# STAGEWISE USE OF COSMOPOLITE INTERPERSONAL COMMUNICATION CHANNELS IN ADOPTION OF BRRI DHAN 29

**A THESIS**

**BY**

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***A Thesis***

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# CERTIFICATE

*This is to certify that thesis entitled,* ***"STAGEWISE USE OF COSMOPOLITE INTERPERSONAL COMMUNICATION CHANNELS IN ADOPTION OF BRRI DHAN 29"*** *submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of* ***MASTER OF SCIENCE*** *in* ***Agricultural Extension and Information System*** *embodies the result of a piece of bona fide research work carried out by* ***SABIHA ISLAM,*** *Registration No.* ***08-03086*** *under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.*

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

***Dated:***
***Place: Dhaka, Bangladesh***

***Prof. Mohammad Hossain Bhuiyan)***
***Supervisor***

**DEDICATED**

**TO MY**

**BELOVED PARENTS AND BROTHERS**

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***The Author***

# STAGEWISE USE OF COSMOPOLITE INTERPERSONAL COMMUNICATION CHANNELS IN ADOPTION OF BRRI DHAN 29

## ABSTRACT

The objective of this study was to determine and describe the stagewise use of cosmopolite interpersonal communication channels by the farmers in adoption of BRRI dhan29 and the individual characteristics of the farmers and also to explore the relationship between stagewise use of Cosmopolite Interpersonal Communication Channels(CIPC) and selected characteristics. Data were collected from 92 farmers of four villages of Gafargaon upazila under Mymensingh district, by using a structured personal interview schedule. Appropriate scales were developed in to measure the concerned variables. Statistical software package SPSS was used to analyze the data and Karl Pearson Product Moment Correlation Coefficient was used to test the relationship between the independent and dependent variables. Sample size was determined by using Solvin's formula, which estimated a sample size of BRRI dhan 29 growers. Farm and home visit was found to have more uses in every stage of innovation-decision process followed by farmers training, office call, result demonstration, group discussion and method demonstration by the farmers. At knowledge stage 28.26%, 36.96% and 34.78% respondents use CIPC channels in low, medium and high respectively. At persuasion stage 27.17%, 21.74% and 51.09% respondents use CIPC channels in low, medium and high respectively . At decision stage 56.52% ,41.30% and 02.18% respondents use CIPC channels in low, medium and high respectively. At implementation stage 61.96% ,35.87% and 02.17% respondents use CIPC channels in low, medium and high respectively. At confirmation stage 60.87%, 35.87% and 03.26% respondents use CIPC channels in low, medium and high respectively. The statistical analysis also revealed that education, social participation had positive and highly significant relationship with the overall stagewise use of CIPC. Age, family size, attitude towards BRRI dhan29 and use of mass media had negative significant relationship with the overall stagewise use of CIPC and farm size, annual income, innovativeness, problems in using BRRI dhan29 had non significant relationship with the overall stagewise use of CIPC.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| DAE | Department of Agricultural Extension |
| BBS | Bangladesh Bureau of Statistics |
| *et al.* | And others (at elli) |
| d.f. | Degrees of Freedom |
| etc. | Etcetera |
| e.g. | Example |
| ha | Hectare |
| i.e. | That is |
| viz. | Namely |
| NGO | Non-Government Organization |
| r | Pearson's Product Moment Correlation Co-efficient |
| BAU | Bangladesh Agricultural University |
| SAU | Sher-e-Bangla Agricultural University |
| SAAO | Sub Assistant Agriculture Officer |
| UAO | Upazila Agriculture Officer |
| % | Percent |

# CHAPTER I
# INTRODUCTION

## 1.1 General background

Bangladesh is a south Asian country of 1,47,570 square kilometer with the total population of 160 million (BBS, 2013). As a whole Bangladesh is a populous country that occupies 5$^{th}$ position in Asia and 8$^{th}$ position in the world. The growth rate of population is 1.37% per annum (BBS, 2013).

Agriculture is the mainstay of Bangladesh economy. Among the total population 76.70% live in rural area. About 50% of population is directly or indirectly engaged in agriculture and agriculture related activities (BBS, 2013). So, agriculture development and development of Bangladesh became the same phenomenon. Education, culture, science and technology all are related to agricultural development particularly in Bangladesh. High yielding variety, fertilizers, determination of doses of fertilizer, control measure of insect and diseases, biotechnologies and many other technologies concerned with agricultural development, which in a word called modern agricultural technology. The development of agriculture is mostly dependent on the use of modern technology by the farmers. In fact farmers are the ultimate users of modern technology. Agriculture is the applied biological science. So the technologies come out of its efforts are reasonably applicable in the farmer's field. Nearly 79.4 percent of the total cultivated area used for rice (Aus, Aman and Boro) and its total production was 30.13 million metric tons (BBS, 2012). Among the total rice production area 33.14 percent land was under Boro (BBS, 2011). A remarkable change in rice production has been already observed in Bangladesh after introducing of HYV varieties of rice. Farmers have been interested in adopting and cultivating HYV rice varieties due to their more productivity.

A number of agricultural research institutes under National Agricultural Research System are engaged in technology development. The National Agricultural Research institutes are BARI, BRRI, BJRI, BINA, BSRI, SRDI, BFRI, BLRI, BTRI are constantly developing useful agricultural technologies. BRRI develops rice related technologies, BARI develops wheat, potato, pulse, oil seed and horticulture related technologies, BJRI develops jute related technologies, SRDI develops soil management technology and so on. The development of technology becomes meaningful when the

ultimate users use it. Agricultural research institute develop technologies and diffusion agencies diffuse them among the ultimate users. Both Government and Non-Governmental organizations are playing role as diffusion agencies. Department of Agriculture Extension (DAE) is a government diffusion agency which transfer only crop related technology. DAE transfer technologies through many channels-mass media channels (MMC) and interpersonal channels (IPC). On the other hand farmers also use mass media channels and interpersonal channel is to receiving information on agricultural technologies. The MMC includes : TV, radio, printing materials. They are not sufficient to change the attitude of the farmers. Along with MMCs the interpersonal channels can change strongly held or weakly held attitudes of the people. We classify IPC as localite IPC and cosmopolite IPC. Cosmopolite IPC are used by DAE and localite IPC are used by the farmers in their social system. Below the list of cosmopolite IPC and localite IPC are stated (Bhuiyan, 2012):

| **Cosmopolite IPC** | **Localite IPC** |
|---|---|
| • Radio listening club<br>• Farming system research<br>• Farmers day<br>• Farmers training<br>• Group discussions<br>• Method demonstration<br>• Result demonstration<br>• Farm and home visit | • Family<br>• Neighbors/Relatives<br>• Opinion leader<br>• School teachers<br>• Cooperative society<br>• Youth club<br>• Village theatre<br>• Village fair |

Farmers use both of the channels. Although cosmopolite channels are relatively more important than localite channels for earlier adopters than for later adopters. Innovation-decision is a psychological process which develop through this channels in which an individual of a social system engages in mental activities just from first hearing about an innovation to its final adoption. The entire process consists of five stages, viz. Knowledge stage, persuasion stage, decision stage, implementation stage, confirmation stage.

Farmers of Bangladesh are influenced and receive technology information by both the cosmopolite and localite interpersonal communication system. In a social system there are several types of potential adopters. Some adopt technology early and some late.

Earlier adopters are very much familiar with cosmopolite IPC. To the contrary later adopters are very much familiar with localite IPC. Innovation decision is a psychological process. It includes five stages, viz. knowledge, persuasion, decision, implementation, confirmation stage.

Cosmopolite IPCs are important in almost all the stages of innovation decision process. A few research works were conducted in extent use of cosmopolite IPC in receiving technology information as well as extent of use of stagewise use of CIPC. So the researcher is interested to conduct a study on stagewise use of CIP channels in receiving technology information on BRRI dhan29 cultivation.

**1.2Statement of the problems**

Transfer of technology is an important issue of a diffusion agency like DAE. It is a gigantic task. This is carried out by change agents. Diffusion agency appointed change agents. The success of Diffusion agency largely depends upon how its change agents are familiar with strategy of transfer of technology in one hand and what channels they think appropriate for what stage. BRRI dhan29 is a recently developed rice production technology. Department of Agricultural extension shoulders the responsibility to diffuse it among the farmers. They use both mass media channels and interpersonal channels in transfer of BRRI dhan29 among farmers. IPC channels are found to be effective in innovation-decision. Among the IPC channels some are cosmopolite which are created and used by the diffusion agency, result demonstration, method demonstration, farm and home visit and farmers training and some others are cosmopolite channels. The researcher was interested to explore what CIPC were used at what stages of transfer of technology or diffusion of innovation at what extent. It is anticipated that certain sustainable development can take place in Bangladesh if the relevant innovation can be transferred through right channels at the right time to the right people.

In view of the foregoing discussion, the framework of this 'CIP channels' which is of great concern to national policy makers. By CIP channels, any messages can be diffused within a very short time. From research point of view it is not possible to involve all the items in a single study. The purpose of the study was to ascertain the mode, nature and stagewise use of CIP channels in adoption of BRRI dhan29. The study was also aimed to have an understanding of the selected characteristics of the

farmers and their relationship with the stagewise use of CIPC by the farmers in adoption of BRRI dhan29. The purpose of the study was to have answer to the following questions:

1. What cosmopolite channels were used by the extension workers of DAE to transfer BRRI dhan29 among the farmer of Gafargaon upazila for stagewise use of CIPC in innovation decision growers ?
2. Which characteristics of BRRI dhan29 growers were related to stagewise use of CIPC in innovation decision ?
3. What relationship exists between the selected characteristics of the farmers and stagewise use of CIP channels in innovation decision of BRRI dhan29 ?

**1.3 Objectives of the study**

- To determine and describe the stagewise use of Cosmopolite Interpersonal Communication(CIPC) channels in adoption of BRRI dhan29 among farmers of Gafargaon upazila under Mymensingh district.
- To determine and describe some selected characteristics of the farmers that influence stagewise use of CIP channels. The selected characteristics are:
  - Age
  - Level of Education
  - Family size
  - Organizational participation
  - Innovativeness
  - Farm size
  - Annual family income
  - Use of mass media
  - Attitude toward BRRI dhan29
  - Problems in using BRRI dhan29
- To compare preferences of use of CIP channels at different stages in adoption of BRRI dhan29
- To explore the relationships between the selected characteristics of the farmers and stagewise use of CIP channels in adoption of BRRI dhan29.

## 1.4 Scope and Limitation of the study

The study was undertaken at Gafargaon Upazila of Mymensingh District where BRRI dhan29 was adopted as a boro rice technology. The purpose of the study was to explore the extent of stagewise use of CIPC by the farmer in adoption of BRRI dhan29. The findings of the study indicated what CIPC was important at what stage of innovation-decision process. This finding would help DAE to select stagewise CIPC.

The respondents of the study were exclusively selected from Gafargaon upazila of Mymensingh district. But the findings may be applicable in other areas of Bangladesh where the physical, socio-economic, and cultural conditions are alike with those of the study area. Thus the findings of the study may be profitably utilized by the interpersonal communication planners, extension personnel and field workers for successful dissemination of BRRI dhan29 technologies. However in order to conduct the research in a meaningful and manageable way it becomes necessary to impose certain limitations in regard to certain aspects of the study, considering the time, money and necessary resources available to the researcher. The study was conducted with the following limitations:

i. The study was conducted at Gafargaon upazila of Mymensingh district.
ii. Farmers use CIP channels in receiving information on different aspects such as health, nutrition, family planning, mass education, agriculture etc. But this study was confined only to CIP channels which were used in adoption of BRRI dhan29.
iii. Farmers of Gafargaon upazila have many characteristics but in this study only ten characteristics were selected for investigation.
iv. Data furnished by the respondent farmers were considered to be valid and reliable.
v. Facts and figures collected by the investigator considering prevailing situation.
vi. Reluctance of the farmers to provide information was overcome by establishing rapport.

The researcher had some limitation. BRRI dhan29 adopts did not record stagewise use of CIPC in innovation-decision process. Therefore, data provided by them was totally based on their memory. The respondent were not much educated to answer the question properly. The researcher herself observed the situation and recorded the responses.

### 1.5 Assumptions of the study

An Assumption is "the supposition that an apparent fact or principle is true in the light of available evidence" (Goode, 1945). The following assumptions were made in conducting the study:

i. The respondents included in the sample of the study were able to provide their opinions and were competent enough to satisfy the queries.
ii. The information furnished by the respondents were reliable.
iii. The CIP channels included in the study were known to the people of the area concerned.
iv. The collected data were reliable because the researcher who acted as interviewer was well adjusted to the social environment of the study area.
v. As the respondent farmers were the representation sample their views and opinion were also thought to be representation.
vi. The findings of the study were expected to be useful for planning and execution of various extension programmes and the process of transferring agricultural innovations.

### 1.6 Statement of Hypothesis

A hypothesis is a proposition or a set of proposition set forth as an explanation for the concurrence of some specific group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probably in the light of established fact (Kothari, 1994). Hypothesis may be divided into two categories-a) Research hypothesis (Hi) and b) Null hypothesis (Ho). The following null hypothesis were formulated to explore the relationship between the selected characteristics of the farmers and stagewise use of CIP channels.

#### 1.6.1 Null Hypothesis

For testing the hypothesis statistically, the following null hypothesis was formulated, There is no relationship between age, education, family size, organizational participation, innovativeness, farm size, annual family income, attitude towards BRRI dhan29, problems in using BRRI dhan29, use of mass media and stagewise use of CIPC in relation to adopt BRRI dhan29.

## 1.7 Definition of the terms

### Age

It refers to the period of time from his birth to the time of investigation. In this study the age of BRRI dhan29 growers were considered only.

### Education

Education refers to the desirable change of human behavior, i.e. change in knowledge, skill and attitude of an individual through reading, writing and other related activities. In this study education status of BRRI dhan29 growers of Gafargaon upazila was taken into consideration.

### Family size

It refers to the total number of family members of the BRRI dhan29 growers of Gafargaon Upazila, who lives, eat and work under the area of the respondent.

### Firm size

Farm size refers to the total land area a BRRI dhan29 grower on which family carry out farming operation. The area was estimated in terms of full benefit of the farmer's family.

### Annual Family Income

It refers to the earning by the respondents himself/herself and the members of his/her family from agriculture and other sources during a year. The income sources may be agriculture, livestock, fisheries, business, job and other. The annual family income was expressed in Taka.

### Organizational participation

In every society there are some social organization like Co-operative society, School committee, Mosque committee, Sports club etc. BRRI dhan29 grower may be member of those organizations. So, participation in organization was referred to involvement of BRRI dhan29 growers as ordinary member, executive member, secretary or president.

### Innovativeness

Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system (Rogers,1983). Innovativeness of a respondent was measured on the basis of using some technology according to their adoption period. The technologies were line

transplanting, recommended seedling age, supplementary irrigation, integrated pest management etc.

**Attitude towards BRRI dhan29**

Attitude is more or less permanent feeling, thoughts and predispositions people have about certain aspects of their environment (Hawkins, Dunn and Cary, 1982). The attitude towards BRRI dhan29 means farmers believes, feeling and action toward an improved farm practices in respects of its adoption in real situation.

