is efficient, effective and visible in the study area. The study recommended a review on extension methods perceived to be non-effective or slightly effective and collaboration between stakeholders for a strong extension services. It will be imperative to ensure that methods regarded to be effective are mainly used to deliver extension messages.

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

Rahman (2000) conducted a study on farmers' perception of sustainable agricultural development and found that farmers of Japan possessed better perception than those of Bangladesh in respect of the same.

Sharmin (2005) conducted a study on rural woman' perception of benefits of involvement in income generating activities under a non-government organization and findings indicate that the majority (91%) of the respondents had medium perception of benefits while 9% had high perception respectively. It was also found that highest proportion (66%) of the rural woman in the study area faced low constraint in involvement income generating activities followed by (30%) and (4%) had medium and very low constraint.

Chakraborty (2002) conducted a study on block supervisors' perception on changes from mono rice culture to diversified crop cultivation .He reported that the highest proportion (68%) had high perception and 10% had low perception of changes.

Islam (2018) conducted a study on farmers' perception of the effectiveness of information and communication technology in receiving agricultural information and the study revealed that the highest proportion (57.8%) of the respondents' had medium level of perception on the effectiveness of information and communication technology in receiving agricultural information compared to 25.7 % and 17.5 % having low and high level of perception respectively.

Afique (2006) stated that majority (97.5%) of the respondent rural women had favorable perception of benefits of agricultural model farm activities of Sabalamby Unnayan Samity.

Sayeed (2003) conducted a study on perception of farmers' benefits from using manure towards integrated nutrient management (INM) for sustainable crop production .He found that (56.7%) of farmers had less favorable perception of benefits from using manure towards INM for sustainable crop production while the rest (43.3%) had favorable perception of this issue.

Chowdhury (2001) conducted a research on farmers' perception of afforestation program of barind multipurpose development authority at Barind Area of Rajshahi districts. He found that three fourth of the respondents showed medium to high favorable perception regarding the benefits of afforestation through improvement of ecological status of the region.

Chowdhury (2001) conducted a research on farmers' perception of afforestation program of Barind multipurpose development authority at Barind area of Rajshahi districts. He found that three fourth of the respondents showed medium to high favorable perception regarding the benefits of afforestation through improvement of ecological status of the region.

Mahmud (2016) conducted a study on perceived usefulness of information and communication technologies (ICTS) use in agro farming system in Bangladesh and showed that the highest proportion (61.1%) of the respondents perceived ICTs as high useful in agriculture compared to 4.4% perceived low and 34.5% perceived as moderate useful in agriculture. Among the variables, level of education, ICT self-efficacy and ICT use experience were found to be positive and significantly associated while farm size, ICT ownership, extent of ICT use and constraint of using ICT were found to be non-significantly associated with perceived usefulness of ICTs use in agro-farming system.

Islam (2001) conducted a study on farmers' perception of the impact of non formal education on agricultural development and he showed that the highest proportion of the farmers were found in the favorable perception category while 28% and 9% were in medium and low perception categories.

Islam (2017) stated that the findings of the study indicated that farmers' perception towards harmful effects of climate change on agriculture has not satisfactory. Still there is a scope to improve farmers' perception through more involving with organizational participation, extension media contact and increasing knowledge.

Soontarajumpaka (1980) reported that age, education, income and farm size were not related to farmers perception on agriculture farmers' radio program in terms of usefulness understandability, credibility , appropriateness more over none of the independent variables were related to farmers overall perception on the radio program.

Saha (2006) conducted a study on perception of farmers on information needs assessments. He showed that majority of the respondents had high and medium knowledge about agricultural activities. The overall perception on FINA was medium to high.

Islam (2014) stated that majority (53 percent) of the respondents had medium perception while 24 percent and 23percent of them had respectively low and high perception on the effect of IPM.

Adeola (2012) conducted a study on perceptions of environmental effects of pesticides use in vegetable production by farmers in Ogbomoso, Nigeria. The Results showed that majority (85 %) of the farmers had low to medium level of perception; while only 15% farmers had high perception regarding environmental effects of pesticides use in vegetable production.

Pal (2009) conducted a study on the perception of organic farmers regarding introduction of ict in organic farming. The Results showed that more than half (54 percent) of the farmers perceived that organic products are superior to inorganic one.

Issa et.al showed positive and significant correlation between the effectiveness of extension delivery channels and level of education ($r = 0.29$), income ($r = 0.28$), membership of association ($r = 0.26$), and farming experience ($r = 0.21$). Also, farmers' perceptions of the use of extension delivery channel in the study areas ranked very low showing the ineffectiveness of the delivery channels. The most effective extension delivery channels are other farmers (8.8), friends/relatives (8.54), radio (8.51) and extension agents (8.5). This paper therefore recommends that extension should play a more active role in helping farmers to get organized into functional organizations, including commodity groups, credit societies, cooperatives, and other types of farmer associations while using combination of different delivery channels to disseminate extension technologies to farmers. Media organizations particularly the public-owned should devote a certain amount of air time for agricultural extension (radio and TV) programs.

Muktar et.al (2016) showed that 8.8% perceives extension services as helpful, 45% as partially helpful and 36.3% as not so helpful. However, 38% of the respondents' shows that their family welfare has improved due to timely access of inputs in recent times, 37.3% felt that it has slightly improved while 24% felt the change is slightly visible. The limitation that discourage farmers from seeking extension services are inaccessibility of the extension agent as majority of the farmers (53.8%) indicates that agents are not readily available in their localities, only (35%) of the respondents felt that extension agents plays a major role in linking them to markets which indicate a

negative feeling by the farmers on the role of extension to market linkage. In places where extension agent is accessible, issues of credibility and lack of trust is evident, for example 33.7% alluded financial exploitation, 2.5% flirting with their household women and 63.5% indicate unfamiliarity with the extension agent to be an obstacle to trust and subsequent adoption of their messages.

2.2 CIG and Related Concept

There are three extension systems under NATP, one each for crops, livestock and fishery respectively, for introducing technological information through training and real life demonstration in 120 upazilas. The basic process is as follows: In each upazila, farmers are organized in Common Interest Groups (CIG) in the ratio of 7:2:1 for crops, livestock and fisheries. Farmers can be members of only one CIG through which it can receive training and participate in demonstration plots/exercises in more than one technology for the sub-sector-specific extension. Thus, a CIG may receive training and participate in demonstration in technology related to rice yield gap minimization, AWD, improved mustard and lentil technology or for any other crop among several as well as can take part in seed preservation, compost making etc. In case of livestock and fisheries the available technologies are rather limited to 2 or 3. There are CIGs which draw their membership exclusively from women farmers. The CIGs were initially expected to be formed by NGOs. Later, however, it was decided that the DAE/DLS and DF is the main agents for forming the groups. It was expected that only in this manner is there be a full ownership of the groups by the extension departments and that in future technological backstopping may be ensured even if the project discontinues.

Each CIG is expected to prepare its own plan of actions (training, demonstrations, planting) related to the technology. These are aggregated at the union and subsequently at the upazilalevel for a particular fiscal year. This provides the demand side of the plan. From the NATP/extension side there are allocations pf resources (financial, trainers etc) which are then matched with the demand and a final plan is thus prepared and implemented CIG by CIG for the particular upazila. In theory this is thus a bottom up micro level planning for technology dissemination and practice.

CIGs as described under NALEP are enterprise based farmer groups formed with the assistance of the various subject matter specialists (SMSs) to take advantage of the

various opportunities available to them. These CIGs are formed with an aim of empowering the farming communities in the FAs to take up agri-business opportunities with an emphasis on the enterprise-based ones that are market oriented and income driven. The promotion of opportunity and formation of CIGs follows the following steps:-

- Identification of opportunities by the various District and/or Divisional SMSs.
- Promotion of the opportunities/triggering demand for extension services, done by providing the necessary information regarding the opportunities
- Formation of CIGs by the farmers with the capacity and interest in a given opportunity.

Farmers are encouraged to form CIGs so that they can more easily access extension services under SFAA. These CIGs are meant to handle the production and marketing of individual commodities of interest for income generation. However the farmers who are not interested in enterprise-based opportunities will form groups referred to as Extension groups . When the SFAA was started, part of the intention was to have the CIGs act as vehicles through which extension messages would reach the farmers and have this as a grass root structure for development within the communities. There are however, certain institutional factors that determine whether this is achieved. It is on this premise that this study sought to ascertain their influence on the performance of the CIG.

Investigating the process

The approach relate to formation of the CIGs, and their operations (appointment of office bearers, land holding groups of farmers, regularity of meeting and their minutes, savings schemes, if any, micro level planning) as well as the support received from the NATP and all the three extension services. Apart from these, there are also support provided for running what are called Farmers' Information and Advice Centre (FIAC). These center provide necessary information to farmers on demand .The main method of investigation here is the checking of records of the chosen CIGs, and associated FAICs, information obtained from the extension services as well as the NATP from their records of support provided and received .The immediate output of the process are several such as trainings imparted to CIG members, demonstrations on farmers' fields, information obtained on resolution of

farmers' problems through training, FAIC, demonstrations and their application by farmers. The final output has to be the actual practice of the technology or the working method. For a crop technology this is the area of land on which the technology has been applied by specific farmers, the type of farmers who have applied those, the yield levels and the inputs going into the application of the technology, the changes, if any, of the farmer's cropping patterns and calendars, the profitability of the technology and the changed cropping patterns. The Consultant tried to find out how far the adoption of the technology is related to the training and similar other services received from NATP and extensions services. It should be noted that three types of farmers were requested to provide the relevant information. These are the CIG farmers, non-CIG farmers in the same or neighboring village and a control group of farmers in an area where there are no CIGs. Also note that while farmers can become members of only one CIG, this does not preclude them from learning from farmers from other CIGs who may have different trainings and demonstrations. It this becomes quite a complex mosaic of activities. Thus, while one can try to have the effectiveness of a particular technology for raising yield, output and income, in reality the end result for the farmer has to be the farm level rise in aggregate output and income. All these apply in various degrees and forms also to CIGs for livestock and fishery technology although the complexities are less due to the limited number of technologies that are being introduced.

