EFFECTIVENESS OF MASS MEDIA IN ADOPTION OF RICE PRODUCTION TECHNOLOGIES

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This is to certify that thesis entitled, "EFFECTIVENESS OF MASS MEDIA IN ADOPTION OF RICE PRODUCTION TECHNOLOGIES" submitted to the Faculty of Agriculture, Sher-e-Bangla AgricuJturaJ 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 Mr. Ranjan Roy, Registration No. 00465 under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

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

Dated:
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To

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PARENTS

EFFECTIVENESS OF MASS MEDIA IN ADOPTION OF RICE PRODUCTION TECHNOLOGES

ABSTRACT

The main objectives of this study were to determine the extent of effectiveness of mass media and explore the relationship between the selected characteristics of the farmers and their effectiveness of mass media in adoption of rice production technology. The selected characteristics were age, education, family size, farm size, annual family income, wealth ownership, organizational participation, innovativeness, attitude towards modern technology and agricultural knowledge. Data were collected from two villages of Pirganj Upazila under Thakurgaon district, through using a structured personal interview schedule. For proportionate representation from each village 20% (110) sample were drawn following stratified sampling method Appropriate scales were developed in order to measure the concerned variables A statistical software package named SPSS was used to analyze the data and Karl Pearson Correlation Co-efficient were used to test the relationship between the independent and dependent variables.

The findings revealed that 48.18 % respondents belonged to medium effective category while 37.27% highly effective category and 14.55% low effective category Thus, about 85% respondents opined that mass media had medium to highly effective in adoption of rice production technology in this study area The statistical analysis also revealed that farmers' education, wealth ownership, organizational participation, innovativeness and agricultural knowledge had positive and highly significant relationship with their effectiveness of mass media in adoption of rice production technology. However, age, farm size, family size, annual family income and attitude towards modern technology of the farmers had no significant relationship with their effectiveness of mass media in adoption of rice production technology by the farmers in this study area.

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ACRONYMS AND ABBREVIATIO S

BARJ   Bangladesh Agricultural Research Institute

BINA   Bangladesh Institute of Nuclear Agriculture

SAU   Sher-e-Bangla Agricultural University

BAU   Bangladesh AgriculturaJ University

BBS   Bangladesh Bureau of Statistics

BRRI   Bangladesh Rice Research Institute

IRRI   International Rice Research Institute

DAE   Department of Agricultural Extension

GDP   Gross Domestic Product

BRAC   Bangladesh Rural Advancement Committee

USG   Urea Super Granular

SRI   System of Rice Intensification

FAQ   Food and Agricultural Organization

NGO   Non-Government Organization

GO   Government Organization

TV   Television

AEO   Agricultural Extension Officer

SAAO   Sub-Assistant Agricultural Officer

INTRODUCTION

1.1 General Background

Bangladesh is one of the least developing countries of the world with an area of 147570 square kilometer approximately 140.25 million people with density of populations 941 per square kilometer (BBS, 2005). It is Asia's 6th and world's 9th most populous country. The per capita income is about $ 470 and its people have a life expectancy of 61 years (BBS, 2005). Agriculture is the backbone of this country. The economy of the country is predominantly agrarian and agricultural sector provide 21.71 % percent of the Gross Domestic Product (GDP), (Ahmed, 2000) and 62 percent of the employment opportunity comes from agriculture (BBS, 2006). So, agriculture plays a vital role in employment, poverty alleviation, food security, standard of living and increase of earnings

Before liberation food deficit was a common phenomenon in Bangladesh After liberation different research organizations namely BRRI, BINA, BAU, SAU, IRRI and private organizations developed various production technologies of rice like Gutee Urea (USG), Dram Seeder, SRJ (System of Rice Intensification), Clonal tiller, Direct Seedling, Nursery Seedling etc. As a result the total rice production increased. In case of food grains 281.2 lakh ton is required, but the annual production was 265.95 lakh tons in 2003-2004 (BBS, 2005). In the year 2004-05 rice was cultivated in 76.27% of total cultivable land (Year Book of Agricultural Statistics of Bangladesh 2004) The area covered 11.11%, 52.4b% and 36.43% Aus, Aman and Buro respectively (BBS, 2004) The total rice production of that year was 25.18 milion M. tons (Year Book of Agricultural Statistics of Bangladesh 2005).