**Problem in using BRRI dhan29**

It refers to the extent of problem faced by farmers in rice cultivation. The possible problems faced by the farmer were mainly collected from previous researches particularly in respect of lack of quality seed, difficult to use recommended doses of fertilizer, difficult to use IPM practices, more insect attack, no source of supplementary irrigation, outbreak of diseases in the field of BRRI dhan29, seed treatment fungicide is not available, excessive rain in harvesting and threshing time, market price of paddy/rice is low.

**Mass media**

The mass media are the mean of communication through which messages are transmitted towards relatively large, heterogeneous and anonymous audience within a shorter time form the source to the audience. Mass media included in the study were radio, television, newspaper, poster and leaflet.

**Adoption**

According to Rogers (1995) 'Adoption is a decision to make full use of an innovation as the best source of action availabl' . Ray (1991) said 'When an individual takes up a new idea as the best course of action and practices at the phenomenon is known as adoption'. However, adoption of production technologies refers to one's use of different practices of production technologies and the decision to continue their use in future. It is an individual decision making process.

**BRRI dhan29**

This is a modern boro rice variety introduced by Bangladesh Rice Research Institute (BRRI in 1994) and possesses the quality for better performance in respect of yield and

quality. Seedling are raised in a seedbed and transplanted in the main field. Boro rice is transplanted from November to February.

**Cosmopolite IPC Channels**

CIP channels are the sources of external information which influences a local client system in its members decision making and motivates them towards adopting innovations. CIP channels are method demonstration, result demonstration, farmers training, group discussion, farm and home visit, office call, farmers day etc (Bhuiyan, 2012).

**Farmers Training**

Farmers training is a process of imparting education to a group of farmers on a particular issue/crop cultivation, which is conducted on the eve of crop season, for one to three days at a training centre (Bhuiyan, 2012).

**Group Discussion**

Group discussion may be defined as a form of systematic and purposeful oral process characterized by the formal and structured exchange of views on a particular topic, issue, problem or situation for developing information and understanding essential for decision making or problem solving (Bhuiyan, 2012).

**Method Demonstration**

Method Demonstration (MD) is very useful communication as well as teaching method. It is a good combination of seeing, listening and doing. Through an MD farmers are taught new skills or old skills in a new manner for a new purpose (Bhuiyan, 2012).

**Result Demonstration**

Result demonstration is a method of teaching which establishes proof that an improved practice advocated by extension worker is applicable locally. It is conducted in the farm or home of selected individual (Bhuiyan, 2012).

**Office Calls**

An office call is a visit paid by farmers to the office of the extension worker to discuss important farm production problems (Bhuiyan, 2012).

**Farm and Home Visit**

Farm and home visit is a technical visit conducted by extension workers according to their schedule. Through this communication method extension worker can see the

condition of standing crops on the farm with his/her own eyes and can advise farmers accordingly (Bhuiyan, 2012).

**Innovation Decision Process**

Innovation decision is the process through which an individual (or other decision making unit) passes from first knowledge of an innovation, to forming an attitude toward the innovation, to decision to adopt or reject, to implementation of the new idea, and to conformation of this decision (Rogers,1995).

i. **Knowledge stage**

   Occours when an individual (or other decision-making unit) is exposed to the innovations existence and gains some understanding of how it functions.

ii. **Persuasion stage**

   Occour when an individual (or other decision-making unit) forms a favorable or unfavorable attitude towards the innovation.

iii. **Decision stage**

   Occour when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation.

iv. **Implementation stage**

   Occour when an individual (or other decision-making unit) puts an innovation into use.

v. **Confirmation stage**

   Occour when an individual (or other decision-making unit) seeks reinforcement of an innovation-decision already made, but he or she may reserve his/her previous decision if exposed to conflicting message about the innovation (Rogers, 1995)

# CHAPTER II
# REVIEW OF LITERATURE

The purpose of this Chapter is to review literature having relevance to the present study. Little work had been done in Bangladesh in this matter. However, the author of this study had come across related studies conducted in other countries. This Chapter was divided into three sections. First section deals with the extent of use of CIPC by the farmers. Second section deals with the relationship between selected characteristics of the farmers and their use of CIPC and fourth section deals with the conceptual framework of the study.

## 2.1 Extent of use of CIPC by the farmers

Sharmin (2013) found in a study that the majority of the respondents (52 percent) had medium use of communication media and 48 percent having high use of communication media in commercial fish culture.

Bhuiyan (1992) mentioned eight cosmopolite interpersonal channels are widely used byDAE in the dissemination of agricultural information to the farmers.

Saha (2003) found that in case of farmers exposure to communication media for rice production, 48% of them had medium exposure to communication media, while 46% had low exposure and 9% had high exposure .By contrast, for poultry production, majority of the farmers (54%) had low exposure to communication media, while 46% had medium exposure and none of them had high exposure.

Halim & Miah (1996) found that the woman of modern villages with higher socio-economic status used more cosmopolite media of information rather than localite media. Cosmopolite media include radio, television, extension agents etc. Among the mass media, they used radio and television as vital source of information. Radio was very frequently (69.7%) used by all categories of farm woman, while TV was used by less number of woman (26.9%).

Kashem & Halim (1991) in a study found that the highest proportion of the farmers (35%) used interpersonal contact media in the adoption of modem rice technologies. Almost equal proportion (32%) of farmers had individual contacts. This was followed by mass contact method. Farmers very often discuss or seek advice from their friends,

relatives, neighbors and different input dealers regarding the use of modern practices in rice cultivation.

Dinampo (1989) conducted a study in Philippines to determine communication need and preferences. He observed that farmers were found to prefer an interpersonal media (Extension agents) rather than mass media.

Patil *et al.* (1984) found in a study that contact farmers received information on improved agricultural technology from neighbor farmers (59.18%), progressive farmers (56.12%), village extension worker (91.84%), agricultural officer (31.63%), group discussion (16.33%), demonstrations (14.28%), radio (88.77%), and newspaper (60.20%). The study also indicated that non-contact farmers received information on improved agricultural technologies from neighbor farmers (67.71%), progressive farmers (66.67%), contact farmers (45.87%), village extension worker (39.58%), demonstrations (5.20%), group discussion (4.16%), radio (84.36%), and newspaper (51.04%).

Rahman (1974) conducted a study on the use of communication media by the registered jute seed growers of Meherpur Thana and he observed that the extension agent was used to the highest extent (99 percent) which was followed in descending order by friends and neighbours (96.8 percent), model farmer and manager (52 percent), office call (52 percent), farm and home visit (43 percent) and demonstration (8 percent).

Nataraju and Channegowda (1985) found in a study that respondents used radio (54%), newspaper (46%), neighbors (23.3%), demonstrations (10.6%) and group meetings (6%) in receiving information on improved dairy management practices.

DAE (1995) in order to achieve the objectives of the extension programmers consider the following extension programmers consider the following extension methods and strategies:

- Media campaign including printed media, radio and television
- Upazila and district fair
- Group meeting

Farmers training; motivational tour, farm walk, method demonstrations, field days, result demonstration, individual farm visit, etc. Printed media commonly used are bulletins, posters, leaflet, circular letters, newspaper and magazines.

Okwu, O.J. and S. Daudu (2011) found in a study that Interpersonal communication channels were generally found to be more available, accessible and used by the farmers than the mass media to obtain information on improved farm technologies. Relatives/friends/neighbours constituted the most regularly available, accessible and used interpersonal channels although extension agents and television were mentioned by the farmers as the most preferred interpersonal channel and mass medium, respectively.

## 2.2 Relationship between selected characteristics of the farmers and their stagewise use of CIPC

### 2.2.1 Age

Islam (1999) found that the age of the farmers had negative and significant relation with the use of communication media.

Khan (1996) concluded that age of the farmers had a negative and insignificant effect on the use of information sources.

Anisuzzaman (2003) in his study conducted that age of the farmers had negative and significant relationship with the use of communication media.

Hossain (2010) found that age of the farmers had a significant negative relationship between their extent of use of communication media. He observed that most (83.4%) of the farmers belonged to young to middle age categories.

Khaton (2004) reported that a significant positive relationship existed between farmers' age and their extent of use of information sources on sustainable livelihood. She observed that middle-aged (32 years to 50 years) farmers were influenced more significantly in using the information sources than were the old.

### 2.2.2 Education

Islam (1999) found that the education of the farmers had positive and highly significant relationship with their use of communication media.

Sarker (1995) in his study conducted that education of the farmers had positive and significant relationship with their use of communication media.

Rahman (1974) found that the level of education of the respondents had significant influence on the use of communication media.

Bhuiyan (1988) showed that education had positive and significant contribution on the comprehensive use of communication media.

Akhter (2011) revealed that education of the pond fish farmers had significant positive correlation with their extent of use of information sources.

### 2.2.3 Family size

Hossain (1971) study in Gouripur Union of Mymensingh district revealed a significant positive relationship between family size and adoption of each of the four recommended practices, namely, recommended variety of transplanted aman paddy, line transplanting methods, recommended doses of fertilizers and plant protection measures.

Ahmed (1977) study showed that family size had significant influence on the use of communication media in the adoption of plant protection measures.

Sarker (1995) reported a negatively insignificant relationship between family size of the small farmers and their communication media use.

Anisuzzaman (2003) concluded that the family size of the farmers had no significant relationship with their use of communication media.

Alam (2004) in his study concluded that family size of the farmers had no significant relationship with their use of communication media.

### 2.2 .4 Farm size

Chakrabarty (1992) in his study concluded that there was a negative relationship between the farm size and the use of communication media by the farmers.

Rahman (1974) found that there was a positive relationship between farm size and use of communication media.

Ahmed (1977) study showed that farm size had significant relationship on the use of communication media in the adoption of plant protection measures.

Bhuiyan (1988) found in his study that farm size had significant positive correlation with the use of communication media in the adoption of selected improved farm practices in rice cultivation.

Sarker (1995) study showed that farm size of the small farmers possesses a significant amount of influence upon their decision on using communication media of information.

Alam (2004) in his study concluded that farm size of the farmers had no significant relationship with their use of communication media.

### 2.2.5 Annual income

Bhuiyan (1988) in his study observed that income of the farmers had no significant relationship on the use of communication media.

Akhter (2011) revealed that there was a strong and highly significant positive relationship between the fish farmer's income from pond fish farmers and their extent of use of information sources.

Sawhney (1965) showed that income was positively related to use of different communication media.

Rahman (1974) showed that annual income of the farmers and their use of communication media are significantly related.

Latif (1974) observed a significant positive relationship between income of the farmers and their communication exposure.

Ahmed (1977) found that income of the farmers had significant effect on the use of communication media in the adoption of plant protection measures.

Annisuzzaman (2003) concluded that the annual income of the farmers had no significant relationship with their use of communication media.

### 2.2.6 Social participation

Islam (1995) in his study on wheat growers found that organizational participation of the farmers had positive significant relationship with their use of communication media.

Bhuiyan (1988) in his study observed that organizational participation of the farmers had no significant relationship with their extent of use of communication media.

Rahman (1991) found that organizational participation and credibility of Sub Assistant Agriculture officers showed insignificant relationship.

Alam (2004) in his study concluded that organizational participation of the farmers had no significant relationship with their use of communication media.

### 2.2.7 Innovativeness

Uddin (1993) reported that there was a highly significant relationship between innovativeness of sugarcane growers and their reception of information on planting method.

Islam (1995) found that innovativeness of the farmers had positive and highly significant relation with their use of communication media.

Khan (1996) concluded that there was no significant relationship between innovativeness and use of information by the resource poor farmers.

### 2.2.8 Attitude towards BRRI dhan 29

Alam (2004) in his study concluded that attitude towards agricultural technology of the farmers had highly significant relationship with their use of communication media.

Hossain (2006) found that attitude toward improved rice production technology of the farmers had highly significant relationship with their use of communication media.

## 2.3 Conceptual Framework of the Study

Stagewise use of CIPC was the dependent variable of the study, whereas ten selected characteristics of the farmers were independent variables. Both these issues are interrelated and might exert influence in adoption BRRI dhan 29. Figure 2.3 represent the conceptual framework of the study.

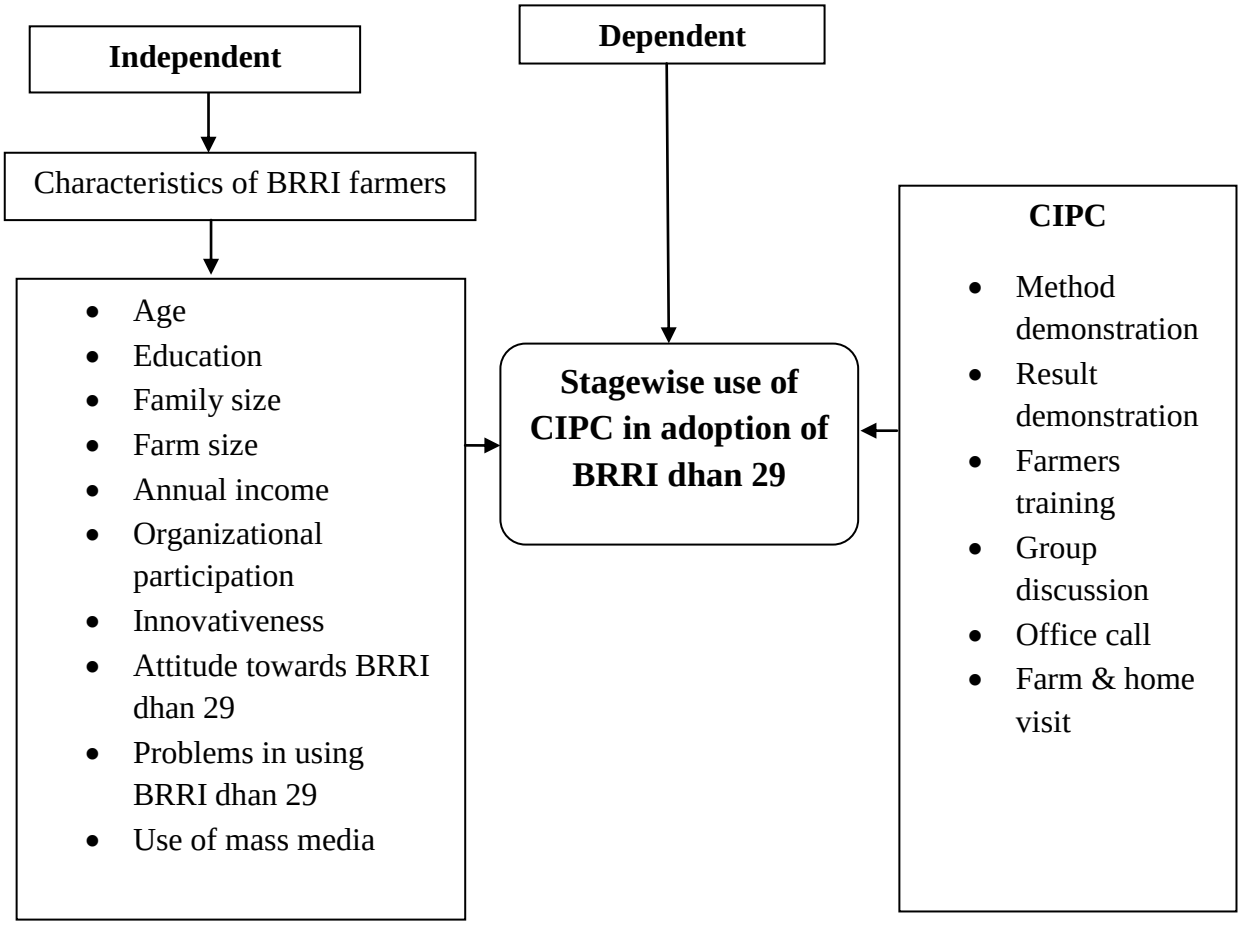


Figure 2.3 The conceptual framework of the study

# CHAPTER III
# METHODOLOGY

Methodology consist of methods and procedure of data collection, data analysis and measurement of variables. More appropriate the methodology more accurate the research. The basis materials for conducting any research are the unbiased information and facts. Methodology should be appropriate so that the researcher will be able to collect necessary data, analyze them in an apposite way, which will help him/her to arrive at correct decision. Construction of research methodology requires a vast knowledge, experience and skill. Keeping this in mind the researcher went through previous studies, obtained views from supervisors and experts regarding all aspects of this piece of the study. Finally, it was possible to construct a useful methodology that led the researcher in a right direction in order to accomplish the study.