Selection criteria for CIG member:

- **Group size:** A group should have 20 members (for crop, livestock, fisheries and Hortex)
- **Socio-economic status:** Members of a group should be of the same socio-economic status and of a specific gender, male or female. However, in case of fisheries CIGs, there could be mixed groups;
- **Category of groups:** Small and Marginal Farmer Groups (land ownership up to one hectare) 80 per cent, Medium and Large Farmer Groups (land ownership above one hectare) 20 percent and Women Farmer Groups (irrespective of land ownership) 30 percent of all groups.

- **Homogeneity:** No mixed group of male and female with exceptions for female headed household (mostly in case of crop CIGs) but in case of livestock and fisheries CIGs, mixed group may be formed.
- **Dwelling status:** Has to be a permanent resident of the concerned *para/* village. A “*BorgaChasi*’ who is engaged in farming activities, may be member of a CIG but he should be apartment resident in the community.
- **Membership:** One from one family.
- **Member selection from existing group:** Selection of CIG members from existing groups of the project of executing agencies is encouraged for avoiding duplication and conflict in the same area. However, such group members should have common interest with the other CIG members.

Formation and management of CIGs

Formation and management of CIG is a process of social mobilization. The capacity of CIG depends on the problem identification, prioritization, planning, utilization of local resources, linking with market opportunities and preparation of micro plan. Their (CIGs) contributions towards preparation implementation and monitoring of extension activities at the union level will ultimately pave the way for a greater extension scenario. However, they require expertise in facilitation. Union Extension Facilitation Team (UEFT) is empowered to provide such supports. The UEFT consists of SAAO of DAE, CEAL of DLS, LEAF of DOF and local NGO representatives. DAE/DOF/DLS should include training topics/events on social mobilization in their trainer training program on a regular basis. The resource speakers should be selected from NGOs, government organizations, rural development academies and Universities having experience in social mobilization. This process will help institutionalizing the social mobilization process within DAE/DOF/DLS, enhance their capacity and sustaining the program even after the project is over

Defining CIG:

A group of minimum five numbers of experienced small scale farmers registered under partnership act with a common interest e.g. dairy farming, Banana cultivation etc.

- The common interest must be linked to a predominant product of a production belt with market demand.
- The group takes a local service provider (e.g. Agri or Veterinary graduate) nominated by a promoter NGO or Company as one of the partners.
- Initial corpus amount is raised through equal participation amongst members with promoter NGO / company facilitating resource mobilization (if required) either from donation / grant in aid or from its own earning.
- Promoter NGO / company sign a mission partnership agreement with each CIG for Service Delivery and trade on inputs.
- The group to give an annual mentoring fee to be fixed from time to time to promoter NGO / company for its mentoring services
- The group to give 50% of its earning in any financial year from private advisory, laboratory and training services rendered to its clients, to the service provider associated with the group irrespective of the service provider being a partner in the venture.
- The group members to share responsibility of business on its own or appoint suitable employee to look after day to day business
- Group to have its own name and maintain office set up. However, they shall have to prominently display name of the promoter NGO / Company and its technical associates as mission partner.
- Corpus raised is invested to develop manufacturing facilities, common service and marketing infrastructure under the guidance of promoter NGO / Company
- Promoter NGO/ Company to give each CIG quality farm inputs for trading by demonstration. The CIG may however maintain any retailing counter for inputs other than those provided by the promoter NGO / Company.
- Promoter NGO / Company to assist each CIG to obtain financial support from banks for specific entrepreneurial projects
- For micro finance and insurance projects the promoter NGO / Company may act as guarantor.

- Group members to sign retaining contract (if required) with promoter NGO / Company approved professional for integrated service and accept him /her as motivator and arbitrator.

Social role of CIGs

Formation and functioning of CIG though purely is on commercial line, the groups will be oriented to do business with social responsibility. Each CIG will take lead in managing and mobilizing resources for a Community Corpus Fund. Such fund will be used for health care and education of concerned farming community represented by the CIG as far as capacity building through enhancing physical and mental abilities is concerned.

The motto of CIG service delivery are: Accountable – Accessible and Affordable service to its clients.

The revenue model:

Major proposed earning sources of any CIG are as follows:

- Income from sale of farm inputs and trading
- Income from sale of value added produce (including value addition by grading / sorting)
- Income from advisory and on-farm training services
- Income from investments in other related non-farm activities.

Some of the identified economic activities of CIG (list not exhaustive) are:

- Trade on all kind of farm inputs and equipment's e.g. Seeds, feed, fodder, silage, semen, animal health products, milking equipment's etc.
- Infrastructure for Artificial Insemination services.
- Advisory and on farm paid training services.
- Setting up of Male calf rearing unit
- Setting up of heifer rearing unit.
- Trade on imported animals.
- Low cost farm equipment manufacturing unit. E.g. 24 hrs watering system for small dairy units, Bamboo cages for layer farms etc.

- Permaculture based projects. (Cow dung / Urine / Poultry manure based Organic Fertilizers , Pesticides)

Some CIG related review described below;

A study by Richard (2007) on the social and economic impacts of CIGs approach to extension service in Kenya showed that members of CIGs had significantly increased access to extension services in general. The study sought to find out if membership in CIGs had an influence on HVTCs productivity by making comparison with non-members growing same crops.

Machuki (2013) conducted a study on influence of selected institutional factors on performance of common interest groups (cigs) of small holder farmers in gilgil division, naivasha district, Kenya .The study indicated that access to commodity markets and access to agricultural credit significantly influenced performance of the CIGs while access to training despite being seen as useful and applicable did not significantly contribute to the performance of the CIGs. CIG performance was measured by level of enterprise production, level of cohesion, group leadership skills and level of farmer empowerment.

Banwari et.al (2014) conducted that social participation and psychological assessment of CIG members involved in dairy farming. He showed that majority (82.0%) of members' had medium level of aspiration, 44.4 per cent of CIGs have high self-esteem with respect to success and worthiness. He also indicates that majority of respondents (84.4%) fell in medium category of knowledge level about breeding, feeding, health care, management and fodder production followed by 08.0 per cent and 07.6 per cent in low and high knowledge level categories, respectively. The majority of members (59.6%) had favorable attitude and 32.00 per cent members had unfavorable.

Onyango et.al (2016) showed that Common Interest Groups are farmers with common interest who come together in order to increase farm productivity. Broad objective of this research was to determine influence of Common interest group membership on productivity of indigenous chicken among smallholder farmers. Findings indicated positive influence of group membership on indigenous chicken productivity characterized by better management practices, resulting to increased number of products and income from the enterprise. In conclusion, being a member of

indigenous chicken Common Interest Group influences positively on management practices, improved volumes of products and byproducts resulting to improved profit margins from the enterprise.

M. M. Rana et.al (2018) indicates that changes were occurred regarding livelihood status among the CIG members due to NATP interventions. But it is still possible to change the livelihood status of the CIG members because about 72 percent of the CIG members had highly changed livelihood status. Correlation analyses indicated that the farm size, annual income and extension media contact had significant positive relationships with the change of livelihood status of the CIG members due to NATP (phase-I) interventions. Age, education, household size, farming experience, organizational participation, training received, credit received and agricultural subsidy received had no significant relationship with respondents change of livelihood status due to NATP (phase-I) interventions. So, the CIG members got ample opportunity to change their livelihood status as most of the respondents (about 72 percent) had high status of livelihood.

Richard (2007) examined the economic and social impacts of the common interest group approach to public agricultural extension in Kenya. Significant impact on farmers' access to agricultural credit and marketing. In addition, the approach had a significant impact on the agricultural productivity of group members. When the impact on productivity was disaggregated in accordance with marginalized social categories, a significant impact was found on uneducated farmers and those with more than six children but not on female heads of households. The approach also had a significant positive impact on the quality of life of farmers' wives.

Akal (2014) indicated difference between HVTCs CIG and non-CIG members characterized by increase in level of technical knowledge, yields, incomes and adoption of high value traditional crops. In conclusion, those in CIGs benefited more than non-CIG members by the virtue of being in CIGs and by them participating in CIG activities. The study recommends that, the approach should be part of the extension system but with some modifications in its implementation.

Akal (2014) determined that the influence of Common interest group approach on orphan crops productivity among smallholder farmers. Common Interest Groups are congregations of farmers brought together for the purpose of imparting technologies

in order to increase farm productivity. The study findings indicated positive influence of common interest group approach on orphan crops productivity among members as characterized by increase in yields of the orphan crops. In conclusion, members of common interest groups benefited more than non-members by the virtue of their membership and participating in group activities. It is recommended that the approach be part of the extension system but with some modifications in its implementation to enhance knowledge geared towards commercialization of value chains.

Rana et.al (2020) conducted that The CIG members were found with very much enthusiastic about NATP (phase-I) interventions that could help policy makers to continue their efforts on that issue.

2.3The Relationships between Farmers' Characteristics and Their perception on Various Issues

So far no direct study was found. Therefore, a related review have been described in this section

2.3.1 Age and farmers' perception

Adeola (2012) conducted a study on perceptions of environmental effects of pesticides use in vegetable production by the farmers in Ogbomoso, Nigeria. Adeola found that age had a significant influence on the farmers' perception.

Pal (2009) conducted a study on the perception of organic farmers regarding introduction of ICT in organic farming. Pal found that age had no significant relationship with farmer's perception.