At present forty percent areas is covered by low yielding varieties (Satter, 2003). Modern varieties developed by National and International Research Institutes do not suit well in all production environment which is the most important reason for the non-adoption of modern varieties (Chowdhury, 1999). Modem varieties with more production, potential and high adaptability to the technologies progress is a necessary ingredient of development (Van veen *el al.*, 1998) Bangladesh grows only about 3.55 tons of rice per hectare though its soil is the most fertile one of the world (FAO, 2005). On the other hand South Korea, Japan, North Korea, USA. Soviet Russia and Pakistan produce 6.2, 5.8, 5.4, 5.1, 3 8 & 2.4 tons respectively (F AO, 2005). Therefore, it has the scope to increase per hectare yield.

Agricultural production can only be increased if appropriate technologies are used by the farmers who are the primary unit of adoption of improved practices. Diffusion of technological knowledge on modern agriculture among the rural people demands effective communication system. This suggests that the flow of information should be as fast as possible and also should be understandable, well interpreted, accepted and liked by users. Transfer or technologies means the movement or information technologies from a research system through extension system to the client (Kashem and Halim, 1991).

The Department of Agricultural Extension (DAE) and some other Government and Non-government Organizations are working in the field in transferring information/ technologies from a research system (source or technologies) through an extension system (interpreter and dissemination of technologies) to the client system (users of technologies). Extension agents follow a number of extension methods such as Result or Method demonstration, Farm publications (leaflets, bulletins poster etc.) Agricultural Radio and Television programme, Progressive and Contact farmers, Local and Opinion leader, Field tour, Field days etc

Advancement of technologies and communication process belongs to the same phenomenon and goes hand in hand. Again technologies must reach to the people through right media within the quickest possible time. All communication media would not be appropriate to serve the people. The mass media channels can be used for accelerating dissemination of information and regarding various aspects of agricultural and rural development. Previous research results like Nuruzzaman (2003) showed that television had been used more by the farmers in receiving agricultural information than other media like radio, folk song, agricultural fair, poster, newspaper and leaflet or bulletin. Anisuzzaman (2003) showed that among the mass media radio play a vital role in communicating information. The next important media were progressive farmers, TV, Result demonstration for adoption of all the practices of rice production technologies.

Mass media channels are television, radio, video and film, magazine, newspaper, leaflet, booklet, publication, poster etc. Nowadays, most effective tool to bridge the geographical distance between the message senders and receivers. Extensive use of electronic media in support of agricultural extension, diffusion of information technologies, social reforms, education and health and so on are seen all over the world.

In most of the cases the effectiveness of extension educational programmes depends to a large extent on the proper selection and use of communication media. Mass media shows better result to create awareness and increase knowledge and increase adoption with the audience of low knowledge, attitude and practice level (Adhikarya, 1994). Bangladesh, although had its initial success, could develop fully and failed to make communication linkage as desired (Haque and Gupta, 1996).

In 1994 Schramm in his study, entitled, 'Mass media and national development' points out why radio and television should be particularly useful in rural development programme. According to him, it covers great distances and leaps all kinds of natural barriers; it is swift in reaching a listener. It is the cheapest of the major media in production and reception can also be inexpensive. In the USA use of radio as source of extension information bas steadily increased, in 1950 the extension personnel made 143,000 broadcasts, in 1962 this figure had reached 413,755 (Hatch and Sanders, 1966).

Mass media provides necessary information for the farmers to help them change their way of cultivation from traditional to modern one. Increase of per unit yield of any crop cannot be attained without a sound effective communication system. Mass media namely Radio, Television, Magazine, Newspaper, Leaflet, Booklet, Publication, Poster play an important role especially in the awareness and interest stages (Kashem, 1995). Message through mass media can motivate, stimulate, induce and change their basic attitudes of the people at all cultural and age levels.

Now-a-days, in Bangladesh, the various mass media are broadcasting non-formal educational development programmes such as agriculture, sustainable agriculture forestry, environment, farm management, public health, adult learning, family planning etc. Moreover it provides tremendous educational value to our vast majority of illiterate farmers. Through such mass media changes in the behavior of the farmers, their knowledge in agriculture can be increased to a large extent and modernize their practices into a practical way.