## 3.1 Locale of the study

Gafargaon upazila of Mymensingh district was purposively selected as the study area. There are 15 union in Gafargaon upazila. They are Borile, Kharua mukondo, Pachua, Loutoil out of these unions Raona union selected purposively out of 9 villages of Raona union and villagers area selected randomly.

## 3.2 Population and sample of the study

The researcher herself with the help of local leaders and concerned Sub Assistant Agricultural Officer prepared an updated list of all the BRRI dhan29 growers of the selected villages. The total numbers of farm families in four villages (Borile, Kharua mukondo, Pachua, Loutoil) were 1150, Which constituted the population of the study. Sample size was determined by using formula, which was estimated a sample size of BRRI dhan29 growers.

$$n= \frac{N}{1+N(e)^2}$$

Where

n=Sample size

N= Population size

e= Margin of error

Gafargaon upazila of Mymensingh district is an intensive Boro rice growing area. It has 15 unions. They are Barobaria, Char Algi, Datter Bazar, Gaffargaon, Jessora, Langair, Mashakhali, Niguari, Paithal, Panchbag, Rasulpur, Raona, Saltia, Tengabu,Usthi. Out of these union Raona union was selected purposively. The union has 9 villages out of which (i)Kharua Borile, (ii)Kharua mukondo, (iii)Pachua and (iv)Loutoil villages were selected randomly. Thus the four villages constituted the locale of the study.

### 3.3 Instruments for Data Collection

In order to collect relevant information, a structured interview schedule was prepared considering the objectives of the study. The schedule was prepared in both English and Bengali for clear understanding of the respondents. The schedule obtained both closed and open forms of questions. Appropriate scales were developed to measure selected characteristics of the farmers and the dependent variables.

A pre-test survey was undertaken before the actual collection of data. This survey provided an opportunity to examine the effectiveness of the schedule which revealed some unforeseen defects associated with it. Based on the pre-test experience, necessary correction, addition, alteration, rearrangements were made. Thus the interview schedule was prepared for the final use. The Bengali version of the interview schedule was multiplied as per requirement to collect data from the respondents. The English version of the interview schedule was enclosed in Appendix-A.

### 3.4 Selection of variables

A variable is any characteristics which can assume varying or different values in successive individual cases. An organized piece of research usually contains at least two important elements viz. independent and dependent variables. An independent variable is that factor which is manipulated by the researcher in her attempt to ascertain its relationships to an observed phenomenon. A dependent variable is that factor which appears or varies as an effect of the independent variables.

The successful selections of variables ensure the successful research. In appropriate and inconsistent selection of variables may lead to faculty results. The researcher employed adequate care in selecting the variables of the study. For selection of variables the researcher went through the past related literature as far as possible had discussion with the supervisor and experts. Psychological factors of the rural community, time and

resources availability to researcher ten characteristics of the rice farmers were selected as independent variables like Age, Level of education, Family size, Farm size, Annual family income, Organizational participation, Innovativeness, Attitude towards BRRI dhan29, Problems in using BRRI dhan29 and use of mass media. Use of CIPC in adoption of BRRI dhan29 was the dependent variable.

### 3.5 Data collection

Data were collected by the researcher herself with the help of local leader, Sub-Assistant Agricultural Officer (SAAO) through interview schedule. To get valid and relevant information, the researcher made all possible efforts to explain the purpose of the study to BRRI dhan29 rice farmers. Sub-Assistant Agricultural Officer and local opinion leaders helped the investigation in this regard. Appointments with the interviewees were made in advance with help of the concerned Sub-Assistant Agricultural Officer. While starting interview with the any respondent, the researcher took all possible care to establish rapport with him, so that the rice farmers did not feel hesitation to furnish proper data. In that way, data for this study were collected through personal interview by the researcher herself during 25 August to 27 September, 2015.

A single interview was carried out with each respondent, and thus great reliance was placed on the ability of farmers to recall the relevant information. The respondents were assured about the confidentiality of their information delivered to the researcher.

### 3.6 Processing of data

The collected row data were examined thoroughly to detect errors and omission. As a matter of fact the researcher made a careful scrutiny while completing the interview schedule to make sure that the information were entered as completed as possible and well arranged to facilitate coding and tabulation. Minor mistakes were detected, which were corrected very promptly.

Having consulted with the research supervisor, a detailed coding plan was made. All the responses in the interview schedule were given numerical values. Local units were converted to the standard units. All the individual responses of the questions of the interview schedule were transferred to a master sheet to facilitate tabulation. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative forms. These were than tabulated.

### 3.7 Measurement of variables

In order to conduct a study in accordance with the objectives it was necessary to measure the variables. The procedures of measuring the variables have been described below.

#### 3.7.1 Measurement of independent variables

##### 3.7.1.1 Age

Age of the respondents was determined by the number of years from their birth to the time of data collection. A score of one (1) was assigned for each and every complete year of a respondent's age. Based on the information of the respondents' age were classified into three categories, young aged, middle aged and old aged.

##### 3.7.1.2Education

Education of a respondent was measured in term of classes passed by him/her in formal education system (i.e. school, college and university) if a respondent pass the final examination of class V in the school, a score of 5 (five) was assigned for calculating his /her education score. A respondent who can sign only had education score 0.5 (point five) and a respondent who did not know reading and writing had education score of 0 (zero). Based on the level of education the respondents were categorized into no education, primary education, secondary education, higher secondary education and higher education.

##### 3.7.1.3Family size

Family size of a respondent was determined in terms of a total number of members of each respondent family. The family member included respondent himself, spouse, sons, daughters and other dependents. The actual number of family members, expressed by the respondents was considered as family size score. If a respondent had 5 members in his family, his/her family size score was 5(five). Based on the family size score the respondents were categorized into small, medium and large.

##### 3.7.1.4 Farm size

Land is the most important capital of a farmer and the farm size has s positive influence on many personal characteristics of a farmer. Farm size was estimated in terms of full benefit to the respondent. It was measured by using the following formula

Farm size= $a+b+\frac{1}{2}(c+d)+e$

Where,

a) Homestead area including garden, pond and fallow land
b) Own land under own cultivation
c) Land taken from others as share cropping
d) Land given to others as share cropping
e) Land taken from others on lease

Actual size of the farm was considered as the score of the farm size. For example, if any respondents had a farm of 0.02 ha, then his score was 02. Based on the achieved farm size score the respondents were categorized into marginal, small, medium and large as DAE categorized.

### 3.7.1.5 Annual family income

Income of a respondent was measured in term of taka. Family income of a respondent was computed on the basis of total yearly earning from agriculture and other sources (service, business, day labor etc.) by the respondent herself and other family members. The value of all agricultural crops, livestock, Poultry, egg, fisheries, fruits, vegetables etc. were taken into consideration. The income score was assigned as one (1) for each one thousand taka of income. For example if a respondent had income of Tk 5000 his/her annual family income score was assigned 5.

### 3.7.1.6 Organizational participation

Organizational participation score of a respondent was measured on the basis of his/her participation in different social organizations related to agriculture and rural development in the past and present time. Organizational participation score of a respondent was measured by considering the nature of involvement and duration of involvement in different organizations. The respondents were asked about their nature and duration of participation in selected 10 (ten) organizations and the scoring were assigned in the following way:

Organizational participation score=$\sum P \times D$

Where,

P=Participation score

D=Duration (Number of years) the nature of organizational participation was scored in the following manner:

| Nature of involvement | Score |
|---|---|
| No participation | 0 |
| As ordinary member | 1 |
| As executive member | 2 |
| President/Secretary | 3 |

If the individual was an executive committee member for four years his/her score of participation would be 4×2=8. Again, if a respondent had membership in two or more organization, his/her score was computed by adding the scores obtained from each organizational according to the categories of his/her membership.

### 3.7.1.7 Innovativeness

Innovativeness of a respondent was measured on the basis of adoption of 6 improved agricultural technologies by the respondents. Score was assigned on the basis of length of time a respondent was using the specific practices. The scoring was done in the following manner:

| Adoption period | Assigned score |
|---|---|
| Within 1 years after hearing | 4 |
| Within 2 years after hearing | 3 |
| Within 3 years after hearing | 2 |
| Within more than 3 years after hearing | 1 |
| No adoption | 0 |

Thus, the innovativeness score of a respondent was obtained by adding scores for all 6 items. Innovativeness score of a respondent could range from 0 to 24 where 0 indicates no innovativeness and 24 indicates maximum innovativeness.

### 3.7.1.8 Attitude towards BRRI dhan29

Likert-type scale was used to determined the attitude towards BRRI dhan29. The scale contained 10 statements out of which 5 statements were positive and 5 statement were negative. These positive and negative statements were arranged alternately. A statement was considered positive only when it reflected the idea of favorableness toward BRRI

dhan29. The respondents were asked to express the opinion in the form of strongly agreed, agreed, no opinion, disagreed, strongly disagreed and scores were assigned of 5, 4, 3, 2 and 1 respectively. On the other hand, for negative statement reverse scoring method was followed.

Hence attitude towards BRRI dhan29 was determined by summing up the scores obtained by the respondents. Thus, possible attitude towards BRRI dhan29 of the respondents could range from 10-50, Where 10 indicate unfavorable attitude and 50 indicate highly favorable attitude towards BRRI dhan29.

#### 3.7.1.9 Problem in using BRRI dhan29

The extent of problem faced by the farmers in adoption BRRI dhan29 was measured on different aspect of adoption of BRRI dhan29. The possible problems faced by the respondents were collected from literatures, which were lack of quality seed, difficult to use recommended doses of fertilizer, difficult to use IPM practices, more insect attack, no source of supplementary irrigation, outbreak of diseases in the field of BRRI dhan29, seed treatment fungicide is not available, excessive rain in harvesting and threshing time, low market price. Where the degree of severity of problem was determined as very high problem, medium problem, no problem and not at all. They were assigned score as 3,2,1 and 0 respectively. Then problems score of a respondent was determined by summing up his/her response to all the items.

#### 3.7.1.10 Use of mass media

Use of mass media by the farmers was measured on the basis of opinion of the farmers use the different mass media namely radio, television, newspaper, poster, leaflet in adoption of BRRI dhan29.The use of mass media was determined as very low use, medium use and not at all. They were assigned score as 2,1 and 0 respectively. Then use of mass media score of a respondent was determined by summing up his/her response to all the items.

### 3.7.2 Measurement of dependent variables

Innovation decision process comprised of 5 stages viz. a) knowledge stage, b) persuasion stage, c) decision stage, d) implementation stage and e) confirmation stage. Use of CIP channels at each stage was the dependent variables of the study. To measure use of CIPC at each stage six CIP channels namely method demonstration, result demonstration, group discussion, office call, farmers training and farm and home visit

were selected and a 5 point (0-4) rating scale was used. Numerical values assigned to the scale were 4, 3, 2, 1 and 0 for high, medium, low, very low use and no use of CIP channels respectively. Five CIP channels were used different purposes at each stage. The purposes of use of and their possible range of scores for an individual at each stage were summarized below:

| **Stages** | **Purposes of use of CIP channels** | | **No. of CIP channels** | **Rating scale** | **Possible range of scores** |
|---|---|---|---|---|---|
| Knowledge stage | Existence knowledge of BRRI dhan29 | | 6 | 0-4 | 0-72 |
| | Operational knowledge of BRRI dhan29 | | 6 | 0-4 | |
| | Beneficial knowledge of BRRI dhan29 | | 6 | 0-4 | |
| Persuasion stage | Creation of interest toward BRRIdhan29 | | 6 | 0-4 | 0-48 |
| | Evaluation of BRRI dhan29 | | 6 | 0-4 | |
| Decision stage | Trial of BRRI dhan29 | | 6 | 0-4 | 0-24 |
| Implementation stage | Full use of BRRI dhan29 | | 6 | 0-4 | 0-48 |
| | Solving operational problems | | 6 | 0-4 | |
| Confirmation stage | Adoption | Continuance | 6 | 0-4 | 0-96 |
| | | Discontinuance | 6 | 0-4 | |
| | Rejection | Replacement | 6 | 0-4 | |
| | | Later adoption | 6 | 0-4 | |

Thus, the CIP channels use scores of a respondent could range in knowledge stage from 0 to 72, in persuasion stage from 0 to 48, in decision stage from 0 to 24, in implementation stage from 0 to 48 and in confirmation stage from 0-96. Zero (0) indicates no use and highest score indicates high use of CIP channels.

## Cosmopolite Interpersonal Communication Channels Use Index(CIPCUI)

To compare preferences of use of CIP channels at each stage, CIP channels use index (CIPCUI) for each CIP channels for each stage was also calculated. A total of 92 respondents gave their opinion on a 5 point (0-4) rating scale. Thus, the CIP channels use index (CIPCUI) of a particular media at knowledge stage could range from 0 to 1104 {92 respondents × 3 purposes × (0-4) rating scale}, at persuasion stage from 0 to 736 {92 respondents × 2 purposes × (0-4) rating scale}, at decision stage from 0 to 368 {92 respondents × 1 purposes × (0-4) rating scale}, at implementation stage from 0 to 736 {92 respondents × 2 purposes × (0-4) rating scale} and confirmation stage from 0 to 1472 {92 respondents × 4 purposes × (0-4) rating scale}.