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

Afique (Z006) mentioned that there was no significant relationship between the age of the rural women and their perception of benefits of involvement in agricultural model farm project activities of Sabalamby Unnayan Samity (SUS).

.Sharmin (2005) stated that age of the rural women had no significant relationship with the perception of benefits of involvement in IGAs under a NGO.

Uddin (2004) conducted a study on perception of sustainable agriculture. The findings revealed that age of the respondents had negative significant relationship with their perception of sustainable agriculture.

Sayed (2003) found that age had negative relation with farmers' perception of benefit from using manure towards INM for sustainable crop production by the farmers.

Ismail (1979), Chowdhury (2001) and Alom (2001) obtained similar type of findings in their respective studies.

Islam (2018) studied farmers' perception on the effectiveness of information and communication technology in receiving agricultural information. The study revealed significant relationship of focal variable was found with farmers' age & farming experience.

Kabir (2002) studied perception of farmers on the effects of integrated area development project towards environmental upgradation. The study revealed that there was no significant relationship between age and perception of environmental upgradation. Similar finding was obtained by Fardous (2002) in his study.

Based on the above discussion, it is hypothesized that with the increase of the age, farmers' perception positively influenced.

2.3.2 Educational qualification and farmers' perception

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

Adeola (2012) conducted a study on perceptions of environmental effects of pesticides use in vegetable production by farmers in Ogbomoso, Nigeria. The study revealed that education had a significant influence on the farmers' perception.

Pal (2009) conducted a study on the perception of organic farmers regarding introduction of ICT in organic farming. The study revealed that education had a positive significant influence on the farmers' perception.

Majlish (2007) found that the relationship between education of participant women and their perception of social forestry program of BRAC was positively significant.

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

Sharmin (2005) found that personal education of the rural women had significant positive relationship with their perception of benefits of involvement of IGAs under a NGO.

Islam (2018) studied farmers` perception on the effectiveness of information and communication technology in receiving agricultural information. The study revealed significant relationship of focal variable was found with farmers` education.

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

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

Issa (2011) shows positive and significant correlation between farmer`s perception about the effectiveness of extension delivery channels and level of education.

Fardous (2002) found a significant positive relationship between education of the farmers` and their perception of the forestry development activities of Village and Farm Forestry Program (VFFP) towards sustainable forestry development.

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

Based on the above discussion, it is conducted that with the increase of the educational qualification, farmers` perception positively associated.

2.3.3 Farm size and farmers` perception

Adeola (2012) conducted a study on perceptions of environmental effects of pesticides use in vegetable production by farmers in Ogbomoso, Nigeria. The study revealed that household size had a non-significant influence on the farmers` perception.

Pal (2009) conducted a study on the perception of organic farmers regarding introduction of ICT in organic farming. The study revealed that farm size had no significant relationship with farmer's perception.

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

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

Islam (2018) studied farmers' perception on the effectiveness of information and communication technology in receiving agricultural information. No significant relationship was found with farmers' farm size and farmer's perception of effectiveness of ICTs.

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

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

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

Fardous (2002) found that there was no significant relationship between farm size of the farmers and their perception of Village and Farm Forestry Program (VFFP) towards sustainable forestry development.

Based on the above discussion, it is hypothesized that with the increase of the farm size, farmers' perception positively influenced.

2.3.4 Annual family income and farmers' perception

Pal (2009) conducted a study on the perception of organic farmers regarding introduction of ICT in organic farming. The study showed that annual family income had no significant relationship with farmer's perception.

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

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

Issa (2011) shows positive and significant correlation between farmers' perception about the effectiveness of extension delivery channels and income.

Islam (2018) studied farmers' perception on the effectiveness of information and communication technology in receiving agricultural information. No significant relationship was found with farmers' farm size and farmer's perception of effectiveness of ICTs.

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

Sayed (2003) found that annual family income of the farmers had a significant relationship with their perception of benefit from using manure towards Integrated Nutrient Management (INM) for sustainable crop production.

Kabir (2002) found that there was non-significant relationship between annual family income of the farmers and their perception of the effects of BIADP towards environmental upgradation.

Based on the above discussion, it is hypothesized that with the increase of the annual family income, farmers' perception positively influenced.

2.3.5 Duration of training and farmers' perception

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

Pal (2009) conducted a study on the perception of organic farmers regarding introduction of ICT in organic farming. The study revealed that training received had a positive significant influence on the farmers' perception.

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

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

Sharmin (2005) reported from her study that training exposure of the rural women had no significant relationship with their perception of benefits of involvement in Income Generating Activities (IGAs) under a NGO.

Uddin (2004) from his study concluded that farmers' training exposure had a significant positive relationship with their perception of sustainable agriculture.

Kabir (2002) found that training experience of the farmers had a significant positive relationship with their perception of the effects of BIADP on environmental upgradation.

Fardous (2002) observed that training exposure of the farmers was significantly correlated with the perception of the respondents of VFFP towards sustainable forestry development.

Based on the above discussion, it is hypothesized that with the increase of the duration of training, farmers' perception positively influenced.

2.3.6 Agricultural extension media contact and farmers' perception

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

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

Fardous (2002) conducted a study and found that there was no significant relationship between knowledge of forestry of farmers and their perception of VFFP towards sustainable forestry development.

Kabir (2002) found that extension media contact of the farmers had a significant positive relationship with their perception of the effects of BIADP on environmental up gradation.

Based on the above discussion, it is hypothesized that with the increase of the agricultural extension contact, farmers' perception positively associated

2.3.7 Agricultural work experience and farmers' perception

Issa (2011) shows positive and significant correlation between farmers' perception about the effectiveness of extension delivery channels and farming experience.

Islam (2018) studied farmers' perception on the effectiveness of information and communication technology in receiving agricultural information. The study revealed significant relationship of focal variable was found with farmers' farming experience.

Based on the above discussion, it is concluded that with the increase of the agricultural work experience, farmers' perception positively associated.

2.3.8 Knowledge and farmers' perception

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

Adeola (2012) conducted a study on perceptions of environmental effects of pesticides use in vegetable production by farmers in Ogbomoso, Nigeria. The study revealed that farming knowledge had a significant influence on the farmers' perception.

Majlish (2007) conducted her study regarding perception of participant women on social forestry program of BRAC. She found from her study that the relationship between knowledge on tree plantation and perception of social forestry program of BRAC was positively significant.

Uddin (2004) conducted his study on farmers' perception of sustainable agriculture. He found that knowledge of environment friendly farming had significant and positive relationship with their perception of sustainable agriculture. He further conduct environment friendly farming had higher perception of sustainable agriculture.

Fardous (2002) conducted a study and found that there was a significant positive relationship between knowledge of forestry of farmers and their perception of VFFP towards sustainable forestry development.

Based on the above discussion, it is hypothesized that with the increase of the knowledge, farmers' perception positively associated.

2.3.9 Involvement and farmers' perception

No relevant study was found about involvement with Self organization (CIG) except one. The researcher presented some review related to involvement with other non government organization.

Rahman (2005) in his study found a significant relationship between the duration of involvement with TMSS and their changes in food consumption and housing environment.

Issa (2011) shows positive and significant correlation between farmers' perception about the effectiveness of extension delivery channels and membership of association.

Khan (2006) in his study found that involvement with Grameen Bank had no significant relationship with the impact of Grameen Bank of micro-credit program.

Islam (2007) revealed that involvement with Dipshikha of the respondent had no contribution to the effectiveness of GBA of Dipshikha but had positive contribution to the effectiveness of FDA of Dipshikha.

Based on the above discussion, it is hypothesized that with the increase of the involvement, farmer's perception positively influenced.

2.4 The Conceptual Framework of the Study

The contribution between the experimental variables and the main focus of the study can be clearly delineated with the help of conceptual framework of the study. The researcher was made an attempt to ascertain the farmers' perception on usefulness of CIG under Tangail district as the main focus of the study. It was conceptualized in the research that usefulness of CIG may be influenced and affected by the interacting forces of many socio-economic and others characteristics of the farmers. To make the process conspicuously interpretable a conceptual framework has been presented in a schematic Figure 2.4.

In view of the prime theme of the study, the researcher constructed a conceptual framework which is self-explanatory and is presented in Figure 2.4.