In view of the importance and effect of the mass media in Bangladesh agricultural development field and as no research work has so far been undertaken in this aspects, the researcher undertook a study entitled 'Effectiveness of Mass Media in Adoption of Rice Production Technologies'.

1.2 Statement of the Problems

The success of any technologies depend on its dissemination among the potential users, which ultimately measured by the level of adoption of that technologies. It is anticipated that certain sustainable development can take place in Bangladesh if the relevant technologies can be transferred through right channels at the right time to the right people.

In view of the foregoing discussion, the framework of this study stems from "mass communication media" which is of great concern to national policy makers. By mass media, any messages can be diffused within a very short time. Mass media involves radio, television, magazine, newspaper, leaflet, booklet, publication, poster etc. From research point of view it is not possible to involve all the items in a single study. This research is confined few of them namely radio, television, newspaper, poster, field day and opinion leader. The purpose of the study is to ascertain the mode, nature and extent of effectiveness of mass media in the adoption of rice production technologies. The study is also aimed to have an understanding of the selected characteristics of the farmers and their relationship with the mass media by the farmers in the adoption of rice production technologies. The purpose of the study was to have answer to the following questions-

1. Which characteristics of rice farmers are related to use mass media?

2. What relationship exists between the selected characteristics of the farmers and their effectiveness of mass media in adoption of rice production technologies?

1.3 Objectives of the Study

The following objectives arc formulated m order to give proper direction to the research work-

1. To determine and describe some selected characteristics of the farmers.

The selected characteristics are -

      a) Age

      b) Education

      c) Family size

      d) Farm Size

      e) Annual family income

      f) Wealth ownership

      g) Organizational participation

      h) Innovativeness

      i) Attitudes towards modern agricultural technologies

      j) Agricultural knowledge

2. To determine the extent of effectiveness of the mass media in adoption of rice production technologies.

3. To explore the relationship between the selected characteristics of the farmers and their efTectivencss of mass media in adoption of rice production technologies

1.4 Scope and Limitations of the Study

The respondents of the study were exclusively selected from Pirganj Upazila of Thakurgaon 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 mass communication planners, extension personnel and field workers for successful dissemination of rice production 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 Pirganj Upazila ofThakurgaon District.

ii) Population of the study was limited to the mass media users

iii) Farmers use mass media in receiving information on difTcrent aspects such as health, nutrition, family planning, mass education, agriculture, religious affairs etc. but this study was confined only to mass media which were used in the adoption or rice production technologies.

iv) Farmers of Pirganj Upazila have many characteristics but in this study only ten characteristics were selected for investigation.

v) Data furnished by the respondent farmers were considered to be valid and reliable.

vi) Facts and figures collected by the investigator considering prevailing situation.

vii) Reluctance of the farmers to provide information was overcame by establishing rapport.

1.5 Assumptions of the Study

An assumption is the supposition that an apparent fact or principle is true in the light of the available evidence (Goode and Hatt, 1945). That means the assumption is taken as a fact or belief to be true. The following assumptions were made in conducting the study:

i. The respondents included the sample were capable to satisfy the queries made by the researcher.

ii. Data provided by the respondents were reliable.

iii. As the respondent farmers were the representative sample their views and opinion were also thought to be representative.

iv. As the study area and the respondents were known to the researcher the respondents' fumishcd unbiased information with no hesitation.

v. The mass media included in the study were known to the respondents.

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 technologies.

1.6 Statements of Hypotheses

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 hypotheses (Ho).The following null hypotheses were formulated to explore the relationships between the selected characteristics of the farmers and the effectiveness of mass media.

1.6.1 Null Hypothesis

For testing the hypotheses statistically, the following null hypotheses were formulated-There is no relationship between Age, Education, Family size, Fann Size, Annual family income, Wealth ownership, Organization participation, lnnovativeness, Attitudes towards modern agricultural technologies and Agricultural knowledge of farmers and effectiveness of mass media in relation to adopt rice production technologies.

1.7 Definition of the Terms

A number of key terms have been used throughout the study are defined below to avoid confusion and misunderstanding.

Mass Media

The mass media are the means of communication or instruments or apparatus through which messages are transmitted towards relatively large, heterogeneous and anonymous audiences within a relatively shorter period of time from the source to the receiver. Mass media included in the study were Radio, Television, Newspaper, Poster, Field day and Opinion leader.