### 3.8 Statistical Analysis

Data collected from the respondents were compiled, tabulated and analyzed in accordance with the objective of the study. A statistical software package named SPSS (Statistical Package for Social Sciences) was used to analyze the data. Frequency, percent, distribution, standard deviation and mean of each variable was measured. This helped to categorize the variables. For exploring the relationship between the use of mass media in adoption of BRRI dhan28 and the independent variables Karl's Pearson Product Moment Correlation Co-efficient 'r' was computed. Then the correlation co-efficient was compared with the table value at 5% and 1% level of probability to identify the significance of the relationship. Rank order was also used to cooperative use of the individual mass media in adoption of BRRI dhan28. The correlation matrix has been given in the Appendix B.

# CHAPTER IV
# RESULTS AND DISCUSSION

This Chapter deals with the findings of the research according to the objectives of the study. For convenience, the chapter is divided into four sections. The first section deals with the selected individual characteristics of the farmers. The second section deals with stagewise use of CIPC in receiving information by farmers adoption of BRRI dhan29. The third section deals with the relationships between dependent variable and independent variables. The fourth section deals with the relationship between stagewise use of CIPC and independent variable.

## 4.1 Selected Individual Characteristics of the Farmers

The individual characteristics of the farmers may greatly vary and the various factors might have great impact on stagewise use of CIPC in receiving information by farmers adoption of BRRI dhan29. The ten selected characteristics such as age, education, family size, farm size, annual family income, organizational participation, innovativeness, attitude towards BRRI dhan29, problems in using BRRI dhan29, use of mass media were studied.

The salient features of individual characteristics of the farmers are shown in Table 4.1.

| Characteristics | Measuring unit | Probable range | Observed Range | Mean | Standard deviation |
|---|---|---|---|---|---|
| Age | Years | Unknown | 26-62 | 41.70 | 8.65 |
| Education | Year of schooling | Unknown | 0-12 | 4.13 | 4.03 |
| Family size | Number | Unknown | 2-12 | 5.18 | 2.27 |
| Farm size | Hectare | Unknown | 0.15-2.19 | 5.18 | 2.27 |
| Annual family income | 000Tk | Unknown | 37.20-259 | 93.69 | 46.54 |
| Innovativeness | Rated score | 0-24 | 4-23 | 13.82 | 5.25 |
| Organizational participation | Rated score | Unknown | 0-10 | 1.85 | 2.20 |
| Attitude towards BRRI dhan29 | Rated score | 10-50 | 17-39 | 25.14 | 6.09 |
| Problem in using BRRI dhan29 | Rated score | 0-27 | 2-14 | 6.11 | 2.53 |
| Use of mass media | Rated score | 0-15 | 1-6 | 2.84 | 1.30 |

### 4.1.1 Age

The age score of the sample farmers ranged from 26 to 62 with an average of 41.70 and standard deviation of 8.65. The respondents were classified into three categories as shown in Table 4.1.1 Distribution of farmers according to their age.

**Table 4.1.1: Distribution of the respondents according to their age**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Age (Years) | Young aged(upto35) | 27 | 29.35 | 41.70 | 8.65 |
| | Middle aged(36-50) | 54 | 58.70 | | |
| | Old aged (above 50) | 11 | 11.95 | | |

The data indicate that the highest proportion (58.70) of the respondents were middle aged compared to 29.35 percent being young and 11.95 percent old aged. However, data also revealed that 88.05 percent of the farmers in the study area were young to middle aged. Young people are generally receptive to new ideas and things. They have a favorable attitude towards use of new technology. However, the older farmers, because of their longer farm experience, might have valuable opinions in regard to adoption of modem agricultural innovation. The extension agents can make use of their views and opinions in designing their extension activities. Similar findings were reported by Hossain (2010) and Akhter (2011).

### 4.1.2Education

Education scores of farmers ranged from 0 to 12. The average score was 4.13 with the standard deviation 4.03. On the basis their score, the farmers were classified into four categories as shown in Table 4.1.2 distribution of farmers according to their education

**Table 4.1.2: Distribution of the respondents according to their level of education**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Education(Year of schooling) | No education | 37 | 40.22 | 4.13 | 4.03 |
| | Primary education (1-5) | 25 | 27.17 | | |
| | Secondary education (6-10) | 23 | 25 | | |
| | Higher secondary (above 10) | 7 | 7.61 | | |

It is evident from Table 4.2. that 40.22 percent of the farmers fell under the category of no education, 27.17 percent comprised of primary education, 25 percent comprised of secondary education and 7.61 percent had above secondary education. The precent literacy rate of the country is 65% (BBS, 2011). The findings indicate that in the study area, the literacy rate seems to be lower than the national average level. They are not much educated. They depend on CIPC to receive information for any problems quick solution.

### 4.1.3 Family size

The family size score of the farmers ranged from 2 to 12 with an average 5.18 and standard deviation 2.27. On the basis of their family size, the farmers were classified into three categories as shown in Table 4.1.3

**Table 4.1. 3: Distribution of the respondents according to their family size**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Family size (Number) | Small family (2-4) | 36 | 39.13 | 5.18 | 2.27 |
| | Medium family (5-7) | 43 | 46.74 | | |
| | Large family (above 7) | 13 | 14.13 | | |

Data presented in Table 4.1.3 reveal that the highest proportion (46.74 percent) of the farmers fell under the medium family category compared to 39.13 percent and 14.13 percent having small and large family category respectively. These findings indicate that more than 85.87 percent of the respondents had either small or medium family size. Data indicate that the average household size (5.18) was higher than the national average of 4.9 (BBS, 2010). Hossain (2010) had found average family size 5.50 which was similar to the present study. Similar findings were reported by Das (2009) and Islam (2009).

### 4.1.4 farm size

The farm size score of the farmers in the study area varied from 0.15 to 2.19. The average farm size was 5.18 ha with the standard deviation 2.27. Based on DAE Manual (1999) farm size of the farmers were classified into four categories as shown in Table 4.1.4

**Table 4.1.4: Distribution of the respondents according to their farm size**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Farm size(Hectare) | Marginal farm (upto0.2ha) | 3 | 3.26 | 5.18 | 2.27 |
| | Small farm (0.21-1.20 ha) | 51 | 55.43 | | |
| | Medium farm (1.21-2.05 ha) | 33 | 35.87 | | |
| | Large farm (above 2.05 ha) | 5 | 5.43 | | |

The Table 4.4 shows that the highest proportion (55.43 percent) of the farmers belonged to small farm size compared to 35.87 and 5.43 percent having medium and large farm size respectively and 3.26 percent belonged marginal farm size. Thus, more than 90 percent of the farmers were in possession of marginal and medium farm.

### 4.1.5 Annual family income

Annual family income score of the farmers ranged from 37.20 to 259.00 with the mean of 93.69 and standard deviation 46.54. On the basis of the annual family income, the farmers were classified into three categories as shown in Table 4.1.5.

**Table 4.1.5: Distribution of the respondents according to their annual family income**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Annual family income (000Tk.) | Low income (upto 75) | 31 | 33.70 | 93.69 | 46.54 |
| | Medium income (76-150) | 50 | 54.35 | | |
| | High income (above 150) | 11 | 11.95 | | |

Data presented in Table 4.1.5. show that the highest proportion (54.35 percent) of the farmers had medium annual family income, while only 33.70 percent had low income and 11.95 percent had high income. As a result, the most (88.05 percent) of the farmers in the study area were medium to low annual family income earners.

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

with low income generally hesitate to adopt innovations in their own farms because of their lower risk bearing ability and their inability to make necessary financial investment. It is, therefore, likely that a considerable proportion of the farmers might face difficulties in adopting modern variety. Similar findings were reported by Islam (2007).

### 4.1.6 Innovativeness

Innovativeness score of farmers ranged from 4 to 23 against the possible score 0-24 with an average of 13.82 and standard deviation of 5.25. On the basis of the innovativeness, the farmers were classified into three categories as shown in Table 4.1.6.

**Table4.1.6:Distribution of the respondents according to their innovativeness**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Innovativeness (Rated score) | Low innovativeness (4-10) | 26 | 28.26 | 13.82 | 5.25 |
| | Medium innovativeness (11-17) | 43 | 46.74 | | |
| | High innovativeness (above 17) | 23 | 25 | | |

Analysis of data revealed that 28.26 percent of the respondent farmers had low innovativeness, 46.74 percent of the respondent had medium innovativeness and 25 percent of the respondent had high innovativeness. Data contained in the Table 4.1.6 reveal that all the farmers of the study area were innovative. The degree of innovativeness largely depend upon their need, effort and capacity. A farmer may be high innovative for a particular innovation and low innovation for other. For example, the farmer of SI No 4 of the study had high innovativeness for integrated pest management and low innovativeness for seedling growing method of BRRI dhan29. It means farmers adopt innovation according to their need, effort and capacity.

### 4.1.7 Organizational participation

The observed organizational participation scores of the farmers ranged from 0 to 10 with an average 1.85 and standard deviation of 2.20. Depending on the organizational participation scores, the farmers were classified into four categories as shown in Table 4.1.7.

**Table 4.1.7: Distribution of the respondents according to their organizational participation**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Organizational participation (Rated score) | No participation(0) | 38 | 41.30 | 1.85 | 2.20 |
| | Low participation (1-3) | 35 | 38.05 | | |
| | Medium participation (4-6) | 15 | 16.30 | | |
| | High participation (above 6) | 4 | 4.35 | | |

Analysis of data revealed that the highest proportion (41.30 percent) of the farmers had no organizational participation as compared to, 38.05 percent low and 16.30 percent medium organizational participation and 4.35 percent high organizational participation. It reveals that the overwhelming majority of the farmers in the study area were in no to low organizational participation category. Data contained in Table 4.1.7 reveal that farmers of the study area were not enough social and community development concerned that's why during the data collection it was observed that NGOs were busy with their money investment and recovery, government organizations were also confined to their assigned work. There was no agency to inspire them for social and community development work.

### 4.1.8 Attitude toward BRRI dhan29

Attitude toward BRRI dhan29 score of the farmers ranged from 17 to 39, with an average 25.14 and standard deviation 6.06. Depending on the attitude toward BRRI dhan29 scores, the farmers were classified into three categories as shown in Table 4.1.8.

**Table 4.1.8:Distribution of the respondents according to their attitude**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Attitude towards BRRI dhan29 (Rated score) | Unfavorable (below 30) | 67 | 72.83 | 25.14 | 6.09 |
| | Neutral (30) | 8 | 8.9 | | |
| | Favorable (above 30) | 17 | 18.48 | | |

The data represented in Table 4.1.8 show that the highest proportion of the respondent 72.83 percent had unfavorable, 8.9 percent had neutral and 18.48 percent had favorable attitude towards BRRI dhan29. So, it is clear that 18.48% of the farmers had positive attitude towards BRRI dhan29, which helped them to adopt BRRI dhan29. Moreover, neutral respondents were supposed to be inclined toward favorable attitude toward BRRI dhan29. From this point of view we observed that more than one forth (27.38%) of the respondents had favorable attitude toward BRRI dhan29. Obtained scores of attitude toward BRRI dhan29 indicate that the respondent farmers of the study area had some different opinion about the quality of BRRI dhan29. Different opinion includes modern variety of rice is more productive than local variety, IPM is not better than chemical control, Application of gutee urea is difficult etc.

### 4.1.9 Problem in using BRRI dhan29

Problem severity score of the farmers ranged from 2 to 14,with an average 6.11 and standard deviation 2.53. Depending on the problem in using BRRI dhan29 scores, the farmers were classified into three categories as shown in Table 4.1.9.

**Table 4.1.9:Distribution of the respondents according to their problem severity**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Problem in using BRRI dhan29(Rated score) | Low severity (2-5) | 38 | 41.30 | 6.11 | 2.53 |
| | Medium severity (6-9) | 46 | 50 | | |
| | High severity (above 9) | 8 | 8.70 | | |

The data presented in Table 4.1.9 show that highest proportion of the respondent (50 percent) faced medium problem severity, 41.30 percent of the farmers faced low and 8.70 percent of the farmers faced high severity. It was observed that farmer face high severity for the problem of lack of quality seed, no source of supplementary irrigation, seed treatment fungicide is not available and medium severity for the problem of difficult to use recommended doses of fertilizer, more insect attack, market price of paddy/rice is low etc.

### 4.1.10 Use of mass media

Use of mass media score of the farmers ranged from 1 to 6, with an average 2.84 and standard deviation 1.30. Depending on use of mass media scores, the farmers were classified into two categories as shown in Table 4.1.10.

**Table 4.1.10:Distribution of the respondents according to their use of mass media**

| Characteristics | Category | Number (N=92) | Percent | Mean | SD |
|---|---|---|---|---|---|
| Use of mass media(Rated score) | Very low use(1-3) | 66 | 71.74 | 2.84 | 1.30 |
| | Medium use(4-6) | 26 | 28.26 | | |

The score of mass media use was found to be very small as compared with observed score. So, conclusion can be drawn that farmers of the study area receive technology information directly from the CIPC like office call, farm and home visit, result demonstration etc. They do not rely upon information delivered by MMC. In fact the way by which information is broadcast is not understandable to the farmers. For example, the method adopted by Saikh Seraj is found to be incomprehensive to the farmers.

## 4.2. Stagewise use Of CIP channels in adoption of BRRI dhan29

### 4.2.1. Use of CIP channels at knowledge stage in adoption of BRRI dhan29

The score of use of CIP channels at knowledge stage range from 8 to 32 against the possible range 0 to 72 with mean and standard deviation 18.76 and 6.71 respectively. Based on the obtained score at knowledge stage the respondents of use of CIP channels were categorized into three low use, medium use and high use (Table 4.2.1).

**Table 4.2.1. Distribution of the respondents according to their opinion on the use of CIP channels in knowledge stage of adoption.**

| Categories | Farmers | | Mean | Standard deviation |
|---|---|---|---|---|
| | Number | Percent | | |
| Low use (8-14) | 26 | 28.26 | 18.76 | 6.71 |
| Medium use (15-21) | 34 | 36.96 | | |
| High use (>22) | 32 | 34.78 | | |
| Total | 92 | 100 | | |

Data contained in the Table 4.2.1 reveal that use of CIP channels as medium use and high use almost found equal 36.96% and 34.78% respectively. More than one fifth of the respondents belonged to low use category. It was earlier mentioned that CIP channels were composed of result demonstration, method demonstration, farmers training, group discussion, office call and farm and home visit. At knowledge stage all these cosmopolite channels worked as mass media to create knowledge about BRRI dhan29.

### 4.2.2. Use of CIP channels at persuasion stage in adoption of BRRI dhan29

The score of use of CIP channels at persuasion stage in adoption of BRRI dhan29 ranged from 5 to 19 against the possible range 0 to 48 with mean 13.33 and standard deviation 4.22. Based on the obtained score at persuasion stage the respondents of use of CIP channels were categorized into three low use, medium use and high use (Table 4.2.2)

**Table 4.2.2. Distribution of the respondents according to their opinion on the use of CIPC at persuasion stage of adoption process.**

| Categories | Farmers | | Mean | Standard deviation |
|---|---|---|---|---|
| | Number | Percent | | |
| Low use (5-9) | 25 | 27.17 | 13.33 | 4.22 |
| Medium use (10-14) | 20 | 21.74 | | |
| High use (15-19) | 47 | 51.09 | | |
| Total | 92 | 100 | | |

Table 4.2.2 shows that at persuasion stage more than one half of the respondents (51.09) had high use of CIP channels. Persuasion is a psychological matter. At this stage respondents formed attitude toward BRRI dhan29. Normally interpersonal channels are the best at persuasion stage. Further when interpersonal channels are cosmopolite then respondents become more active to form attitude toward BRRI dhan29.