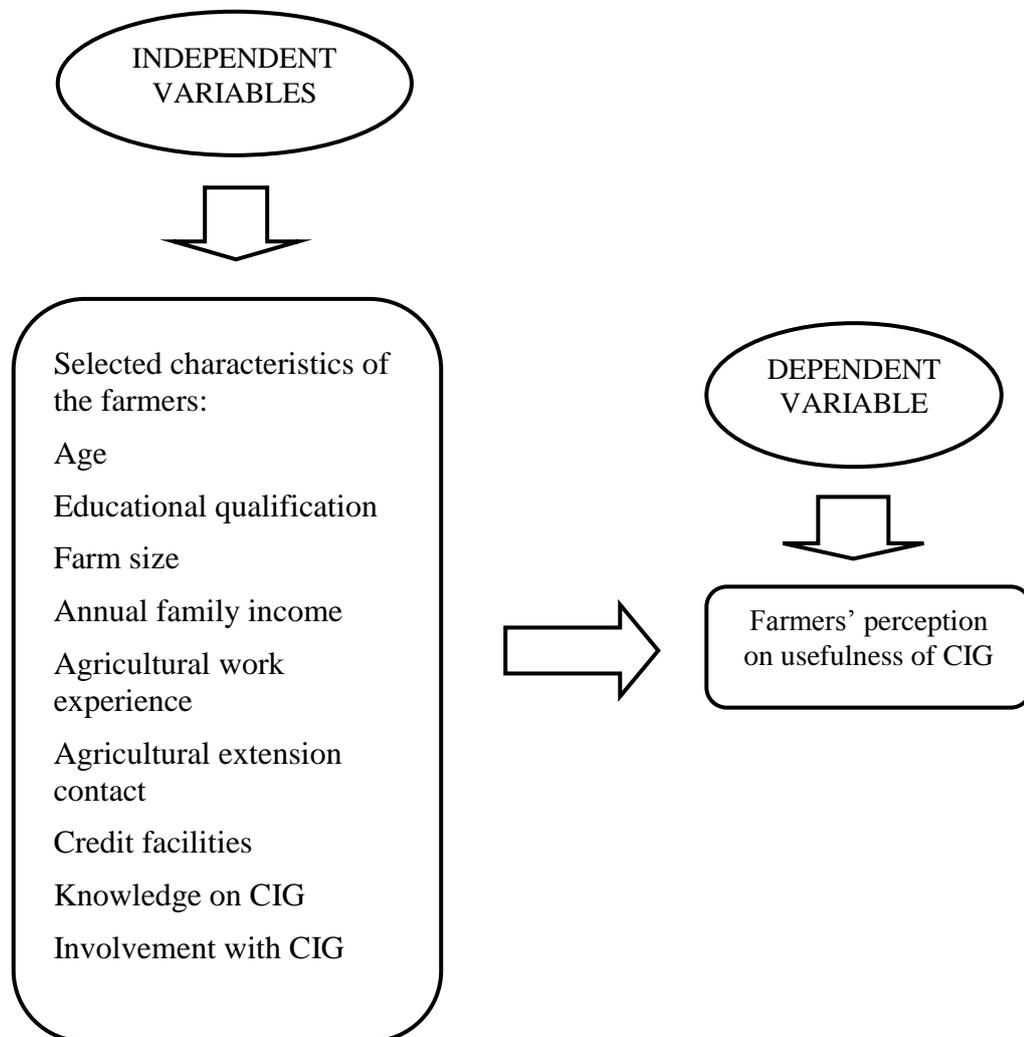


Fig 2.4 Conceptual Framework of the study

CHAPTER III

METHODOLOGY

The method and procedure used in the study are presented in this Chapter. The principal method used in this study was field survey using structured interview schedule. In any scientific research methodology plays an important role. To perform a research work systematically, careful consideration of appropriate methodology was a must. It should be such that it would enable the researcher to collect valid and reliable information to arrive at correct decisions. The methods and procedures followed in conducting this study have been described in this Chapter in the following sections.

3.1 Locale of the Study

The locale of the study included six selected villages namely Silimpur, Galutia, Pachkahonia, Dorjipara, Kandila, Rashulpur, of Silimpur union, Danya union and Gala union of Tangail Sadar upazila under Tangail district. Six villages from each union were selected randomly as the locale of the study. A group sampling procedure was followed. A map of Tangail district showing the Tangail sadar upazila and a map of Tangail sadar upazila showing the union of the study area are presented in Figure 3.1.

3.2 Population and Sampling Procedure

The study location was in Tangail Sadar upazila. Separate lists of farmers of the study villages were prepared by the researcher with the help of Sub-Assistant Agriculture Officer (SAAO) of Tangail Sadar Upazila Agriculture Office. There are 11 unions in Tangail Sadar upazila. Ten CIGs (7 male and 3 female) were formed in every union by the Upazila Agriculture Office under NATP. So there were 110 CIGs in Tangail Sadar upazila. Each CIG had 20 members. Thus, 110 CIGs had 2200 members which constituted the population of the study. A multistage sampling technique was used. At first, out of 11 unions, three unions were selected randomly. Each union has 10 CIG groups. From where two CIGs were randomly selected from each selected union. Each CIG consist of 20 farmers. Therefore, all these 120 farmers ($3 \times 2 \times 20 = 120$) were considered as the sample of this study.

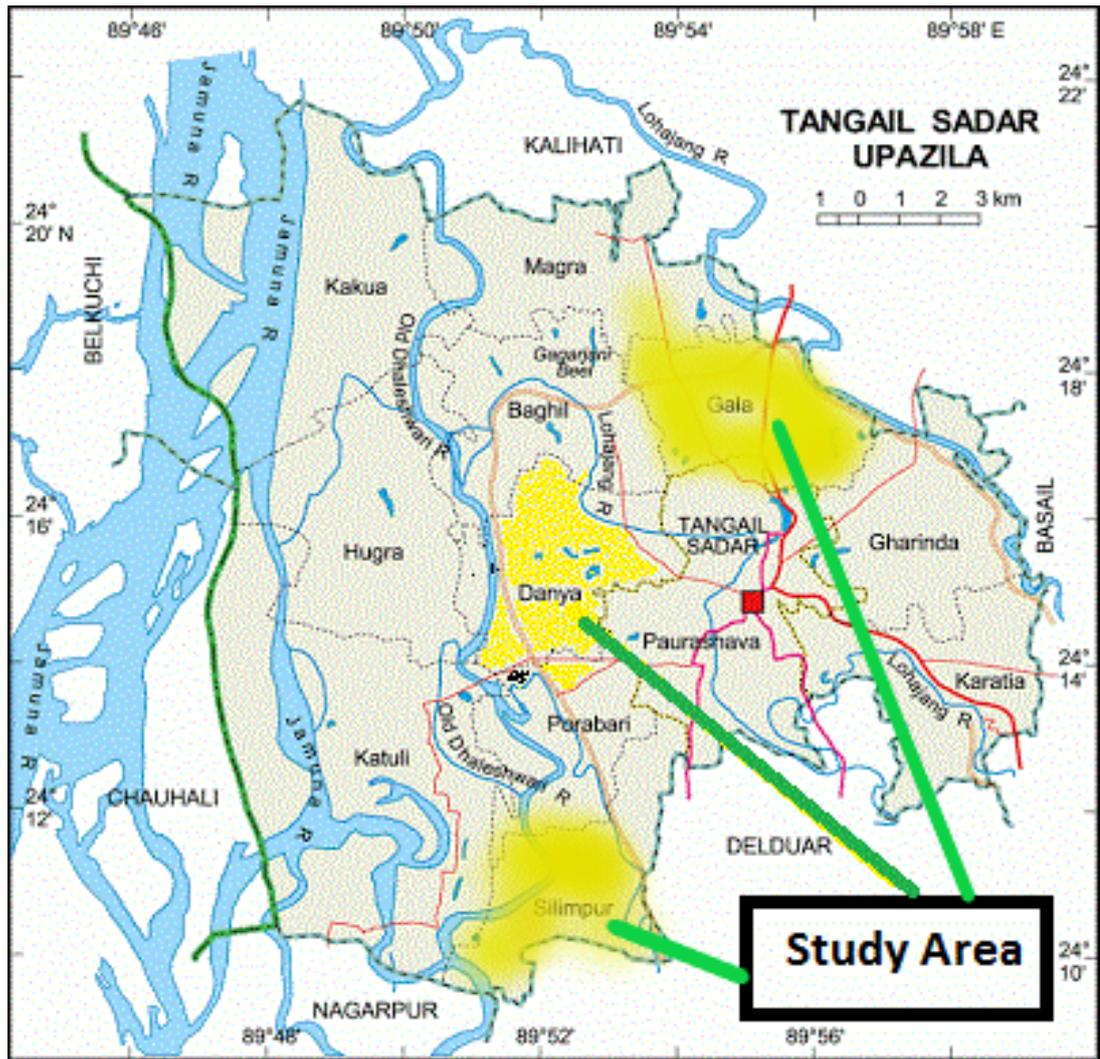


Figure 3.1: A map of Tangail Sadar upazila under Tangail district showing the locale of the study area

The distribution of the sample list from the villages is shown in Table 3.1.

Name of the unions	Name of the Village	Sample size
Danya	Dorjipara	20
	Pachkahnna	20
Silimpur	Silimpur	20
	Galutia	20
Gala	Kandila	20
	Rashulpur	20
Total		120

3.3 Instrument for Collection of Data

An interview schedule was used as the research instrument in order to collect relevant information from the respondents. The schedule was carefully designed and prepared in English, keeping the objectives of the study in view. The questions were arranged systematically.

3.4 Data Collection Procedure

Data were collected from the selected 120 farmers by face to face interview. Questions were asked systematically and explanation was made whenever necessary. The respondents were interviewed at their leisure time so that they can give accurate information in a cool mind. The investigator faced no serious problems. To build rapport and motivation in the interview situations, the researcher endeavored to provide conditions that maximum trust maintained each respondents' interest and minimized status difference. The final data were collected during 1st November to 1st December, 2019.

3.5 Compilation of Data

After completion of field survey, data from the interview schedule were compiled, tabulated and analyzed according to the objectives of the study. In this process, all the responses in the interview schedule were given numerical code values. Local units of measurement were converted into standard units. The responses to the questions in the interview schedule were transferred to master sheet to facilitate tabulation. As soon as the data were entered into the SPSS program, these were analyzed in accordance with the objectives of the study.

3.6 Categorization of Data

For describing the independent and dependent variables, the respondents were classified into appropriate categories. In developing of categories, the investigator was guided by the nature of data and general considerations prevailing in the social system.

3.7 Variables to be Used

Two types of variables were used in this study.

3.7.1 Dependent variable

Dependent variable is the variable that is being measured in an experiment. The variables those are affect during research are called dependent variable. In this study, the dependent variable that is farmers' perception on usefulness of CIG was measured based on farmers agree or disagrees on some statements related to CIG.

3.7.2 Independent variables

Independent variables are the variables that the researcher changes to test their dependent variables .Variables that can take different values and can cause corresponding changes in other variables. In this research, the researcher selected ten characteristics of the respondent as the independent variables. The independent variables for this study are age, educational qualification, farm size, annual family income, duration of training, credit facilities, agricultural work experience, extension media contact, knowledge on CIG, involvement with CIG.