Adoption

According to Rogers (1995) "Adoption is a decision to make full use of an innovation as the best course of action available". 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 lo 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.

Technologies

Technologies are a design of instrumental action that reduces the uncertainty in the cause-effect relationship involved in achieving a desired outcome (Rogers, 1995). In other words, technologies refer to the combination of knowledge, inputs and manage mental practices, which are used together with productive resources to gain desired output (ILEIA, 1991 :3).

Information

Information is something that reduces uncertainty (Thomson's, 1967). The basic requirement of adapting and adjusting one-self to environment is information. Agricultural information refers to the information which is presented on the various aspects of agricultural such as improved varieties of crops, use of fertilizers, irrigation, pesticide, harvesting process etc.

Newspaper

If refers to a bunch of loose printed papers properly folded. These contain news, views, advertisements, educational messages and agricultural messages, published daily or weekly basis generally from the capital city. Some regional dailies and weeklies are also published throughout the country

Farm publications

It refers to the printed materials for disseminating agricultural information among the farmers. In this study farm publication includes booklets, leaflets, folders, bulletin etc. those are produced by various GOs and NGOs to disseminate agricultural information among farmers.

Poster

Poster is a display type of visual aid which creates awareness among people about new idea, innovation or technologies. It gives the passerby a brief but impressive message. Posters are both an informal medium and a visual aid to education. A good poster involves two things (i) a potent idea and (ii) a clear presentation.

Leaflet

A leaflet is usually a single sheet of printed matter sometimes folded The leaflet usually treats one job or one small problem. The best leaflet gives accurate or specific instructions on how to do a job (Supe, 1997)

Bulletin

Bulletin is a printed bound booklet with a number of pages containing complete information in respect to a particular topic.

Circular Letter

According to Hassanullah (1985) "Circular letter is written on specific issues and sent to the particular audiences to make aware them about a technologies or an imminent outbreak". Suppose, there is a probability of Rice Hispa infestation in transplanted Aman fields in a locality and the extension agents of the concerned area want to make aware of farmers about it. In this case they can write and send circular letters.

Folder

It is a single printed sheet of paper of big size, folded once or twice and give essential information relating to a particular topic.

Opinion leadership as mass media

Rogers defined opinion leadership as "the degree to which an individuals is able to influence others individuals' attitude or overt behavior informally in a desired way with relative frequency". In Bangladesh villages, Rahim (1961, 1965; in Rogers, 1983) found that mass media channels were seldom mentioned as channels about agricultural innovation, where as cosmopolite interpersonal channels were very important and in some ways seemed to perform a similar role to that played by mass media channels in many developing countries, like Bangladesh and Colombia where mass media channels arc not available the adopters heavily use interpersonal channels at knowledge stage. In case of opinion leadership this was proved by two step flow model. The first step from sources of mass media channels to opinion leader is mainly a transfer of information. Where as. the two step flow of hypothesis has since been tested in a variety of communicator situations and found generally to provide a suitable conceptual framework for examining the flow of mass media.

Age

Age of a farmer refers to the period of time from his birth to the time of investigation.

Education

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

Family size

It refers to the total number of members including the respondent himself, his wife, children and other permanent dependents, who lived and ate together as a family unit.

Farm size

It refers to the total area on which a farmer's family carries farming operation. The area was estimated in terms of full benefit to the farmer's family

Annual family income

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

Organizational participation

Organizational participation of an individual refers to his direct contact with various organizations within a specific period of time. An individual could take part in various activities of organization as ordinary member, executive committee member or officer president, secretary etc.

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 or a respondent was measured on the basis of adoption of ten improved agricultural practices by the respondents.

Attitude towards modern agricultural technologies

Attitude is more or less permanent feeling, thoughts and predisposition people have about certain aspects of their environment (Hawkins, Dunn and Cary, 1982). The attitude towards agricultural technologies means farmer's believes, feelings and action towards an improved farm practices in respects of its adoption in real situation

Agricultural Knowledge

It refers to the knowledge gained by the farmers on different aspects of agriculture from different sources and also through their experiences of farming. The farmers were asked fifteen questions related to farming and according to their answer they were marked. In fact, it is the basic understanding of the farmers in different aspects of agricultural subject matters.