### 4.2.3. Use of CIP channels at decision stage in adoption of BRRI dhan29

The score of use of CIP channels at decision stage in adoption of BRRI dhan29 ranged from 3 to 12 against the possible range 0 to 24 with mean and standard deviation 6.20 and 1.86 respectively. Based on the obtained score at decision stage the respondents were categorized into three viz. low use, medium use and high use (Table 4.2.3)

**Table 4.2.3. Distribution of the respondents according to their opinion on the use of CIPC in decision stage of adoption.**

| Categories | Farmers | | Mean | Standard deviation |
|---|---|---|---|---|
| | Number | Percent | | |
| Low use (3-6) | 52 | 56.52 | 6.20 | 1.86 |
| Medium use (7-10) | 38 | 41.30 | | |
| High use (>11) | 02 | 02.18 | | |
| Total | 92 | 100 | | |

Data contained in the Table 4.2.3 indicate that almost all the respondents (97.82%) were low user to medium user of CIP channels at decision stage. At decision stage innovation adopter rely upon many sources to make innovation-decision. At this stage

they can give trial themselves, see the result of result demonstration, and can have a vicarious trial by seeing the result of trial given by early adopters. It can be concluded here that the respondents of the study area achieved decision making idea from the trial of early adopters.

### 4.2.4. Use of CIP channels at implementation stage in adoption of BRRI dhan29

Score of use of CIP channels at implementation stage in adoption of BRRI dhan29 ranged from 3 to 12 against the possible range 0 to 48 with mean and standard deviation 6.25 and 1.79 respectively. Based on the obtained score at decision stage the respondents were categorized into three viz. low use, medium use and high use (Table 4.2.4).

**Table 4.2.4. Distribution of the respondents according to their opinion on the use of CIPC in implementation stage of adoption.**

| Categories | Farmers | | Mean | Standard deviation |
|---|---|---|---|---|
| | Number | Percent | | |
| Low use (3-6) | 57 | 61.96 | 6.25 | 1.79 |
| Medium use (7-10) | 33 | 35.87 | | |
| High use (>11) | 02 | 02.17 | | |
| Total | 92 | 100 | | |

Table 4.2.4 reveal that about two thirds of the respondents had low use of CIP channels at implementation stage. The remaining one-third had medium use. At implementation stage farmers need operational information and problem solving information. Conclusion could be drawn that the respondents could obtain operational information and problem solving information from localite IPC channels.

### 4.2.5. Use of CIP channels at confirmation stage in adoption of BRRI dhan29

Use of CIP channels score at confirmation stage in adoption of BRRI dhan29 ranged from 3 to 18 against the possible range 0 to 96 with mean and standard deviation 8.33 and 3.35 respectively. Based upon obtained score at confirmation stage the respondents were categorized into three viz. low use, medium use and high use (Table 4.2.5)

**Table 4.2.5. Distribution of the respondents according to their opinion on the use of CIPC in confirmation stage of adoption.**

| Categories | Farmers | | Mean | Standard deviation |
|---|---|---|---|---|
| | Number | Percent | | |
| Low use (3-8) | 56 | 60.87 | 8.33 | 3.35 |
| Medium use (9-14) | 33 | 35.87 | | |
| High use (>15) | 03 | 03.26 | | |
| Total | 92 | 100 | | |

It is revealed from the Table 4.2.5 that more than three fifths of the respondents were low user of CIP channels at confirmation stage. The remaining two-fifths respondents were medium to high user. Confirmation stage is a complex stage where adopters of innovation can continue the innovation or discontinue it. Discontinue can be occurred by replacement. Finally, later adoption can occur who rejected at decision stge. Normally, the high and medium user of CIP channels are supposed to be early majority and low user are late majority. Early majority use CIP at confirmation stage more than late majority. Late majority depends upon early majority to confirme the innovation decision.

### 4.3. Preferences of Use of CIP channels at different Stages in Adoption of BRRI dhan29.

To compare preferences of use of CIP channels at each stage in adoption of BRRI Dhan29, CIPC use index (CIPCUI) for each channel at each stage were computed. The CIPC use index (CIPCUI) of a particular channels at knowledge stage could range from 0 to 1104, at persuasion stage from 0 to 736, at decision stage from 0 to 368, at implementation stage from 0 to 736 and confirmation stage from 0 to 1472. The six CIP channels used at different stages in adoption of BRRI Dhan29 have arranged in rank order in Table 4.3.1 on the basis of their respective CIPCUI.

**Table 4.3.1: Rank order of CIP channels used by the farmers at five stages in adoption of BRRI dhan29**

| CIP channels | Knowledge stage | | Persuasion stage | | Decision stage | | Implementation stage | | Confirmation stage | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Score (CIPCUI) | Rank order | Score (CIPCUI) | Rank order | Score (CIPCUI) | Rank order | Score (CIPCUI) | Rank order | Score (CIPCUI) | Rank order |
| Method demonstration | 123 | 5 | 14 | 6 | 18 | 5 | 1 | 6 | 10 | 6 |
| Result demonstration | 107 | 6 | 112 | 4 | 8 | 6 | 35 | 4 | 99 | 4 |
| Group discussion | 203 | 4 | 96 | 5 | 40 | 4 | 29 | 5 | 66 | 5 |
| Farmers training | 265 | 3 | 252 | 2 | 128 | 3 | 131 | 3 | 143 | 2 |
| Office call | 315 | 2 | 250 | 3 | 130 | 2 | 136 | 2 | 137 | 3 |
| Farm and home visit | 703 | 1 | 505 | 1 | 245 | 1 | 250 | 1 | 321 | 1 |

Rank order of CIP channels in Table 4.3.1 reveal the preferences of use of CIP channels by the respondents of the study. Clearly it is evident that the adopters of BRRI dhan29 preferred most farm and home visit at all the five stages of innovation decision process and secured first position, which was followed by farmers training (2) and office call (3). The result contradicts with the present extension approach of DAE. Since 1982 DAE has been using group approach for transfer of technology. But the table indicate that farm and home visit can not be avoided. Along with farm and home visit, farmers training also has become important.

### 4.4 Relationship between the independent and dependent variables

As mentioned earlier, the ten selected characteristics of the farmers were the independent variables of the study. The variables were age, education, family size, farm

size, annual income, organizational participation, innovativeness, attitude towards BRRI dhan29, problems in using BRRI dhan29 and use of mass media. Each of the characteristics of the farmers constituted independent variables while stagewise use of CIP channels by the farmers in adoption of BRRI dhan29 was the dependent variable in this study.

a. The purpose of the section is to examine the relationship of each of the independent variables with the dependent variables. Pearson Product Moment Co-efficient of Correlation (r) was computed to determine the relationship between any two variables conc

The relationship showed the negative significant. Based on the overall findings it was concluded that age and stagewise use of CIP channels had significant negative relationship. This indicates that age is the important factor in use of CIP channels at the stages of innovation decision process. That is young farmers use more CIP channels at the stages of innovation decision process. erned (Table 4.5).

**Table 4.5 : Relationship between the independent and dependent variables**

| Dependent variable | Independent variables | Correlation Co-efficient | | | | | | Tabulated value of 'r' with 90df | |
|---|---|---|---|---|---|---|---|---|---|
| | | Overall Use of CIPC Media | Knowledge stage | Persuasion stage | Decision stage | Implementation stage | Confirmation stage | 0.05 level | 0.01 level |
| Stagewise Use of CIPC Channels in Receiving Information for Farmer Adoption of BRRI dhan 29 | Age | -0.351** | -0.300** | -0.367** | -0.280** | -0.261* | -0.179$^{NS}$ | 0.205 | 0.267 |
| | Education | 0.275** | 0.311** | 0.271** | 0.141$^{NS}$ | 0.165$^{NS}$ | 0.116$^{NS}$ | | |
| | Family size | -0.259* | -0.214* | -0.266* | -0.209* | -0.253* | -0.129$^{NS}$ | | |
| | Farm Size | 0.177$^{NS}$ | 0.098$^{NS}$ | 0.226* | 0.165$^{NS}$ | 0.088$^{NS}$ | 0.126$^{NS}$ | | |
| | Annual Income | 0.199$^{NS}$ | 0.160$^{NS}$ | 0.232* | 0.150$^{NS}$ | 0.136$^{NS}$ | 0.100$^{NS}$ | | |
| | Social participation | 0.209* | 0.246* | 0.232* | 0.077$^{NS}$ | 0.183$^{NS}$ | 0.031$^{NS}$ | | |
| | Innovativeness | 0.176$^{NS}$ | 0.261* | 0.203$^{NS}$ | 0.004$^{NS}$ | -0.091$^{NS}$ | 0.006$^{NS}$ | | |
| | Attitude towards BRRI dhan 29 | -0.286** | -0.208* | -0.334** | -0.329** | -0.193$^{NS}$ | -0.156$^{NS}$ | | |
| | Problems in using BRRI dhan 29 | -0.077$^{NS}$ | -0.121$^{NS}$ | -0.055$^{NS}$ | -0.158$^{NS}$ | 0.006$^{NS}$ | 0.076$^{NS}$ | | |
| | Use of mass media | -0.220* | -0.140$^{NS}$ | -0.187$^{NS}$ | -0.196$^{NS}$ | -0.115$^{NS}$ | -0.236* | | |

$^{**}$Significant at 0.01 level of probability

$^{*}$ Significant at 0.05 level of probability

$^{NS}$ Non Significant

### 4.5.1 Age and stagewise use of CIP channels

Relationship between age and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis, "There is no relationship between age and stagewise use of CIP channels". The coefficient of correlation between age and stagewise use of CIP channels was presented in Table 4.5. The coefficient of correlation between concerned variables were found to be -0.300 at knowledge stage, -0.367 at persuasion stage, -0.280 at decision stage, -0.261 at

implementation stage, -0.179 at confirmation stage and -0.351 in overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5 level of probability.

The following observation were made:

a. Computed value of 'r' at knowledge stage, persuasion stage and decision stage were greater than tabulated value at 0.01 level of probability. The computed value 'r' at implementation stage was greater than tabulated value at 0.05 level of probability. In these cases the null hypotheses were rejected. But in case of confirmation stage the calculated value of 'r' was smaller than tabulated value. In this case the null hypothesis could not be rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and age the computed value was found to be -0.351, which was greater than tabulated value of 0.01 level of probability. In this case null hypothesis was rejected.
b. The relationships between age and five stages of innovation decision process was found statistically significant except the fifth stage the confirmation further, the overall use of CIP channels at five stages of innovation decision process and age was also found to be statistically significant.
c. The relationship showed the negative significant. Based on the overall findings it was concluded that age and stagewise use of CIP channels had negatively significant relationship. This indicates that age is the important factor in use of CIP channels at the stages of innovation decision process. That is young farmers use more CIP channels at the stages of innovation decision process.

### 4.5.2 Education and stagewise use of CIP channels

Relationship between education and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between education and stagewise use of CIP channels was presented in Table 4.5.

The coefficient of correlation between concerned variable were found 0.311 at knowledge stage, 0.271 at persuasion stage, 0.141 at decision stage, 0.165 at implementation stage, 0.116 at confirmation stage and 0.275 is overall use of CIP

channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5 level of probability.

The following observations were made:

a) Computed value of 'r' at knowledge stage and persuasion stage were greater than tabulated value at 0.01 level of probability. In these cases the null hypotheses were rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and education the computed value was found to be 0.275, which was greater than tabulated value of 0.01 level of probability. In this case null hypothesis was rejected.
b) The relationships between education level of respondents and five stage of innovation decision process was found statistically significant except the third, fourth and fifth stage the decision, implementation and confirmation respectively. Further, the overall use of CIP channels at five stages of innovation decision process and education was also found to be statistically significant.
c) The relationship showed the positive significance. Based on the overall findings it was concluded that education and stagewise use of CIP channels had significant positive relationship. This indicates that education is the important factor in use of CIP channels at the stages of innovation decision process. That is more the education more the use of CIPC at the stages of innovation decision process.

### 4.5.3 Family size and stagewise use of CIP channels

Relationship between family size and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between family size and stagewise use of CIP channels is presented was Table 4.5.

The coefficient of correlation between concerned variable were found -0.214 at knowledge stage, -0.266 at persuasion stage, -0.209 at decision stage, -0.253 at implementation stage, -0.129 at confirmation stage and -0.259 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of ‘r’ at all stages were greater than tabulated value at 0.05 level of probability. In these cases the null hypotheses could not be rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and family size the computed value was found to be -0.259, which was greater than tabulated value of 0.05 level of probability. In this case null hypothesis could be rejected.
b) The relationships between family size and five stage of innovation decision process was found statistically significant except the fifth stage the confirmation. Further, the overall use of CIP channels at five stages of innovation decision process and family size was also found to be statistically significant.
c) The relationship showed the negative significant. Based on the overall findings it was concluded that family size and stagewise use of CIP channels had significant negative relationship. This indicates that family size is the important factor in use of CIP channels at the stages of innovation decision process. That is, smaller the family size more the use of CIP channels.

### 4.5.4 Farm size and stagewise use of CIP channels

Relationship between farm size and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between farm size and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variables were found 0.098 at knowledge stage, 0.226 at persuasion stage, 0.165 at decision stage, 0.088 at implementation stage, 0.126 at confirmation stage and 0.177 in overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of ‘r’ at all stages were smaller than tabulated value at 0.05 level of probability except persuasion stage. The correlation ‘r’ at this stage was found to be .226 which is greater than tabulated value at 0.05 level of probability. In these cases the null hypotheses are not rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and farm size the computed value was found to be 0.177,

which was smaller than tabulated value of 0.05 level of probability. In this case null hypothesis is not rejected.

b) The relationships between farm size and five stages of innovation decision process was found statistically insignificant except the second stage the persuasion further, the overall use of CIP channels at five stages of innovation decision process and farm size was also found to be statistically insignificant.

c) The relationship showed the positive insignificant. Based on the overall findings it was concluded that farm size and stagewise use of CIP channels had insignificant positive relationship. This indicates that farm size was not the important factor in use of CIP channels at the stages of innovation decision process. But it was important at persuasion stage.

### 4.5.5 Annual family income and stagewise use of CIP channels

Relationship between annual family income and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between annual family income and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variable were found 0.160 at knowledge stage, 0.232 at persuasion stage, 0.150 at decision stage, 0.136 at implementation stage, 0.100 at confirmation stage and 0.199 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of ‘r’ at all stages were smaller than tabulated value at 0.05 level of probability except persuasion stage. The correlation at this stage was .232 which was greater than tabulated value at 0.05 level of provability. In these cases the null hypotheses are not rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and annual family income the computed value was found to be 0.199, which was also smaller than tabulated value of 0.05 level of probability. In this case null hypothesis could not be rejected.

b) The relationships between annual family income and five stages of innovation decision process was found statistically insignificant except the second stage the persuasion stage. Further, the overall use of CIP channels at five stages of

innovation decision process and annual family income was also found to be statistically non significant.

c) The relationship showed the positive non significant. Based on the overall findings it was concluded that annual family income and stagewise use of CIP channels had insignificant positive relationship. This indicates that annual family income was not the important factor in use of CIP channels at the stages of innovation decision process. But it was important a persuasion stage.