3.7.3 Measurement of independent variables

For conducting the study in accordance with the objectives it was necessary to the independent variables. The independent variables were age, educational qualification, farm size, annual family income, duration of training, credit facilities, agricultural work experience, extension media contact, knowledge on CIG, involvement with CIG. Procedures for measuring these variables are described below:

3.7.3.1 Age

Age of the farmers was measured in terms of actual years from his birth to the time of interview, which was found on the basis of the verbal response of the rural people (Rashid 2014). A score of one (1) was assigned for each year of one's age.

3.7.3.2 Educational qualification

Education was measured as the ability of an individual respondent to read and write or the formal education received up to a certain standard. If a respondent did not attain formal education, his score was assigned as zero (0). A score of 0.5 was given to a respondent who only could sign his/her name. A score of one (1) was assigned for each year of schooling. If a respondent passed the S.S.C examination, his education score was given as 10, 12 for H.S.C, and so on. This variable appears in item number 2 in the interview schedule as presented in Appendix-A

3.7.3.3 Farm size

Farm size of the respondents' farmer was measured using the following formula. The farm size was expressed in hectare.

$$\text{Farm size} = A+B+1/2(C+D) +E$$

Where,

A= Homestead area including pond

B= Own land under own cultivation

C= Land given to others as Borga

D = Land taken from others as Borga

E=Land taken from others as lease

Total farm size of each respondent was categorized into 4 types (Islam, 2007). The farmers who had land bellow 0.20 hectare were considered as marginal farmer. The farmers who had land between 0.20 to 1.00 hectare were considered as small farmers, the farmers who had land 1.00 to 3.0 hectare were considered as medium farmers.

3.7.3.4 Annual family income

Annual family income indicates total earning of a farmer and the members of his family both from agriculture and other socially acceptable regular means such as business, service, etc. during a year. The value of all the agricultural product sencompassing crops, livestock, vegetables, etc. were taken into consideration. For calculation, a score of one (1) was assigned for each one thousand (1000) taka of the annual income of a family. According to their annual income, farmers' income was categorized as low income, medium income and high income

3.7.3.5 Agricultural work Experience:

Agricultural work experience means the experience which was gained by an individual from active farming. The experience of a farmers means the experience he gained directly by performing various farming activities and it was expressed in years. i.e score of 1 was given for each year of experience.

3.7.3.6 Agricultural extension contact

The extension media contact of a respondent was measured on the basis of the response of the media contact user farmers against the extent of his use of selected 10 media by putting tick mark against any one of the five responses: regularly, often,

occasionally, rarely, not at all. The responses were scored as 4, 3, 2, 1 and 0 respectively. The use of extension media contact score of the respondents ranged from 0 to 40 where, 0 indicates not at all and 40 indicates regularly. Based on their extension media contact, the respondents were classified into three categories as low, medium, and high.

3.7.3.7 Credit facilities

A credit facility is a type loan made in a business or corporate finance context. It allows the borrowing business to take out money over an extended period of time rather than reapplying for a loan each time it needs money. For calculation, a score of one (1) was assigned for each one thousand (1000) taka of the credit facilities.

3.7.3.8 Duration of training

Training received was measured by total number of days of agricultural training by the farmer in his/her life. One score was assigned for each day of training received. According to duration of training, the respondents farmers were categorized as having, low training and medium training and high training.

3.7.3.9 Involvement with CIG

Involvement with CIG of the members was measured on the basis of the nature of membership and duration of participation in CIG. Weight was assigned for involvement with CIG of a member with the following manner:

Nature of participant	Weight
General member	1
Executive member	2
Treasurer/General secretary/Vice-president	3
President	3

Then these weights were multiplied by number of years, the respondent's membership in CIG to get the involvement in CIG score. For example if a farmer has been a general member of the CIG group for 10 years his obtained score will be (1×10=10).

3.7.3.10 Knowledge on CIG

CIG related knowledge of a respondent was measured by using 11 different kinds of questions in relation to various CIG related strategies. It was measured in scores. A respondent was given full score for correct response. However, partial score was given for partially correct response and a 'zero' score was given for wrong or no

answer. The summation of score obtained by a respondent was the knowledge score of the respondent. The CIG knowledge score could range from 0 to 22 where '0' indicating no CIG knowledge and '2' indicating the highest CIG knowledge.

3.7.4 Measurement of dependent variable

Farmers' perception on usefulness of CIG was the dependent variable of the study. On the basis of this main aspect, the researcher obtained knowledge by visiting the study area, discussing with the farmers and local leaders at the time of collecting data. Besides, the researcher discussed with the UAO, SAAO and other related persons of the respective study area. Farmers' perception on usefulness of CIG was measured on the basis of (16) common perception statements related to CIG activities and objectives. Farmers response was captured using 5point likert type modified scale ranging from 'strongly disagree' (1) to 'strongly agree' (5).The scores for responses against all the 16 perceptions were added together to obtain one's perception score. Therefore, perception score of the respondents could range from 16 to 80.

3.8 Statement of the Hypothesis

A hypothesis is a conjectural statement of the relations between two or more variables. The major research hypothesis for the study was:

There was relationship between farmers' perception and their selected characteristics including age, educational qualification, annual family income, farm size, duration of training, involved with CIG, agricultural extension contact, knowledge on CIG, agricultural work experience, credit facilities, farmers' perception on Usefulness of CIG. If null hypothesis was rejected on the basis of statistical test, it was assumed that there was a relationship between the concerned variables. And, if the null hypothesis was not rejected, it was assumed that there was no relationship between the farmers' perception on the usefulness of CIG and their selected characteristics.

3.9 Statistical Technique

The analysis was performed using Statistical Package for Social Sciences (SPSS V20). Descriptive analyses such as range, number, percentage, mean, standard deviation were used whenever possible. To find out the contribution of the identified characteristics of the farmers to their perception on the usefulness of CIG approach, multiple regression was used. Throughout the study, five percent (0.05) level of probability was used as basis of rejecting a null hypothesis.

CHAPTER IV

RESULTS AND DISCUSSION

The findings of the study and their interpretation have been presented in this Chapter. This Chapter has been divided into three sections. The first section deals with the selected individual characteristics of the farmers according to the objective of the study, while the second section deals with the farmers' perception on the usefulness of common interest group approach. Finally, in the third section deals with contribution of the farmers' selected characteristics on their perception on the usefulness of CIG has been discussed.

4.1 Selected Characteristics of the Farmers

The findings of the farmers' selected characteristics have been presented and discussed (Table 4.1) in this section. The selected characteristics are: age, educational qualification, farm size, annual family income, agricultural work experience, extension media contact, credit facilities, duration of training, knowledge on CIG, involvement with CIG.

Table 4.1 The salient features of the selected characteristics of the farmers

Categories	Measuring	Range		Mean	SD
		Minimum	Maximum		
Age	Years	23	78	49.62	12.39
Educational qualification	Year of schooling	0	18	6.18	4.98
Farm size	Hectare	0.105	1.907	0.60	0.39
Annual income	'000' taka	60	850	252.93	172.11
Agricultural work experience	Years	5	50	26.41	11.03
Agricultural extension contact	score	12	18	14.25	1.52
Credit facilities	'000' taka	0	600	23.83	71.29
Duration of training	No of days	1	4	2.85	0.50
Knowledge on CIG	score	4	14	6.75	1.94
Involvement with CIG	score	1	33	15.23	8.91

4.1.1 Age

The age of the farmers has been varied from 23 to 78 years with a mean and standard deviation of 46.62 and 12.387 respectively. Based on their age, the farmers were classified into three categories namely; young, middle and old aged (Rashid, 2014). The distribution of the farmers in accordance of their age is presented in Table 4.2.

Table 4.2 Distribution of the farmers according to their age

Categories	Respondents		Mean	SD
	Number	Percent		
Young age (up to 35 years)	21	17.5	46.62	12.38
Middle age (36 to 50 years)	44	36.7		
Old age > 51 years	55	45.8		
Total	120	100.0		

Table 4.2 reveals that the old aged farmers comprised the highest proportion (45.8%) followed by middle aged (36.7%) and the lowest proportion were made by young aged (17.5%). Data also indicates that the middle and old aged respondents constitute almost 82.5% of total respondents. Data further furnish that middle aged and old aged farmers are generally chosen for CIG approach. However, young age farmer should also be included in CIG for achieving better objectives.

4.1.2 Educational qualification

The level of education scores of the respondents ranged from .0 to 18 with the mean of 6.175 and the standard deviation was 4.975. Based on their educational scores, the farmers were classified into four categories namely; illiterate, primary level, secondary level and above secondary level. The distributions of the respondents according to their level of education are presented in Table 4.3.

Table 4.3 shows that farmers under secondary education category constitute the highest proportion (31.7%) followed by the primary education (25.0%). On the other hand, the lowest 15.0% above secondary education and 28.3% illiterate category. Education broadens the horizon of outlook of farmers and expands their capability to analyze any situation related to common interest group. An educated farmer is likely to be more responsive to the modern facts, ideas, technology and information of common interest group.

Table 4.3 Distribution of the farmers according to their educational qualification

Categories	Respondents		Mean	SD
	Number	Percent		
Illiterate (0 To .5)	34	28.3	6.175	4.975
Primary Level (1 To 5)	30	25.0		
Secondary Level (6 To 10)	38	31.7		
Above Secondary Level (>10)	18	15.0		
Total	120	100.0		

To adjust with the same, they would be progressive minded to adopt as well as involve with modern agril-base facilities of agriculture along with searching for the opportunities to improved crop production. So Upazila Extension Co-ordination Committee (UECC) and Union Extension Facilitation Team (UEFT) should encourage the literate CIG members to take an initiative for providing non-formal education for the illiterate CIG members as a intra organizational development activity.