Wealth Ownership

Wealth ownership means respondents (i) total area of land (ii) Agricultural equipments and machinery (iii) Household furniture and goods. All items are noted down then it was converted into cash value according to the prevailing market price.

Effectiveness of Mass Media

Effectiveness of mass media means the outcome of the extent of use of mass media. Mass media is powerful educational means that stimulate, motivate, and educate people of all walks of life. The effectiveness of mass media includes how frequent they are used and how effective they are used in teaching, stimulating and motivating.

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

Occurs 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

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

(iii) Decision stage

Occurs 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

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

(v) Confirmation stage

Occurs 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)

REVIEW OF LITERATURE

Review of literature presented in this chapter is the re'iews of researches conducted along with the line or the major focus of this study The aim of this study was to have an understanding or effectiveness or mass media in adoption of rice production technologies by the farmers and their relationships with the selected individual characteristics. No systematic study had so far been conducted on this aspect in Bangladesh, only a few researchers have worked on communication media However, available literature was reviewed in this chapter to search out related works conducted in home and abroad This chapter is divided into three sections, the first section deals with the general findings on effectiveness of mass media by the farmers and second section is devoted to a discussion on the findings or research studies exploring relationships between the selected characteristics or the farmers and effectiveness Of mass media and related matters The third section deals ,,ith the conceptual frame work of the study.

2.1. Section I: General findings on effectiveness of mass media by the farmers.

Hossain (1971) observed that farmers generally used more than one medium for receiving information about any improved farm practice. Mass media contact and agricultural agency contact were the major sources or information at awareness stage of all the practices recommended for adoption in the study area

Librero (1974) found that farmers had obtained information from extension worker, radio, other farmers, newspaper, pamphlets, neighbors, television and magazines III the proportions of 95, 84, 60, 12, 10, 9, 7 and 2 percent respectively

Ismail (1979) in a study in Malaysia ascertained his respondents' contact with radio, television, newspapers and magazine The percentages of respondents were 98, 92, 77 and 48 respectively Of the listeners and watchers 95 and 59 percent used their own radio and television sets respectively.

Orojobi (1980) found in a study that the private sources of agricultural information of Nigerian farmers were friends, other farmers, local leaders, traditional meetings, extension agents, radio, demonstration, television agricultural shows and printed materials.

Jagne and Patel (1981) found in a study that most of the farmers used radio in receiving information on cotton cultivation in north Central Texas

Reddy (1982) opined that with the help of communication media like radio and television the research findings can be conveyed to the farmers quickly and in a way that makes intelligibly eligible to them

Nataraju and Channcgowda (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.

Panya (1985) found in a study in Thailand that concerning knowledge gained from mass media that were applicable to their work Farmers thought that proportion of knowledge provided by television were 83.3%, radio 78% and newspaper 77%. They watched the programmes on channel Seven (62%) and read Thai Rath (84%). They also mentioned that knowledge gained from radio, television and newspaper about insecticide, pesticide. They learned how to use fertilizer and learned of animal husbandry respectively.

Sinha (1985) in a study on mass media and rural development found that television has a very positive role to play in village development, but it is essential to support with appropriate development infrastructure and trained up root level officer.

Mekabutra (1985) conducted a study in Thailand and reported that among the mass media that offered more knowledge in agriculture was radio, followed by television and newspaper respectively. Considering knowledge gained from mass media that were applicable to their work, farmers opined that television provided about 83 5%, radio 78% and newspaper 77%

Samanta ('1986) reported that mass communication channels involved different mass media such as radio, TV, magazine, newspapers etc. which enable a source of one or a few individuals to reach a large audience rapidly. These media are effective in the developed countries, while in the developing world their effectiveness is limited due to many factors. The modern media of communication like radio, TV, magazines, newspapers etc. are available mainly to urban people and elite society and the coverage of rural programme by mass media are also inadequate.

Ania (1986) found in a study that extension officers (46%) were the most important information source; personal radio (29%) and television (27%) are considered as the most frequently used mass media by farmers for technological information.

Asian Developed Bank (1987) found that regarding current and potentials role of television and video presentation in providing required information, television was ranked first as the most important source of agriculturaJ information in South Asia.