### 4.5.6 Organizational participation and stagewise use of CIP channels

Relationship between organizational participation and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between organizational participation and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variable were found 0.246 at knowledge stage, 0.232 at persuasion stage, 0.077 at decision stage, 0.183 at implementation stage, 0.031 at confirmation stage and 0.209 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of 'r' at stages of knowledge and persuasion were greater than tabulated value at 0.05 level of probability. In these cases the null hypotheses could be rejected. But in case of decision, implementation and confirmation stages, then correlation was found to be smaller than tabulated value at 0.05 level of probability. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and organizational participation the computed value was found to be 0.209, which was smaller than tabulated value of 0.01 level of probability. In this case null hypothesis was rejected.

b) The relationships between organizational participation and five stage of innovation decision process was found statistically insignificant except the first and second stage the knowledge and persuasion respectively. Further, the overall use of CIP channels at five stages of innovation decision process and annual family income was found to be statistically significant.

c) The relationship showed the positive significant. Based on the overall findings it was concluded that organizational participation and stagewise use of CIP

channels had significant positive relationship. This indicates that organizational participation is the important factor in use of CIP channels at the stages of innovation decision process.

### 4.5.7 Innovativeness and stagewise use of CIP channels

Relationship between innovativeness and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between innovativeness and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variables were found 0.261 at knowledge stage, 0.203 at persuasion stage, 0.004 at decision stage, 0.091 at implementation stage, 0.006 at confirmation stage and 0.176 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of ‘r’ at knowledge stage was greater than tabulated value and the null hypothesis in this regard was rejected. But as the correlation at remaining four stages were found to be smaller than table value the null hypothesis in these cases could not be rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and innovativeness the computed value was found to be 0.176, which was smaller than tabulated value of 0.01 level of probability. In this case null hypothesis is not rejected.
b) The relationships between innovativeness and five stage of innovation decision process was found statistically insignificant except the first stage the knowledge further, the overall use of CIP channels at five stages of innovation decision process and innovativeness was found to be statistically insignificant.
c) The relationship showed the positive insignificant. Based on the overall findings it was concluded that innovativeness and stagewise use of CIP channels had insignificant positive relationship. This indicates that innovativeness is not the important factor in use of CIP channels at the stages of innovation decision process. But it is important at knowledge stage only.

### 4.5.8 Attitude toward BRRI dhan29 and stagewise use of CIP channels

Relationship between attitude toward BRRI dhan29 and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between attitude toward BRRI dhan29 and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variable were found -0.208 at knowledge stage, -0.334 at persuasion stage, -0.329 at decision stage, -0.193 at implementation stage, -0.156 at confirmation stage and -0.286 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observation were made:

a) Computed value of 'r' at persuasion stage and decision stage were greater than tabulated value at 0.01 level of probability. The computed value 'r' at knowledge stage was greater than tabulated value at 0.05 level of probability. In these cases the null hypotheses are rejected. But in case of implementation and confirmation stage the calculated value of 'r' was smaller than tabulated value. In this case the null hypothesis could not be rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and attitude toward BRRI dhan29 the computed value was found to be -0.286, which was greater than tabulated value of 0.01 level of probability. In this case null hypothesis was rejected.

b) The relationships between attitude toward BRRI dhan29 and five stages of innovation decision process was found statistically significant except the fourth and fifth stage the implementation and confirmation respectively further, the overall use of CIP channels at five stages of innovation decision process and attitude toward BRRI dhan29 was also found to be statistically significant.

c) The relationship showed the negative significant. Based on the overall findings it was concluded that attitude toward BRRI dhan29 and stagewise use of CIP channels had significant negative relationship. This indicates that attitude toward BRRI dhan29 was the important factor in use of CIP channels at the stages of innovation decision process.

### 4.5.9 Problems in using BRRI dhan29 and stagewise use of CIP channels

Relationship between problems in using BRRI dhan29 and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between problems in using BRRI dhan29 and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variable were found -0.121 at knowledge stage, -0.055 at persuasion stage, -0.158 at decision stage, 0.006 at implementation stage, 0.076 at confirmation stage and -0.077 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of 'r' at all stages were smaller than tabulated value at 0.05 level of probability. In these cases the null hypotheses could not be rejected. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and problems in using BRRI dhan29 the computed value was found to be -0.077, which was smaller than tabulated value of 0.05 level of probability. In this case null hypothesis could not be rejected.
b) The relationships between problems in using BRRI dhan29 and five stages of innovation decision process was found statistically insignificant. Further, the overall use of CIP channels at five stages of innovation decision process and innovativeness was found to be statistically insignificant.
c) The relationship showed the negative insignificant. Based on the overall findings it was concluded that problems in using BRRI dhan29 and stagewise use of CIP channels had insignificant negative relationship. This indicates that problems in using BRRI dhan29 was not the important factor in use of CIP channels at the stages of innovation decision process.

### 4.5.10 Use of mass channels and stagewise use of CIP channels

Relationship between use of mass channels and stagewise use of CIP channels was determined by pearson product moment correlations coefficient to test the null hypothesis. The coefficient of correlation between use of mass channels and stagewise use of CIP channels is presented in Table 4.5.

The coefficient of correlation between concerned variable were found -0.140 at knowledge stage, -0.187 at persuasion stage, -0.196 at decision stage, -0.115 at implementation stage, -0.236 at confirmation stage and -0.220 is overall use of CIP channels at different stages. The tabulated value was 0.267 at 0.01 level of probability and 0.205 at 0.5level of probability.

The following observations were made:

a) Computed value of 'r' at confirmation stage was greater than table value at 0.05 level of probability. In this case the null hypothesis is could be rejected. The value of 'r' at first four stages were found to be smaller than table value at 0.05 level of probability. In these case null hypothesis were accepted. However, the relationship between overall use of CIP channels at all the stages of innovation decision process and use of mass channels the computed value was found to be -0.220, which was greater than tabulated value of 0.05 level of probability. In this case null hypothesis could not be rejected.
b) The relationships between use of mass channels and five stage of innovation decision process was found statistically non significant except fifth stage the confirmation further, the overall use of CIP channels at five stages of innovation decision process and use of mass channels was found to be statistically significant.
c) The relationship showed the negative significant. Based on the overall findings it was concluded that use of mass channels and stagewise use of CIP channels had significant negative relationship. This indicates that use of mass channels is the important factor in use of CIP channels at the stages of innovation decision process.

# CHAPTER V

# SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

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

## 5.1 Summary of the Findings

The summary of the major findings are presented in the following subsections:

### 5.1.1 Selected Characteristics of Farmers

**Age:**

The age of the sample farmers range from 26 to 62 years with an average of 41.70 and standard deviation of 8.65. The highest proportion (58.70) of the respondents were middle aged compared to 29.35 percent being young and 11.95 percent old aged.

**Education**

Education scores of farmers ranged from 0 to 12. The average score was 4.13 with the standard deviation 4.03. About 40.22 percent of the farmers fell under the category of no education, 27.17 percent comprised of primary education, 25 percent comprised secondary education and 7.61 percent had above secondary education.

**Family size**

The family size of the farmers ranged from 2 to 12 with an average 5.18 and standard deviation 2.27. The highest proportion (46.74 percent) of the farmers fell under the medium family category compared to 39.13 percent and 14.13 percent having small and large family category respectively.

**Farm size**

The farm size of the farmers in the study area varied from 0.15 to 2.19 hectares (ha). The average farm size was 5.18 ha with the standard deviation 2.27. The highest proportion (55.43 percent) of the farmers belonged to small farm size compared to 35.87 and 5.43 percent having medium and large farm size respectively and 3.26 percent belonged marginal farm size.

**Annual income**

Annual income of the farmers ranged from TK. 37.20 to 259.00 (Taka in thousand) with the mean of Tk. 93.69 and standard deviation 46.54. The highest proportion (54.35 percent) of the farmers had medium annual income, while only 33.70 percent had low income and 11.95 percent had high income.

**Innovativeness**

Innovativeness score of the farmer ranged from 4 to 23, with an average of 13.82 and standard deviation of 5.25. About 28.26 percent of the respondent had low innovativeness, 46.74 percent of the respondent had medium innovativeness and 25 percent of the respondent had high innovativeness.

**Organizational participation**

The observed organizational participation scores of the farmers ranged from 0 to 10 with an average 1.85 and standard deviation of 2.20. The highest proportion (41.30 percent) of the farmers had no organizational participation as compared to, 38.05 percent low and 16.30 percent medium organizational participation and 4.35 percent high organizational participation.

**Attitude toward BRRI dhan 29**

Attitude toward BRRI dhan 29 score of the farmers ranged from 17 to 39, with an average 25.14 and standard deviation 6.06. The highest proportion of the respondent 42.39 percent had favorable, 18.48 percent had high favorable and 39.13 percent had low favorable attitude towards BRRI dhan 29.

**Problem in using BRRI dhan 29**

Problem severity score of the farmers ranged from 2 to 14 ,with an average 6.11 and standard deviation 2.53. The highest proportion of the respondent 50 percent faced medium confrontation, 41.30 percent of the farmers faced low and 8.70 percent of the farmers faced high confrontation.

**Use of mass media**

Use of mass media score of the farmers ranged from 1 to 6, with an average 2.84 and standard deviation 1.30. The highest proportion of the respondent 71.74 percent had very low use and 28.26 percent had medium use of mass media.

### 5.1.2 Test of hypothesis

The null hypothesis were tasted to examine the relationship of ten selected characteristics of the farmers with their stagewise use of CIPC media in adoption of BRRI dhan 29. The result of hypothesis testing are briefly presented below:

**Age and stagewise use of CIPC media**

Age of the farmers had negative and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Education and stagewise use of CIPC media**

There was positive and significant relationship between education of the farmers and their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Family size and stagewise use of CIPC media**

Family size of the farmers had negative and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Farm size and stagewise use of CIPC media**

Farm size of the farmer had no significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Annual income and stagewise use of CIPC media**

There was no relationship between annual income of the farmers with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Social participation and stagewise use of CIPC media**

Social participation had positive and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Innovativeness and stagewise use of CIPC media**

There was no relationship between innovativeness of the farmers and their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Attitude towards BRRI dhan 29 and stagewise use of CIPC media**

Attitude towards BRRI dhan 29 of the farmers had negative and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Problems in using BRRI dhan 29 and stagewise use of CIPC media**

Problem in using BRRI dhan 29 of the farmers had no relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29.

**Use of mass media and stagewise use of CIPC media**

There was negative and significant relationship between use of mass media of the farmers and their stagewise use of CIPC media in adoption of BRRI dhan 29.

## 5.2 Conclusions

Considering the objectives of the study and the above guidelines for writing a conclusion of a research report, the specific conclusion of the present study may be drawn as follows:

1. Age of the farmer had negative and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29. This means that the more the age of the farmers the less is their use of CIPC media.

2. Education of the farmers had a positive and highly significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29 which lead to the conclusion that more the level of education of the farmers the more will be their wise use of CIPC media in adoption of BRRI dhan 29.

3.Social participation of the respondents had a positive and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29. This indicates that with the increase of social participation of farmers the stagewise use of CIPC media is also increased.

4. Attitude towards BRRI dhan 29 of the farmers had negative and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29. Which implied that with increase in the attitude toward BRRI dhan 29 of the farmers their use of CIPC media is decreased. This means that the more the attitude toward BRRI dhan 29 of the farmers the less is their use of CIPC media.

5. Use of mass media had negative and significant relationship with their stagewise use of CIPC media in adoption of BRRI dhan 29. Which implied that the more the use of mass media of the farmers the less is their use of CIPC media.

6. The statistical analysis revealed that characteristics such as farm size, annual income, innovativeness and problem in using BRRI dhan 29 were not related to their stagewise use of CIPC media in adoption of BRRI dhan 29. This means that these characteristics were independent to the stagewise use of CIPC media.

7. Method demonstration, result demonstration, group discussion, farmers training, office call and farm and home visit were used by as communication media by the farmers in adoption of BRRI dhan 29.

8. In innovation decision process there are five stages play an important roles in adoption of BRRI dhan 29.Where CIPC media helps the farmers in adoption at each stages such as knowledge stage, persuasion stage, decision stage, implementation stage and confirmation stage.

### 5.3 Recommendations

#### 5.3.1 Recommendations for policy implication

On the basis of the findings and conclusion of the study, the following recommendations for policy implication are made:

1. Considering the overall situation, it should recommended that care should be taken by the Department of Agricultural Extension (DAE) and other development agencies is properly handling CIPC media with the farmers. It should be remembered that failure of one effort may be reduce credibility of a particular media.

2. It was revealed that the farmers with better organizational participation could expose themselves more with various CIPC media. Therefore, group approach of extension could effectively be used by different extension agencies in dissemination information.

3.To get diversified information, highly use/dependency on only one media such as local leader is not effective. So, different extension organizations should ensure the use of various kinds of communication media by the model farmers.

4.To ensure CIPC media use in all stages of innovation decision process and also increase farmers interest in newly released innovation to adoption by using media.

#### 5.3.2 Recommendations for further study

The researcher conducted a small piece of study which could not make available all information for proper understanding the stagewise use of CIPC media on adoption of BRRI dhan 29. Therefore, following suggestions are put forwarded for further investigation:

1. The present study was conducted into four village of Gafargaon upazila under Mymensingh district. So, similar attempts may be undertaken in other parts of the country to verify the results.

2. Research was limited with ten characteristics of the farmers, but there are so many characteristics which can influence the stagewise use of CIPC media by the farmers as agricultural information sources. So, considering other characteristics; similar research may be conducted.

3. Age, education, family size, social participation, attitude toward BRRI dhan 29 and use of mass media showed significant relationships with their stagewise use of CIPC media on adoption of BRRI dhan 29. Hence, further investigation is necessary to find out such relationships between the concerned variables to authentic the present findings.

4. In the present study farm size, annual income, innovativeness and problem in using BRRI dhan 29 had no relationship to their stagewise use of CIPC media in adoption of BRRI dhan 29. In this connection further research is necessary.

5.DAE personnel should work for motivation of the farmers of Gafargaon upazila to adoption of BRRI dhan29. So that, in future they could posses favorable attitude.