4.1.3 Farm size

The farm size of the farmers varied from .1052-1.9068 hectares (ha.). The average farm size was .599 hectare and the standard deviation was 0.394. This farm size average was lower than the national average of 0.91 hectare (BBS, 2013). On the basis of farm size, the respondents were classified into three categories (according to DAE, 1999) namely marginal, small and medium shown in Table 4.4

Data in Table 4.4 reveals that the majority of the respondents (76.7%) had small farm size, while 7.50% have marginal farm and 15.8% have medium farm size. The small farmers is the more involved with CIG than the others two categories of the farmers. The findings of the study revealed that majority 92.5% of the farmers were small to medium sized farm holder. Small farmers are more in number in the study area so their participation is highest than others

Table 4.4 Distribution of the farmers according to their farm size

Categories	Respondent		Mean	SD
	Number	Percent		
Marginal (Up To .2 ha)	9	7.5	0.599	0.394
Small (0.21-1.0 ha)	92	76.7		
Medium (1.01-3.0 ha)	19	15.8		
Total	120	100.0		

.NATP had prioritized with a particular focus on small and medium farmers, so this finding cover the NATP requirement. The average farm size of the study area is 0.59 hectares which is almost similar to national average of 0.78 hectares in Bangladesh (BBS, 2008).

4.1.4 Annual family income

Annual family income scores of the respondents ranged from Tk.60 to Tk. 850 thousand with the average of Tk. 252.93 and the standard deviation was Tk. 172.110. From the observed range, on the basis of the annual family income, the respondents were classified into three categories (observed range) namely low income, medium income and high income as shown on Table 4.5. Table

4.5 Distribution of the farmers according to their annual family income

Categories	Respondents		Mean	SD
	Number	Percent		
Low income (up to 80)	6	5.0	252.93	172.110
Medium income (81-400)	97	80.8		
High income (>400)	17	14.2		
Total	120	100.0		

From Table 4.5, it was observed that the highest portion (80.8%) of the respondents had medium annual family income while 14.2% respondents had high and 5.0% had low annual family income. That is also indicate that the majority of the farmers had medium family income because they are more active than others farmers. Overwhelming majority (95%) farmers have medium to high level annual family income. But more family income may allow the CIG members to invest more in agricultural production as well as possess more favorable perception about CIG. So, authority should take care about it.

4.1.5 Agricultural work experience

Agricultural work experience scores of the respondents were found to be varying from 5 to 50 days there with the average of 26.41 and the standard deviation was 11.028. From the observed range, on the basis of agricultural work experience, the respondents were classified into three categories (observed range) namely low experience, medium experience and high experience as shown in Table. 4.6.

Table 4.6 Distribution of the farmers according to their agricultural work experience

Categories	Respondents		Mean	SD
	Number	Percent		
Low Experience (Up To 15)	30	25.0	26.41	11.028
Medium Experience (16-40)	80	66.7		
High Experience (>40)	10	8.3		
Total	120	100.0		

Data presented in Table 4.6 showed that the highest proportion (66.7%) of the respondents belonged to medium agricultural work experience category as compared to 25.0% and 8.3% having low and high agricultural work experience category, respectively. Thus, majority (91.7%) farmers have low to medium agricultural work experience. Farmers who have medium agricultural work experience are more active in this group because medium agricultural work experience farmers want to be more experienced through training facilities and others CIG activities.

4.1.6 Agricultural extension contact

An extension contact score was computed for each respondent on his extent of contact with 10 selected media. Each respondent was asked to mention the frequency of his contact with each of the 10 selected media. Extension media contact scores of the farmers ranged from 12 to 18 with an average of 14.25 and standard deviation of 1.51. It was measured as one's extent of exposure with different information sources. On the basis of their extension media contact, the respondents were classified into three categories (Mean±SD) namely, low, medium and high contact. The scale used for computing the extension contact score of a respondent is given Table 4.7

Table 4.7 Distribution of the farmers according to their extension media contact

Categories	Respondents		Mean	SD
	Number	Percent		
Low (Up To 13)	33	27.5	14.25	1.51
Medium (14-16)	76	63.3		
High (>16)	11	9.2		
Total	120	100.0		

Data contained in Table 4.7 indicated that the highest proportion (63.3%) of the respondents had medium extension media contact as compared to 27.5% and 9.2% having low and high media contact respectively. It was assumed that the more contact an individual would have with different information sources, the more he becomes educated and knowledgeable.

4.1.7 Credit facilities

Credit facilities scores of the respondents ranged from Tk.0 to Tk. 850 thousand with the average of Tk. 23.83 and the standard deviation was Tk.71.288. From the observed range, on the basis of the credit facilities, the respondents were classified into four categories (observed range) namely no credit facilities, low credit facilities, medium credit facilities and high credit facilities as shown on Table 4.8.

Table 4.8 Distribution of the farmers according to their credit facilities

Categories	Respondents		Mean	SD
	Number	Percent		
No credit facilities	85	70.8	23.83	71.288
Low credit facilities (1-80)	25	20.8		
Medium credit facilities (81-400)	9	7.5		
High credit facilities (>400)	1	0.8		
Total	120	100		

From Table 4.8 it was observed that the highest portion (70.8%) of the respondents had no credit facilities while 20.8% respondents had low, 7.5% had medium and .8% had high credit facilities. That also indicates that the majority of the farmers had no credit facilities because CIG provide fund, seed and fertilizer to the farmers. Overwhelming majority (91.6%) farmers have no to low credit facilities.

4.1.8 Duration of training

Training scores of the respondents were found to be varying from 1 to 4 days there with the average of 2.85 and the standard deviation was 0.496. From the observed range, on the basis of duration of training, the respondents were classified into three categories (observed range) namely ; low duration training, medium duration training, and high duration training as shown in Table. 4.9.

Table 4.9 Distribution of the farmers according to their duration of training

Categories	Respondents		Mean	SD
	Number	Percent		
Low duration training (Up To 2)	21	17.5	2.85	0.496
Medium duration training (2-3)	94	78.3		
High duration training (>3)	5	4.2		
Total	120	100.0		

Data presented in Table 4.9 showed that the highest proportion of the respondents (78.3%) belonged to medium training category as compared to 17.5% and 4.2% having low and high training category respectively. Overwhelming majority (95.8%) farmers have low to medium training. Persons received training in any agricultural base they are more active in the group. So, NATP should emphasized on intensive training program of more than three days for strengthening CIG as a community institution so that they can be able to take the integrated agricultural development responsibilities through Farmers Information and Advice Centre (FIAC) in future.

4.1.9 Knowledge on CIG

The score of the knowledge on CIG ranged from 4-14 against the possible range of 0-22 with a mean and standard deviation of 6.75 and 1.937 respectively. On the basis of knowledge on CIG farmers were classified into three categories (expected range) such as, less knowledgeable, moderately knowledgeable and highly knowledgeable on CIG. The distribution of the farmers according to their knowledge on CIG range scores is shown in the Table 4.10.

Table 4.10 Distribution of the farmers according to their knowledge on CIG

Categories	Respondents		Mean	SD
	Number	Percent		
Less knowledgeable (Up To 7)	85	70.8	6.75	1.937
Moderately knowledgeable (8-13)	33	27.5		
Highly Knowledgeable(>13)	2	1.7		
Total	120	100.0		

Data presented in Table 4.10 shown that the majority of the respondents (70.8%) were found less knowledgeable as compared to a little more than one fourth (27.5%) and only 1.7% of the respondents were found moderately and highly knowledgeable about CIG approach, respectively. Knowledge is to be considered as vision of an explanation in any aspect of the activities regarding CIG group. It is act or state of understanding; clear perception of fact or truth, that helps an individual to foresee the consequence he may have to face in future. It makes individuals to become rational and conscious about related field. The fading of the present study revealed that most (98.3 percent) of the CIG members had less to moderate knowledge on CIG .The researcher found very low interaction among the CIGs in the study area. There was almost no interaction with Upazila Extension Co-Ordination Team (UECC)and had very low participation in FIAC, which was ultimate the focus point of CIGs for their agricultural activities. Therefore, it can be said that the knowledge of the CIG members could be increased by interaction among the CIGs and with FIAC.

4.1.10 Involvement with CIG

Involvement with CIG score of the respondents ranged from 1 to 33. The mean score was 15.23with the standard deviation 8.906. From the observed range, on the basis of involvement with CIG the respondents were classified into three categories (Mean \pm SD) namely; low involvement, medium involvement and high involvement, as shown in Table 4.11.

Table 4.11 Distribution of the farmers according to their involvement with CIG

Categories	Respondents		Mean	SD
	Number	Percent		
Low involvement (up to 7)	13	10.8	15.23	8.906
Medium involvement (8-24)	87	72.5		
High involvement (>24)	20	16.7		
Total	120	100.0		

Data contained in Table 4.12 revealed that the majority (72.5%) of the farmers had medium involvement as compared to 16.7% and 10.8% having high and low involvement with CIG respectively. The majority (89.2 %) of the farmers had in medium to high involvement with CIG. Involvement with CIG helps a farmer to grow leadership capabilities among its members. It was might be due to that the member of the executive body posses their position from the beginning of the CIG and the general members had little opportunity to hold the senior position of the CIG. So authority should take an initiative to increase leadership capability by providing executive position of the members through create competition for better performance in both agricultural productivity and their perception.

4.1.11 Farmers perception on usefulness of CIG

The observed perception scores of the respondents ranged from 28 to 45 against the possible range of 0-56. The mean scores were 63.916 with the standard deviation of 5.944 Based on their perception, the respondents were classified into three categories (Mean±SD) namely, less favorable , moderately favorable and highly favorable. The distribution of the farmers' according to their perception is shown in the Table 4.11.