Van-Den-Ben and Hawkins (1988) reported that in industrialized countries people spend more time with television and radio than printed world. Radio is the most important mass medium for farmers lo less industrialized countries. The urban middle class in less industrialized countries now also spend considerable time watching television but *it* is yet to be important medium for rural areas of these countries.

Chidanandappa and Yeerbhadraiah (1988) examined different mass media sources used by extension personnel and pro rata that extension personnel made use of the package of practices like booklets, extension folders, radio, newspapers and farm magazine to a large extent as mass media of information.

Reinser and Hays (1989) reported that the agricultural press is a vital link m transferring information to US farmers.

Dinampo (1989) conducted a study in Philippines to determine communication need and preferences. He observed that farmers were found lo prefer an interpersonal media (extension agents) rather than mass media. Among mass media, first preference was radio followed by printed materials and audio visual sources.

Batte, Schnitkey and Jones (1990) conducted a study on cash grain farmers of Ohio. They found that radio broadcast and general farm magazine were the two marketing information sources and were most frequently cited as useful. Highly formalized and marketing speci fie sources such as marketing consultants, news letters and computerized information sources were cited relatively infrequent. Radio and television broadcast were frequently cited as most source of marketing information by older farmers and operators of smal l farmers

De-la- Vega (1990) conducted a study in Philippines and found that in terms of availability if mass communication media channels, radio and TY were the most available A great majority of the respondents listen radio every day and consider it as their main source of news. The communication channels they preferred as credible were radio, interpersonal sources and TY

Hoque (1990) in his paper concluded that mass media can perform a better role in technologies diffusion than other media Therefore, planned efforts to introduce more of mass media strategics that arc proven effective by experiments arc highly recommended

Hussain and Alam (1990) took a study on dissemination of information and training needs for farm housewives in Bangladesh The study was undertaken to know the communication media, training status and training need or farm housewives. For that 500 housewives were interviewed through pre-tested interview schedule by female block supervisors. Analysis of data indicated that 39, 27 and 4 percent housewives received information through agricultural extension workers, radio and television respectively.

Singh and Sahey (1990) found that most of the contact farmers received information from progressive farmers and some or them received from different mass media

Chough (1991) in a study observed that press, radio and television were regarded as important vehicles of information which could help ensure the supply of inputs to those really who need them.

Papa (1991) conducted a study on intensity or extension contact and innovativeness of multiple cropping farmers in Philippines and the study showed that 54 percent of the farmers had high intensity extension contact while only 47 percent had high extent of innovativeness. The extension contact of teaching methodologies frequently preferred by the multiple cropping farmers were farm and home visit. leaflet, television, general meetingand seminar / short course

Mid-term review of the Fifth Malaysia Plan (1986-90) quoted by Aillin-Ton (1991) emphasized on accelerating transfer of technologies to small holders to improve their productivity and efficiency. Technologies transfer could be achieved through publications, newspapers, radio and television networks, interpersonal methods as exemplified programme launched in 1983 by the Ministry of Agriculture which has contributed to increase farmer's communication through printed media The advent of information technologies had benefited Malaysia in the transfer of technologies by reducing costs in terms or time

Wate and Rivera (1991) in their study examined the application of new technologies in agricultural information transfer process and explored future perspectives of new technologies as a force of change in developing countries They found that print media, electronic media, radio, television, satellite computers and mobile audio-visual media were the important sources of spreading information

Ayaz (I 991) in a study in Pakistan found that radio solved the problems, which were inaccessible to other media and that of illiteracy of farmers. Therefore, radio needsto be used more extensively to disseminate agricultural information to farmers.

Kashem and Halim (1991) in a study concluded that interpersonal communication media such as friends, neighbors, seed, fertilizers and pesticides dealers are the most reliable and trustworthy sources of agricultural information to the farmers.

Raj *el al.* (1992) conducted a study at Balasore district among 120 farmers on the use of five most common mass media sources and observed that although a considerable number of farmers have access to mass media, very few regularly use it. Media having useful, timely information and which are educational, interesting and understandable were responsible for their use.

Saianturi(1992) found in a study that radio was the highest rated source of agricultural information followed by television at Talek Kuantan Riau Province in Philippines.

Molinar *el al.* (1994) in their paper concluded that radio would remain the most significant medium in the Pacific for some time because of the geographical nature of the islands. Continued training, radio, video and print are vital if they are to meet the spatial dimension of the communication process.