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**APPENDIX-A**

**English version of the interview schedule**
**Department of Agricultural extension and Information System**
**Sher-e-Bangla Agricultural University, Dhaka-1207**

**An interview schedule on the study of**

**STAGEWISE USE OF COSMOPOLITE INTERPERSONAL COMMUNICATION CHANNELS IN ADOPTION OF BRRI DHAN 29**

**Date:……** **Respondents**
**No:……**

Name of the respondent :
Village: Union:
Upazila: District:

**Please answer the following questions:**

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

**2. Level of Education :**
Please mention your level of education :

a) I cannot read and write (……)
b) I can sign only (……)
c) I studied up to class (……)

**3. Family Size :**
Your family have……members (With self)

**4. Farm Size :**

Please mention the area of your land according to use :

| Sl No | Type of land Use | Area of land | |
|---|---|---|---|
| | | Local Unit (Decimal/Bigha) | Hectare |
| a. | Homestead area including garden, pond and fallow land | | |
| b. | Own land under own cultivation | | |
| c. | Land taken from others on share cropping | | |
| d. | Land given to others on share cropping | | |
| e. | Land taken from others on lease | | |
| Total Farm Size =a+b+1/2(c+d)+e<br>= | | | |

**5. Annual income :**

Please mention your last year annual income from the following sources:

A. **Income from agricultural crops :**

| SL NO | Name of crops | Total income(Tk) |
|---|---|---|
| 1. | Rice | |
| 2. | Wheat | |
| 3. | Jute | |
| 4. | Mustard | |
| 5. | Pulse | |
| 6. | Vegetables | |
| 7. | Fruits | |
| 8. | Flowers | |
| 9. | Others (if any) | |
| | **Sub-total** | |

**(B) Income from domestic animals and fisheries :**

| Sl No | Source of income | Total income (Tk) |
|---|---|---|
| 1. | Livestock | |
| 2. | Poultry | |
| 3. | Fisheries | |
| | **Sub-total** | |

**(C) Income from Non-agricultural source :**

| Sl No | Source of income | Total income (Tk) |
|---|---|---|
| 1. | Service | |
| 2. | Business | |
| 3. | Day Labor | |
| 4. | Other Family Members | |
| | **Sub-total** | |

**Total annual income = (A+B+C)**
**=……Taka**

## 6. Organizational participation:

Please indicate the nature of participation in the following organizations.

| Sl No | Name of Organization | No Participation (0) | Nature of Involvement | | | Duration |
|---|---|---|---|---|---|---|
| | | | As ordinary member (1) | As Executive Member (2) | President/ Secretary (3) | |
| 1 | NGO co-operative society | | | | | |
| 2 | krishak Samabay Somity | | | | | |
| 3 | Village Development Committee | | | | | |
| 4 | Irrigation Committee | | | | | |
| 5 | Mosque/ Madrasa committee | | | | | |
| 6 | Union Parishad committee | | | | | |
| 7 | Youth Club | | | | | |
| 8 | Bazar Committee | | | | | |
| 9 | School committee | | | | | |
| 10 | Others (if any) | | | | | |

**7. Innovativeness:**

Indicate adoption period of following technologies:

| Sl No. | Name of Technologies | Adoption Period | | | | |
|---|---|---|---|---|---|---|
| | | Within 1 yr after hearing (4) | Within 2 yrs after hearing (3) | Within 3 yrs after hearing (2) | Within More than 3 yrs after hearing (1) | No Adoption (0) |
| 1. | Seeding growing method of BRRI dhan 29 | | | | | |
| 2. | Recommended seedling age | | | | | |
| 3. | Line transplanting | | | | | |
| 4. | Recommended balance fertilizer dose | | | | | |
| 5. | Supplementary irrigation | | | | | |
| 6. | Integrated Pest Management | | | | | |

## 8.Attitude towards BRRI dhan 29:
## Please indicate your opinion against the following statements

| Sl No | Statements | Degree of attitude | | | | |
|---|---|---|---|---|---|---|
| | | Strongly agree | Agree | No opinion | Disagree | Srongly disagree |
| 1(+) | Modern variety of rice is more productive than local variety | | | | | |
| 2(-) | Modern rice variety is more disease and insect susceptible | | | | | |
| 3(+) | It is necessary to use recommended doses of fertilizer to get more yield | | | | | |
| 4(-) | IPM is not better than chemical control | | | | | |
| 5(+) | Gutee urea use is profitable than granular urea | | | | | |
| 6(-) | Application of gutee urea is difficult | | | | | |
| 7(+) | Organic fertilizer helps to preserve soil properties | | | | | |
| 8(-) | Over use of fertilizer and insecticide is not harmful for the environment | | | | | |
| 9(+) | Line sowing of seeds is better than broadcast method to get more yield | | | | | |
| 10(-) | Line sowing is labor intensive | | | | | |

**9.Problems in using BRRI dhan 29:**

| Sl No | Name of agricultural technology | Severity of problem | | | |
|---|---|---|---|---|---|
| | | Very high | High | Medium | Not at all |
| 1 | Lack of quality seed | | | | |
| 2 | Difficult to use recommended doses of fertilizer | | | | |
| 3 | Difficult to use IPM practices | | | | |
| 4 | More insect attack | | | | |
| 5 | No source of supplementary irrigation | | | | |
| 6 | Outbreak of diseases in the field of BRRI dhan 29 | | | | |
| 7 | Seed treatment fungicide is not available | | | | |
| 8 | Excessive rain in harvesting and threshing time | | | | |
| 9 | Market price of paddy/rice is low | | | | |

**10.Use of mass media:**

Please mention how mass media play an important role in creating awareness about BRRI dhan 29

| Sl No | Mass Media | Degree of awareness | | | |
|---|---|---|---|---|---|
| | | Very high | Medium | Less | Not |
| 1 | Farm Radio Talk | | | | |
| 2 | Farm TV program | | | | |
| 3 | Newspaper | | | | |
| 4 | Poster | | | | |
| 5 | Leaflet | | | | |

**11.Use of cosmopolite IPC channels in adoption stages**
**A. Knowledge stage**

| Sl No | Item wise question | Interpersonal Communication Channels | Degree of use of interpersonal channels | | | | |
|---|---|---|---|---|---|---|---|
| | | | High | Medium | Low | Very low | No use |
| 1 | Knowledge of Existence of BRRI dhan 29 (Which cosmopolite IPC channels at what extent helped you to know about BRRI dhan 29? ) | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Group discussion | | | | | |
| | | Farmers training | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |
| 2. | Operational knowledge of BRRI dhan 29 (Which cosmopolite IPC channels at what extent helped you to know cultivation procedure of BRRI dhan 29? ) | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Farmers training | | | | | |
| | | Group discussion | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |
| 3. | Beneficial knowledge of BRRI dhan 29 (Which cosmopolite IPC channels at what extent helped you to know about benefits of BRRI dhan 29? ) | Result demonstration | | | | | |
| | | Group discussion | | | | | |
| | | Farmers training | | | | | |
| | | Method demonstrations | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |

**b. Persuasion stage**

| Sl No | Item wise question | Interpersonal Communication Channels | Degree of use of interpersonal channels | | | | |
|---|---|---|---|---|---|---|---|
| | | | High | Medium | Low | Very low | No use |
| 1 | Creation of Interest in BRRI dhan 29 (Which cosmopolite IPC channels at what extent created interest in you about BRRI dhan 29?) | Group discussion | | | | | |
| | | Farmers training | | | | | |
| | | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |
| 2. | Evaluation of BRRI dhan 29<br><br>(Which cosmopolite IPC channels at what extent helped you to understand the relative advantage of BRRI dhan 29? ) | Group discussion | | | | | |
| | | Farmers training | | | | | |
| | | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |

**c. Decision stage**

| Sl No | Item wise question | Interpersonal Communication Channels | Degree of use of interpersonal channels | | | | |
|---|---|---|---|---|---|---|---|
| | | | High | Medium | Low | Very low | No use |
| 1 | Trial of BRRI dhan 29. (Which cosmopolite IPC channels helped you to watch and give trial of BRRI dhan 29? ) | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Farmers training | | | | | |
| | | Group discussion | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |

**d. Implementation stage**

Mention your decision for adoption or rejection of BRRI dhan 29

Adoption ☐ Rejection ☐

| Sl No | Item wise question | Interpersonal Communication Channels | Degree of use of interpersonal channels | | | | |
|---|---|---|---|---|---|---|---|
| | | | High | Medium | Low | Very low | No use |
| 1 | Full use of BRRI dhan 29 (Which cosmopolite IPC channels at what extent helped you to use BRRI dhan 29 at full scale? ) | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Farmers training | | | | | |
| | | Group discussion | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |
| 2. | Solving operational problems<br><br>(Which cosmopolite IPC channels at what extent helped you to solving problem during cultivation of BRRI dhan 29 ? ) | Result demonstration | | | | | |
| | | Method demonstrations | | | | | |
| | | Group discussion | | | | | |
| | | Farmers training | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |

**e. Confirmation stage**

e(i) you confirmed to continue to cultivate BRRI dhan 29 ?

Yes ☐ No ☐

| Sl No | Item wise question | Interpersonal Communication Channels | Degree of use of interpersonal channels | | | | |
|---|---|---|---|---|---|---|---|
| | | | High | Medium | Low | Very low | No use |
| 1. | Continuance<br><br>(If yes which cosmopolite IPC channels at what extent helped you to be confirmed and to continue to the cultivate BRRI dhan 29? ) | Method demonstrations | | | | | |
| | | Result demonstration | | | | | |
| | | Farmers training | | | | | |
| | | Group discussion | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |
| 2. | Discontinuance (If no which cosmopolite IPC channels at what extent helped to take the decision of discontinuance of cultivation of BRRI dhan 29? ) | Result demonstration | | | | | |
| | | Method demonstrations | | | | | |
| | | Group discussion | | | | | |
| | | Farmers training | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |

e(ii)Have you replaced BRRI dhan 29 by better one ?

Yes ☐ No ☐

| Sl No | Item wise question | Interpersonal Communication Channels | Degree of use of interpersonal channels | | | | |
|---|---|---|---|---|---|---|---|
| | | | High | Medium | Low | Very low | No use |
| 1. | Replacement (If yes, Which cosmopolite IPC channels at what extent helped you to replace BRRI dhan 29 ?) | Result demonstration | | | | | |
| | | Method demonstrations | | | | | |
| | | Farmers training | | | | | |
| | | Group discussion | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |
| 2. | Later adoption (If you rejected BRRI dhan 29 in the begining Which cosmopolite IPC channels at what extent helped you for later adoption of BRRI dhan 29?) | Result demonstration | | | | | |
| | | Method demonstrations | | | | | |
| | | Farmers training | | | | | |
| | | Group discussion | | | | | |
| | | Office call | | | | | |
| | | Farm and home visit | | | | | |

## Correlation Matrix of the Independent and Dependent Variables (N=92)

# APPENDIX-B

**Correlations**

| | | Age | Education | Family | Farm | Participation | Innovativeness | Attitude | Problem | Massmedia | Income | CIPC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | -.176 | .565** | .083 | -.166 | -.046 | .362** | .235* | .001 | .014 | -.351** |
| | Sig. (2-tailed) | | .094 | .000 | .434 | .114 | .665 | .000 | .024 | .989 | .896 | .001 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Education | Pearson Correlation | -.176 | 1 | -.231* | .075 | .863** | .456** | -.182 | -.186 | .339** | .104 | .275** |
| | Sig. (2-tailed) | .094 | | .027 | .480 | .000 | .000 | .082 | .075 | .001 | .326 | .008 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Family | Pearson Correlation | .565** | -.231* | 1 | .035 | -.182 | -.081 | .113 | .175 | -.027 | -.035 | -.259* |
| | Sig. (2-tailed) | .000 | .027 | | .739 | .083 | .442 | .282 | .096 | .798 | .744 | .012 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Farm | Pearson Correlation | .083 | .075 | .035 | 1 | .098 | -.004 | -.082 | .137 | -.109 | .722** | .177 |
| | Sig. (2-tailed) | .434 | .480 | .739 | | .351 | .967 | .439 | .192 | .301 | .000 | .092 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Participation | Pearson Correlation | -.166 | .863** | -.182 | .098 | 1 | .471** | -.196 | -.052 | .319** | .097 | .209* |
| | Sig. (2-tailed) | .114 | .000 | .083 | .351 | | .000 | .061 | .621 | .002 | .356 | .045 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Innovativeness | Pearson Correlation | -.046 | .456** | -.081 | -.004 | .471** | 1 | -.190 | -.274** | .060 | -.122 | .176 |
| | Sig. (2-tailed) | .665 | .000 | .442 | .967 | .000 | | .069 | .008 | .569 | .245 | .093 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Attitude | Pearson Correlation | .362** | -.182 | .113 | -.082 | -.196 | -.190 | 1 | .022 | -.022 | -.159 | -.286** |
| | Sig. (2-tailed) | .000 | .082 | .282 | .439 | .061 | .069 | | .837 | .834 | .130 | .006 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Problem | Pearson Correlation | .235* | -.186 | .175 | .137 | -.052 | -.274** | .022 | 1 | -.065 | .212* | -.077 |
| | Sig. (2-tailed) | .024 | .075 | .096 | .192 | .621 | .008 | .837 | | .538 | .043 | .467 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Massmedia | Pearson Correlation | .001 | .339** | -.027 | -.109 | .319** | .060 | -.022 | -.065 | 1 | .074 | -.220* |
| | Sig. (2-tailed) | .989 | .001 | .798 | .301 | .002 | .569 | .834 | .538 | | .481 | .035 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Income | Pearson Correlation | .014 | .104 | -.035 | .722** | .097 | -.122 | -.159 | .212* | .074 | 1 | .199 |
| | Sig. (2-tailed) | .896 | .326 | .744 | .000 | .356 | .245 | .130 | .043 | .481 | | .057 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| CIPC | Pearson Correlation | -.351** | .275** | -.259* | .177 | .209* | .176 | -.286** | -.077 | -.220* | .199 | 1 |
| | Sig. (2-tailed) | .001 | .008 | .012 | .092 | .045 | .093 | .006 | .467 | .035 | .057 | |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