Table 4.12 Distribution of the farmers according to their perception

Categories	Respondents		Mean	SD
	Number	Percent		
Less favorable (up to 57)	22	18.3	63.916	5.944
Moderately favorable (58-68)	75	62.5		
Highly favorable (>68)	23	19.2		
Total	120	100.0		

Findings shown in Table 4.13 revealed that the majority (62.5%) of the respondents had moderately favorable attitude towards CIG’s usefulness while 18.3% and 19.2% having less and highly favorable attitude towards CIG’s usefulness ,respectively. Thus, it can be said that the respondents who have moderately to highly favorable perception on usefulness of CIG were more active in this group and they can make this group more effective. However, still 18.3% farmers possess less favorable perception on usefulness of CIG which need to change or improved their perception through taking various steps.

4.3 The Contribution of the Selected Characteristics of the Respondents to their Perception on Usefulness of CIG

In order to estimate the farmers’ perception on usefulness (CIG), multiple regression analysis was used which is shown in Table 4.13.

Table 4.13 multiple regression coefficients of the contributing variables related to the farmers perception on usefulness of CIG

Dependent variable	Independent variable	B	ρ	R ²	Adj R ²	F
Farmers’ perception on usefulness of CIG	Age	-.110	0.466	0.411	0.357	7.59
	Educational qualification	-.077	0.462			
	Farm size	.260	0.002*			
	Annual income	.079	0.316			
	Agricultural work experience	.127	0.374			
	Agricultural extension contact	-.147	0.067			
	Credit facilities	.006	0.939			
	Duration of training	.251	0.005*			
	Knowledge on CIG	--.054	0.540			
	Involvement with CIG	.361	0.000**			

* Significant at $p < 0.05$; ** Significant at $p < 0.01$

Table 4.13 shows that there is a significant contribution of the respondents, farm size, duration of training and involvement with CIG on usefulness of CIG. Of these, involvement with CIG was the most important contributing factors (significant at the 1% level of significant) and farm size and duration of training (significant at 5% level

of significant) while coefficients of other selected variables didn't have any contribution on farmers' perception on the usefulness of CIG. The value of R^2 is a measure of how of the variability in the dependent variable is accounted by the independent variables. So, the value of $R^2 = 0.411$ means that independent variables accounts for 41% of the variation in farmers perception on usefulness of CIG. The F ratio is 7.59 which is highly significant ($p < 0$).

However, each predictor may explain some of the variance in respondents' perception on usefulness of CIG simply by chanced. The adjusted R^2 value penalizes the addition of extraneous predictors in the model, but values 0.357 is still show that variance is farmers perception on usefulness of CIG can be attributed to the predictor variables rather than by chanced the suitable model (Table 4.13). In summary, the models suggest that the respective authority should be consider involvement with CIG, farm size and duration of training and in this connection some predictive importance have been discussed below:

4.3.1 Significant contribution of involvement with CIG to the farmers' perception on usefulness of CIG

The contribution of involvement with CIG to farmers' perception on usefulness of CIG was measured by the testing the following null hypothesis; "There is no contribution of involvement with CIG to the farmers' perception on usefulness of CIG.

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the involvement with CIG was at 1% significance level ($p=0.00$).
- b. So, the null hypothesis could be rejected.
- c. The β -value of level of involvement with CIG was (0.361).

Rahman (2005) Issa (2011) found that there was a significant relationship between the duration of involvemen and farmers' perception.

So, it can be stated that as involvement with CIG increased by one unit, farmers' perception on usefulness of CIG increased by 0.361 units. Considering the effects of all other predictors are held constant. This represent that involvement with CIG was

an important factor in farmers' perception on usefulness of CIG. Duration of involvement of a member with CIG as president or general secretary or others position create an opportunity for learning, connectivity with the authority and have to work some obligatory organizational, agricultural, community development activities according to organizational rules and regulation, also helps to know about advantage, disadvantage and objective of CIG. Based on the above finding, it can be said that farmers have more involvement with CIG increased their perception on usefulness of CIG. This implies that with the increase of involvement with CIG of the farmers will increase their perception on usefulness of CIG.

4.3.2 Significant contribution of farm size to the farmers' perception on usefulness of CIG

From the multiple regression, it was concluded that the contribution of farm size to the farmers' perception on usefulness of CIG. Agriculture was measured by the testing the following null hypothesis;

“There is no contribution of farm size to the farmers' perception on usefulness of CIG”.

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of the farm size was significant at 5% level (0.002).
- b. So, the null hypothesis could be rejected.
- c. The β -value of farm size was (0.260).

Uddin (2004) Sayeed (2003) observed that farm size of the farmers had a significant positive relationship with their perception.

So, it can be stated that as farm size increased by one unit, farmers' perception increased on usefulness of CIG by 0.260 units. Considering the effects of all other predictors are held constant.

Multiple regressions showed that farm size of the farmers was second highest positive contribution to their perception on usefulness of CIG. This implies that with the increase of farm size of the farmers will also increase their perception on usefulness of CIG. Farm size can help farmers to increase their crop productivity, adopt new

technology, keep best outcome .Therefore, they found to be highly satisfied with CIG approach.

4.3.3 Significant contribution of duration of training to the farmers' perception on usefulness of CIG

From the multiple regression, it was concluded that the contribution of duration of training to the farmers' perception on usefulness of CIG

Agriculture was measured by the testing the following null hypothesis;

“There is no contribution of duration of training to the farmers' perception on usefulness of CIG”

The following observations were made on the basis of the value of the concerned variable of the study under consideration.

- a. The contribution of training experience was significant at 5% level(0.005).
- b. So, the null hypothesis could be rejected.
- c. The β -value of training experience was (0.251).

Kabir and Rainis (2012) Pal (2009) Majlish (2007) Uddin (2004) Fardous (2002) found that training had a significant influence on the farmers' perception.

So, it can be stated that as duration of training increased by one unit, farmers' perception on usefulness of CIG increased by 0.251 units. Considering the effects of all other predictors are held constant. From the multiple regressions, it was concluded that training experience of the farmers had third highest positive contribution to their perception farmers' perception on CIG. This implies that with the increase of duration of training of the farmers will increase their perception on usefulness of CIG. In fact training helps to know new technology, upgrade skills and ultimately help participants to ensure better outcome. Therefore, respondents should offer more skill training on various aspects of agriculture

CHAPTER V SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The study was conducted in 6 CIGs of 6 villages of Tangail Sadar upazila under Tangail district. Thus, 120 farmers constituted the sample of the study. A well structured interview schedule was developed based on objectives of the study for collecting information. The researcher herself collected data through personal contact. The selected characteristics were: age, level of education, farm size, annual family income, agricultural work experience, agricultural extension contact, duration of training, credit facilities, involvement with CIG, knowledge on CIG, farmers perception on usefulness of CIG. Data collection was started in 1 November, 2019 and completed in 1 December, 2019. Various statistical measures such as frequency counts, percentage distribution, mean, and standard deviation were used in describing data. Regression test was used to explore relationship between the concerned variables. The major findings of the study are summarized below:

5.1.1 Selected characteristics of the farmers (Independent variable)

The major findings of the study are summarized below:

Age

The highest proportion (45.8%) of the respondents was in old aged category, compared to 36.7% and 17.5% of them being medium and young aged category, respectively.

Educational qualification

Secondary education constituted the highest proportion (31.7%) and the lowest (15.0%) in above secondary.

Farm size

The small farm size holder constitutes the highest proportion (76.7%) followed by medium size farm (15.8%).

Annual family income

The highest proportion of the farmers (80.8%) had medium income; whereas, 14.2% and 5% of them had high and low income respectively.

Agricultural work experience

The highest proportion of the farmers (66.7%) had medium agricultural work experience whereas, 25.0% and 8.3% of them had low and high agricultural work experience.

Agricultural extension contact

The most astounding extents (63.3%) of the farmers had medium agricultural extension media contact, whereas 27.5% and 9.2% had low and high extension media contact.

Credit facilities

The highest proportion of the farmers (70.8%) had no credit facilities; whereas, 20.8% & 7.5% of them had low and medium credit facilities and .8% had high credit facilities respectively.

Duration of training

The highest proportion (78.3%) of the farmers had medium training and whereas, 17.5% and 4.2% had low and high training respectively.

Knowledge on CIG

Scores of knowledge on CIG of the respondents could range from 0 to 22 while the observed scores ranged from 4 to 14. The mean score was 6.75 with the standard deviation 1.937. The most noteworthy extent 70.8% of the respondents were less knowledgeable on CIG, while 27.5% of them were moderately and 1.7 % highly knowledgeable on CIG.

Involvement with CIG:

The highest proportion of the farmers (72.5%) had medium involvement with CIG; whereas, 16.7% and 10.8 had high and low involvement with CIG respectively.

5.1.2. Farmers' perception on usefulness of CIG

The highest proportion (62.5%) of the respondents had moderately favorable perception, while 18.3% had less favorable and 19.2% had highly favorable perception on usefulness of CIG.

5.1.3 Contribution of the selected characteristics of the farmers' perception about the usefulness of agricultural extension CIG approach

Involvement with CIG, farm size and duration of training had significant positive contribution to farmers' perception on usefulness of CIG. Characteristics of the farmers like age, educational qualification, annual family income, agricultural work experience, agricultural extension contact, credit facilities, knowledge on CIG, involvement with CIG had no contribution to their perception on usefulness of CIG.

5.2 Conclusions

Conclusion is the final decision or judgment, which is placed through contention at the end or termination of a research work. Conclusion should be so constructive that its words and contentions must draw the attention of the concerned individual/organizations. The findings and relevant facts of research work prompted the researcher to draw following conclusions.