# Correlations

| | | Age | Education | family | Farm | Income | Participation | Innovativeness | Attitude | Problem | Massmedia | Knowledge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | -.176 | .565** | .083 | .014 | -.166 | -.046 | .362** | .235* | .001 | -.300** |
| | Sig. (2-tailed) | | .094 | .000 | .434 | .896 | .114 | .665 | .000 | .024 | .989 | .004 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Education | Pearson Correlation | -.176 | 1 | -.231* | .075 | .104 | .863** | .456** | -.182 | -.186 | .339** | .311** |
| | Sig. (2-tailed) | .094 | | .027 | .480 | .326 | .000 | .000 | .082 | .075 | .001 | .003 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| family | Pearson Correlation | .565** | -.231* | 1 | .035 | -.035 | -.182 | -.081 | .113 | .175 | -.027 | -.214* |
| | Sig. (2-tailed) | .000 | .027 | | .739 | .744 | .083 | .442 | .282 | .096 | .798 | .041 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Farm | Pearson Correlation | .083 | .075 | .035 | 1 | .722** | .098 | -.004 | -.082 | .137 | -.109 | .098 |
| | Sig. (2-tailed) | .434 | .480 | .739 | | .000 | .351 | .967 | .439 | .192 | .301 | .351 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Income | Pearson Correlation | .014 | .104 | -.035 | .722** | 1 | .097 | -.122 | -.159 | .212* | .074 | .160 |
| | Sig. (2-tailed) | .896 | .326 | .744 | .000 | | .356 | .245 | .130 | .043 | .481 | .128 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Participation | Pearson Correlation | -.166 | .863** | -.182 | .098 | .097 | 1 | .471** | -.196 | -.052 | .319** | .246* |
| | Sig. (2-tailed) | .114 | .000 | .083 | .351 | .356 | | .000 | .061 | .621 | .002 | .018 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Innovativeness | Pearson Correlation | -.046 | .456** | -.081 | -.004 | -.122 | .471** | 1 | -.190 | -.274** | .060 | .261* |
| | Sig. (2-tailed) | .665 | .000 | .442 | .967 | .245 | .000 | | .069 | .008 | .569 | .012 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Attitude | Pearson Correlation | .362** | -.182 | .113 | -.082 | -.159 | -.196 | -.190 | 1 | .022 | -.022 | -.208* |
| | Sig. (2-tailed) | .000 | .082 | .282 | .439 | .130 | .061 | .069 | | .837 | .834 | .046 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Problem | Pearson Correlation | .235* | -.186 | .175 | .137 | .212* | -.052 | -.274** | .022 | 1 | -.065 | -.121 |
| | Sig. (2-tailed) | .024 | .075 | .096 | .192 | .043 | .621 | .008 | .837 | | .538 | .251 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Massmedia | Pearson Correlation | .001 | .339** | -.027 | -.109 | .074 | .319** | .060 | -.022 | -.065 | 1 | -.140 |
| | Sig. (2-tailed) | .989 | .001 | .798 | .301 | .481 | .002 | .569 | .834 | .538 | | .183 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Knowledge | Pearson Correlation | -.300** | .311** | -.214* | .098 | .160 | .246* | .261* | -.208* | -.121 | -.140 | 1 |
| | Sig. (2-tailed) | .004 | .003 | .041 | .351 | .128 | .018 | .012 | .046 | .251 | .183 | |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

# Correlations

| | | Age | Education | family | Farm | Income | Participation | Innovativeness | Attitude | Problem | Massmedia | Persuation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | -.176 | .565** | .083 | .014 | -.166 | -.046 | .362** | .235* | .001 | -.367** |
| | Sig. (2-tailed) | | .094 | .000 | .434 | .896 | .114 | .665 | .000 | .024 | .989 | .000 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Education | Pearson Correlation | -.176 | 1 | -.231* | .075 | .104 | .863** | .456** | -.182 | -.186 | .339** | .271** |
| | Sig. (2-tailed) | .094 | | .027 | .480 | .326 | .000 | .000 | .082 | .075 | .001 | .009 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| family | Pearson Correlation | .565** | -.231* | 1 | .035 | -.035 | -.182 | -.081 | .113 | .175 | -.027 | -.266** |
| | Sig. (2-tailed) | .000 | .027 | | .739 | .744 | .083 | .442 | .282 | .096 | .798 | .010 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Farm | Pearson Correlation | .083 | .075 | .035 | 1 | .722** | .098 | -.004 | -.082 | .137 | -.109 | .226* |
| | Sig. (2-tailed) | .434 | .480 | .739 | | .000 | .351 | .967 | .439 | .192 | .301 | .030 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Income | Pearson Correlation | .014 | .104 | -.035 | .722** | 1 | .097 | -.122 | -.159 | .212* | .074 | .232* |
| | Sig. (2-tailed) | .896 | .326 | .744 | .000 | | .356 | .245 | .130 | .043 | .481 | .026 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Participation | Pearson Correlation | -.166 | .863** | -.182 | .098 | .097 | 1 | .471** | -.196 | -.052 | .319** | .232* |
| | Sig. (2-tailed) | .114 | .000 | .083 | .351 | .356 | | .000 | .061 | .621 | .002 | .026 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Innovativeness | Pearson Correlation | -.046 | .456** | -.081 | -.004 | -.122 | .471** | 1 | -.190 | -.274** | .060 | .203 |
| | Sig. (2-tailed) | .665 | .000 | .442 | .967 | .245 | .000 | | .069 | .008 | .569 | .053 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Attitude | Pearson Correlation | .362** | -.182 | .113 | -.082 | -.159 | -.196 | -.190 | 1 | .022 | -.022 | -.334** |
| | Sig. (2-tailed) | .000 | .082 | .282 | .439 | .130 | .061 | .069 | | .837 | .834 | .001 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Problem | Pearson Correlation | .235* | -.186 | .175 | .137 | .212* | -.052 | -.274** | .022 | 1 | -.065 | -.055 |
| | Sig. (2-tailed) | .024 | .075 | .096 | .192 | .043 | .621 | .008 | .837 | | .538 | .604 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Massmedia | Pearson Correlation | .001 | .339** | -.027 | -.109 | .074 | .319** | .060 | -.022 | -.065 | 1 | -.187 |
| | Sig. (2-tailed) | .989 | .001 | .798 | .301 | .481 | .002 | .569 | .834 | .538 | | .074 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Persuation | Pearson Correlation | -.367** | .271** | -.266* | .226* | .232* | .232* | .203 | -.334** | -.055 | -.187 | 1 |
| | Sig. (2-tailed) | .000 | .009 | .010 | .030 | .026 | .026 | .053 | .001 | .604 | .074 | |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

# Correlations

| | | Age | Education | family | Farm | Income | Participation | Innovativeness | Attitude | Problem | Massmedia | Decision |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | -.176 | .565** | .083 | .014 | -.166 | -.046 | .362** | .235* | .001 | -.280** |
| | Sig. (2-tailed) | | .094 | .000 | .434 | .896 | .114 | .665 | .000 | .024 | .989 | .007 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Education | Pearson Correlation | -.176 | 1 | -.231* | .075 | .104 | .863** | .456** | -.182 | -.186 | .339** | .141 |
| | Sig. (2-tailed) | .094 | | .027 | .480 | .326 | .000 | .000 | .082 | .075 | .001 | .181 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| family | Pearson Correlation | .565** | -.231* | 1 | .035 | -.035 | -.182 | -.081 | .113 | .175 | -.027 | -.209* |
| | Sig. (2-tailed) | .000 | .027 | | .739 | .744 | .083 | .442 | .282 | .096 | .798 | .046 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Farm | Pearson Correlation | .083 | .075 | .035 | 1 | .722** | .098 | -.004 | -.082 | .137 | -.109 | .165 |
| | Sig. (2-tailed) | .434 | .480 | .739 | | .000 | .351 | .967 | .439 | .192 | .301 | .116 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Income | Pearson Correlation | .014 | .104 | -.035 | .722** | 1 | .097 | -.122 | -.159 | .212* | .074 | .150 |
| | Sig. (2-tailed) | .896 | .326 | .744 | .000 | | .356 | .245 | .130 | .043 | .481 | .154 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Participation | Pearson Correlation | -.166 | .863** | -.182 | .098 | .097 | 1 | .471** | -.196 | -.052 | .319** | .077 |
| | Sig. (2-tailed) | .114 | .000 | .083 | .351 | .356 | | .000 | .061 | .621 | .002 | .466 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Innovativeness | Pearson Correlation | -.046 | .456** | -.081 | -.004 | -.122 | .471** | 1 | -.190 | -.274** | .060 | .004 |
| | Sig. (2-tailed) | .665 | .000 | .442 | .967 | .245 | .000 | | .069 | .008 | .569 | .972 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Attitude | Pearson Correlation | .362** | -.182 | .113 | -.082 | -.159 | -.196 | -.190 | 1 | .022 | -.022 | -.329** |
| | Sig. (2-tailed) | .000 | .082 | .282 | .439 | .130 | .061 | .069 | | .837 | .834 | .001 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Problem | Pearson Correlation | .235* | -.186 | .175 | .137 | .212* | -.052 | -.274** | .022 | 1 | -.065 | -.158 |
| | Sig. (2-tailed) | .024 | .075 | .096 | .192 | .043 | .621 | .008 | .837 | | .538 | .132 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Massmedia | Pearson Correlation | .001 | .339** | -.027 | -.109 | .074 | .319** | .060 | -.022 | -.065 | 1 | -.196 |
| | Sig. (2-tailed) | .989 | .001 | .798 | .301 | .481 | .002 | .569 | .834 | .538 | | .061 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Decision | Pearson Correlation | -.280** | .141 | -.209* | .165 | .150 | .077 | .004 | -.329** | -.158 | -.196 | 1 |
| | Sig. (2-tailed) | .007 | .181 | .046 | .116 | .154 | .466 | .972 | .001 | .132 | .061 | |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

## Correlations

| | | Age | Education | family | Farm | Income | Participation | Innovativeness | Attitude | Problem | Massmedia | Implementation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | -.176 | .565** | .083 | .014 | -.166 | -.046 | .362** | .235* | .001 | -.261* |
| | Sig. (2-tailed) | | .094 | .000 | .434 | .896 | .114 | .665 | .000 | .024 | .989 | .012 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Education | Pearson Correlation | -.176 | 1 | -.231* | .075 | .104 | .863** | .456** | -.182 | -.186 | .339** | .165 |
| | Sig. (2-tailed) | .094 | | .027 | .480 | .326 | .000 | .000 | .082 | .075 | .001 | .117 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| family | Pearson Correlation | .565** | -.231* | 1 | .035 | -.035 | -.182 | -.081 | .113 | .175 | -.027 | -.253* |
| | Sig. (2-tailed) | .000 | .027 | | .739 | .744 | .083 | .442 | .282 | .096 | .798 | .015 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Farm | Pearson Correlation | .083 | .075 | .035 | 1 | .722** | .098 | -.004 | -.082 | .137 | -.109 | .088 |
| | Sig. (2-tailed) | .434 | .480 | .739 | | .000 | .351 | .967 | .439 | .192 | .301 | .402 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Income | Pearson Correlation | .014 | .104 | -.035 | .722** | 1 | .097 | -.122 | -.159 | .212* | .074 | .136 |
| | Sig. (2-tailed) | .896 | .326 | .744 | .000 | | .356 | .245 | .130 | .043 | .481 | .198 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Participation | Pearson Correlation | -.166 | .863** | -.182 | .098 | .097 | 1 | .471** | -.196 | -.052 | .319** | .183 |
| | Sig. (2-tailed) | .114 | .000 | .083 | .351 | .356 | | .000 | .061 | .621 | .002 | .081 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Innovativeness | Pearson Correlation | -.046 | .456** | -.081 | -.004 | -.122 | .471** | 1 | -.190 | -.274** | .060 | -.091 |
| | Sig. (2-tailed) | .665 | .000 | .442 | .967 | .245 | .000 | | .069 | .008 | .569 | .389 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Attitude | Pearson Correlation | .362** | -.182 | .113 | -.082 | -.159 | -.196 | -.190 | 1 | .022 | -.022 | -.193 |
| | Sig. (2-tailed) | .000 | .082 | .282 | .439 | .130 | .061 | .069 | | .837 | .834 | .066 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Problem | Pearson Correlation | .235* | -.186 | .175 | .137 | .212* | -.052 | -.274** | .022 | 1 | -.065 | .006 |
| | Sig. (2-tailed) | .024 | .075 | .096 | .192 | .043 | .621 | .008 | .837 | | .538 | .954 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Massmedia | Pearson Correlation | .001 | .339** | -.027 | -.109 | .074 | .319** | .060 | -.022 | -.065 | 1 | -.115 |
| | Sig. (2-tailed) | .989 | .001 | .798 | .301 | .481 | .002 | .569 | .834 | .538 | | .275 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Implementation | Pearson Correlation | -.261* | .165 | -.253* | .088 | .136 | .183 | -.091 | -.193 | .006 | -.115 | 1 |
| | Sig. (2-tailed) | .012 | .117 | .015 | .402 | .198 | .081 | .389 | .066 | .954 | .275 | |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

# Correlations

| | | Age | Education | family | Farm | Income | Participation | Innovativeness | Attitude | Problem | Massmedia | Conformation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Pearson Correlation | 1 | -.176 | .565** | .083 | .014 | -.166 | -.046 | .362** | .235* | .001 | -.179 |
| | Sig. (2-tailed) | | .094 | .000 | .434 | .896 | .114 | .665 | .000 | .024 | .989 | .088 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Education | Pearson Correlation | -.176 | 1 | -.231* | .075 | .104 | .863** | .456** | -.182 | -.186 | .339** | .116 |
| | Sig. (2-tailed) | .094 | | .027 | .480 | .326 | .000 | .000 | .082 | .075 | .001 | .269 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| family | Pearson Correlation | .565** | -.231* | 1 | .035 | -.035 | -.182 | -.081 | .113 | .175 | -.027 | -.129 |
| | Sig. (2-tailed) | .000 | .027 | | .739 | .744 | .083 | .442 | .282 | .096 | .798 | .219 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Farm | Pearson Correlation | .083 | .075 | .035 | 1 | .722** | .098 | -.004 | -.082 | .137 | -.109 | .126 |
| | Sig. (2-tailed) | .434 | .480 | .739 | | .000 | .351 | .967 | .439 | .192 | .301 | .232 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Income | Pearson Correlation | .014 | .104 | -.035 | .722** | 1 | .097 | -.122 | -.159 | .212* | .074 | .100 |
| | Sig. (2-tailed) | .896 | .326 | .744 | .000 | | .356 | .245 | .130 | .043 | .481 | .345 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Participation | Pearson Correlation | -.166 | .863** | -.182 | .098 | .097 | 1 | .471** | -.196 | -.052 | .319** | .031 |
| | Sig. (2-tailed) | .114 | .000 | .083 | .351 | .356 | | .000 | .061 | .621 | .002 | .772 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Innovativeness | Pearson Correlation | -.046 | .456** | -.081 | -.004 | -.122 | .471** | 1 | -.190 | -.274** | .060 | .006 |
| | Sig. (2-tailed) | .665 | .000 | .442 | .967 | .245 | .000 | | .069 | .008 | .569 | .955 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Attitude | Pearson Correlation | .362** | -.182 | .113 | -.082 | -.159 | -.196 | -.190 | 1 | .022 | -.022 | -.156 |
| | Sig. (2-tailed) | .000 | .082 | .282 | .439 | .130 | .061 | .069 | | .837 | .834 | .139 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Problem | Pearson Correlation | .235* | -.186 | .175 | .137 | .212* | -.052 | -.274** | .022 | 1 | -.065 | .076 |
| | Sig. (2-tailed) | .024 | .075 | .096 | .192 | .043 | .621 | .008 | .837 | | .538 | .471 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Massmedia | Pearson Correlation | .001 | .339** | -.027 | -.109 | .074 | .319** | .060 | -.022 | -.065 | 1 | -.236* |
| | Sig. (2-tailed) | .989 | .001 | .798 | .301 | .481 | .002 | .569 | .834 | .538 | | .024 |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Conformation | Pearson Correlation | -.179 | .116 | -.129 | .126 | .100 | .031 | .006 | -.156 | .076 | -.236* | 1 |
| | Sig. (2-tailed) | .088 | .269 | .219 | .232 | .345 | .772 | .955 | .139 | .471 | .024 | |
| | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).