- (i) The findings revealed that an overwhelming majority (81.7%) of the respondents had moderately favorable to highly favorable perception on usefulness of CIG at the study area. Still there is a scope to improve farmers' perception through involving more with CIG, and increasing farm size and duration of training.
- (ii) Involvement with CIG had the highest contribution to the farmers' perception on usefulness of CIG. It also showed that majority of the respondents (72.5%) had medium involvement with CIG. The result suggests that establishment of more involvement with CIG and farmers' involvement will increase their perception on usefulness of CIG.
- (iii) Farm size of the respondents had a significant contribution to the farmers' perception on usefulness of CIG, consequently. The majority (76.7%) of the respondents had small farm size while 15.8% had medium farm size and 7.5% of the farmers had marginal farm size. Farm size helps the farmers to make favorable perception on usefulness of CIG which ultimately helps the farmers to follow cropping strategies.
- (iv) Maximum 78.3% of the respondents had medium training as compared to 17.5% and 4.2% having low and high training respectively on farmers' perception on usefulness of CIG. The regression analysis revealed that

duration of training of the respondents was a contributing factor to the farmers' perception on usefulness of CIG. Therefore, it may be said that the higher duration of training of the respondents higher the perception of the farmers.

5.3 Recommendations

5.3.1 Recommendation for policy implications

On the basis of the observation and conclusions drawn from the findings of the study following recommendation is made:

- (i) Duration of involvement with CIG of the members had significant positive relationship with their perception on usefulness of CIG .Involvement with CIG had the highest contribution to the farmers' perception on usefulness of CIG. Therefore, it was recommended that steps should be taken to increase the involvement with the CIG. DAE should give more facilities to the farmers, SAAO and agricultural officers have to encourage the farmers about the group and tell them the advantage about the group which provide fund to the farmers for seeds, fertilizer, and intensive care of crops. It can be also recommended that authority should take care to establish the NATP rule which ultimately creates competition based leadership capability of the CIG members for strengthening CIG.
- (ii) Farm size of the CIG members had significant positive relationship with their perception on usefulness of CIG. In this study area 92.5 percent members are small to medium sized farmers. Therefore, it may be recommended that DAE should take necessary program like - intensive and vertical expansion agricultural practices, motivate to use up to date technology, high value crop production, commercial vegetable and fruit production, integrated farming, value adding activities, minimizing yield gap etc. for effective and sustainable productivity of their farms .Farm size increases farmers' productivity. so to increase the farmers' perception on usefulness of CIG .
- (iii) Duration of training had significant positive relationship with their perception on usefulness of CIG. Majority (95.8%) of the farmers of the study area had medium training to low training on perception on

usefulness of CIG. So to increase duration of training it will be also increased farmers' perception on usefulness of CIG. Therefore, it may be recommended that concerned authority should take necessary training and skill development program like - motivational training and tours, organizational management and leadership behavior training, ensure monthly meeting of CIG and regular interaction among the CIGs.

5.3.2 Recommendations for further research

A single research work is very inadequate to have in-depth understanding of the farmers' perception on the usefulness of CIG approach. Further studies should be undertaken covering more dimensions of the same issue. Therefore, the following suggestions are made for further research work:

- The present study was conducted in Tangail Sadar upazila under Tangail district. It is recommended that similar studies should be conducted in other areas of the country.
- This study investigated the relationship of only eleven characteristics of the farmers with their perception on the usefulness of CIG approach. Therefore, it is recommended that further study should be conducted with other independent and dependent variables.
- To arrive at generalization as to the CIG activities of the CIG members in the country and to draw up policy measures for the betterment of the whole nation, similar research studies may be undertaken at other locations of the country.
- The study was conducted to find out the farmers' perception on usefulness of CIG approach. Further research should be taken to find out the extent of participation in agricultural development, income generating activities of the CIG members and other similar types of topics.
- This finding indicates that age and family size of the CIG members had no significant relationship with their perception on the usefulness of CIG. In this connection, further verification is necessary to valid at relationships.
- Farmers' perception on the usefulness of CIG maybe determined by using other ways and methods which may be used in conducting further research.

- Further study should consider the longitudinal approach to determine sustainable impact of CIG.

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APPENDIX-A

AN ENGLISH VERSION OF THE INTERVIEW SCHEDULE

Department of Agricultural Extension and Information system

Sher-e-Bangla Agricultural University, Dhaka

An Interview Schedule for the study on

FARMERS' PERCEPTION ON THE USEFULNESS OF COMMON INTEREST GROUP APPROACH

Serial no

Name of the respondent: Village.....

Union:Upazila:

District:

(Please provide following information. Your information will be kept confidential and will be used for research purpose only)

Part-A

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

2. **Educational Qualification:** Please mention your educational status from the following:

- i. Can't read and write
- ii. Can sign name only
- iii. Studied up to class:

3. **Land Size:** Please indicate area of your land according to use

SL. No	Types of land ownership	Area of Land		Total Area (Hectre)
		Local unit	Hectare	
i	Homestead area			
ii	Own land under own cultivation			
iii	Land taken from others as lease			
iv	Land taken from others as Borga			
iv	Land taken from others as Borga			
v	Land given to others as Borga			
Total =A+B+1\2(C+D)+E				

4. Annual Family Income: Please indicate the production and income of your family has earned last year from different sources

Source of income		Income (Tk.)
A.	Agricultural Sources	
	Rice	
	Other crops	
	Livestock	
	Poultry	
	Fisheries	
B.	Non-agricultural Sources	
	Business	
	Service	
	Labor	
	Remittance	
	Others (please specify).....	
	Total(A+B)=	

5. Agricultural Work Experience: How long have you been involved in agriculture?years.

6. Agricultural Extension Contact: Please state the extent of your contact with the following communication media.

Sl. No	Extension Media	Extent of contact				
		Regularly (4)	Often (3)	Occasionally (2)	Rarely (1)	Not at all(0)
i.	Model/Progressive Farmer	>5 times/ Month	4-5 times/ month	2-3 times/ month	1 time/ month	
ii.	Sub-Assistant Agriculture Officer (SAAO)	>5 times/ Month	4-5 times/ month	2-3 times/ month	1 time/ month	
iii.	NGO worker	>5 times/ month	4-5 times/ month	2-3 times/ month	1 time/ month	
iv.	Upazila Agriculture officer	>6 times/ year	5-6 times/ year	3-4 times/ year	1-2 times/ year	

v.	Agricultural Extension Officer (AEO)	>6 times / year	5-6 times/ year	3-4 times/ year	1-2times/ year	
vi.	Listening agricultural program in radio	>5 times/ week	4-5 times/ week	2-3 times/ week	1-2 times/ week	
vii.	Watching agricultural program on TV	>5 times/ week	4-5 times/ week	2-3 times/ week	1-2 times/ week	
viii.	Reading printed media(e.g. agricultural news, poster, leaflet)	>6 times /month	3-4 times /month	2-3 times/month	1-2 times/ month	
ix.	Participation in group discussion	>6 times /month	4-5 times/ month	1-3 times/ month	1-2 times/ month	
x.	Participation in demonstration meeting	>3 times/ month	2-3 times/ month	1-3 times/ month	1-2 times/ month	
Total						

7. Credit Facilities : Please indicate your source of credit and amount if you have any debt.

Source of credit	Amount (TK)
Neighbors	
Friends	
NGO'S	
Organizations	
Relatives	
Bank	
Others	
Total	

8. Duration of training

Have you received any training from any organization? Yes..... No.....

If yes, then please give the following information

SL No.	Name of the training course	Sponsoring organization	Duration (Days)
i.			
ii.			
iii.			
iv.			
v.			
vi.			
Total			

9. Knowledge on CIG: Please answer the following question

SL No.	Question	Full Score	Obtained Score
i.	What do you mean by CIG?	2	
ii.	What is micro-extension plan?	2	
iii.	What is agriculture innovation fund?	2	
iv.	What is the objective of CIG?	2	
v.	How does CIG organize the membership?	2	
vi.	Mention the organization which trains the CIG members?	2	
vii.	Which technologies have been demonstrated by the CIG?	2	
viii.	What do you mean by Farmers Information and Advice Center (FIAC)?	2	
ix.	Which activities have been implemented by the CIG?	2	
x.	Which organization is the main agent for forming the CIG group?	2	
xi.	What is the category of CIG group?	2	
Total			

10. Involvement with CIG:

How long have you been involved with CIG (Years) and indicate your work capacity?

Sl No	Work Capacity	Duration (year)	Full Score	Obtained Score
1	President		3	
2	Vice President		3	
3	General Secretary		3	
4	Treasurer		3	
6	Executive Member		2	
7	General Member		1	
	Total			

11. Farmers' Perception on Usefulness of CIG: Mention the level of agreement on the followings:

SL No	Statements	Strongly agree	Agree	No opinion	Disagree	Strongly Disagree
i.	My social status has been increased since I join in CIG					
ii.	Participation in CIG helps me to be updated with latest farm technologies					
iii.	CIG activities are very important for socio-economic development of the community					
iv.	Management support of DAE for CIG activities at the level as per demand					
v.	CIG activities play an important role for increasing the income level of its members					
vi.	CIG activities help us to overcome problems that may not be possible otherwise if I am alone					
vii.	CIG activities help to grow leadership					

	capabilities among its members					
viii.	CIG activities create opportunities for saving & credit program					
ix.	CIG activities can create employment opportunities					
x.	Field visit, exposure visit occurs in CIG .					
xi.	CIG introduces new technology to the farmers					
xii.	CIG members get training materials by involving in CIG activities					
xiii.	CIG members can visit other countries for their good performances					
xiv.	CIG members can adopt disseminate & commercialize the new technology					
xv.	CIG provides fund to the farmers for seeds, fertilizers & intensive care of corps					
xvi.	Overall, I am happy to participate in CIG activities					
Total						

Thank you.

Signature of the interviewer-----