Khan and Paracha (1994) conducted a study in two villages of Pakistan, one innovative and other non-innovative among the farmers of cotton producing district, and reported that the main channels of communication were mass media and interpersonal communication. The mass media were centrally organized and included radio, television and newspapers.

Galindo (1994) in his study in Mexico on communication media used by farmers revealed that television and radio were the most widely used communication media, and talks, demonstrations training courses were the preferred media for receiving information.

Kabir and Bhattaachargee (1994) conducted a study on the impact of Radio and Television on rural people and found that the responses regarding the usefulness of TV programmes were similar to response regarding the usefulness of radio broadcasts. All of the telecasts were of average benefit to most of the male and female audience. Among the need based telecasts "Apnar Shasthya" seems to be most effective programme for male viewers. About 53% of the male respondents watched this programme. The next important one is "Mati-o-manush". This has a 35.25% audience.

Lyttleton (1994) reported that nearly 80% of Thai land population gets information of HYV/AIDS via mass media. He also depicted that the vital role of mass media is playing in spreading the different information throughout the nation.

Murrel (1995) reported that the revolution in communication (e.g. rise of mass media, computer networks) presents new opportunities to transfer information more effectively and communicate both technologies and knowledge directly to the users, and also to inform supports, policy- makers and the general public.

Westoff and Rodriguez (1995) reported that in Kenya, about 25% of women neither saw nor heard media message. The family planning programme rose to 25% among those who have heard radio message, to 40% among those who were exposed to both radio and print messages and to 50% among those exposed to radio, print and TV message of family planning activity. It was opined that mass media could have an important effect on reproductive behavior

Rahaman (1995) in his paper reported that the rural press can serve the farmers and families in the villages by providing timely information regarding farming, harvesting and market prices of agricultural products.

Teoh (1995) expressed that the mass approach in agricultural extension uses a single or combination of different communication media to a large client group, and are usually organized at the national level and decentralized for implementation al regional, district and Upazila level. They are aimed to create awareness and interest on issues that concern the majority of the problem.

DAE (1995) reported that the media cell has been established within the Department having responsibility of all media issues. The main tasks of the media cell to:
i) coordinates the production and dissemination of technical bulletins
ii) assists Radio Bangladesh and Bangladesh Television in the production of
farm broadcast
iii) create publication formatted for the DAE
iv) assists district and Upazila with their extension publication

Islam (1995) conducted that a study on women's participation in selected agricultural income generating activities and found mass media like radio, television, print materials etc. were some of the media "hich created awareness and interest among the farmers and their wives to accept improved technologies by participating in agricultural income generating activities

DAE (1995) in order to achieve the objectives of the extension programmes consider the following extension methods and strategies:
I) Media campaign including printed media, radio television
ii) Upazila and district fair
iii) Traditional and folk media
iv) Group meeting
v) Farmers training- motivational tour, farm walk, method demonstration, Field days, result demonstration, individual visit etc. printed media commonly used are bulletins, posters, leaflet, circular letters, newspapers and magazines.

Rahaman (1995) concluded that highest 64.65% farmers used individual sources While 22.93% and 12.42% farmers used mass media and group sources for agricultural information

Islam (1996) concluded that the highest proportion of the respondents (44.55%) belonged to medium media exposure category and 38.18% belonged to low exposure and 17.27% belonged to high exposure group. He also found that among 15 media, radio ranked in 6, television 7, fair 8 Agricultural publications 15 and the rank 1 to 5 were for individual media.

Sarker (1996) found that the majority (69%) of the farmers of his study area possessed radio set of their own and used it. The other 31% listened to other farmers' radio, 21% from neighbor set, 5% of the tea stall and 5% of the farmers listened radio sets of friends and relatives The research found that farmers had an easy access to agricultural radio programme. This indicated that information regarding useful agricultural technologies could be made available to the farmers through radio.

Halim and Miah (1996) conducted a study and found that the women of villages with higher socio-economic status used more cosmopolite media information rather than localite media. Among this media village women used radio and television as a vital sources of agricultural information. Radio was very frequently (69.7%) used by all categories of village women while TV was used by less number of women (26.9%)

Khan (1996) conducted a study on the use of information sources by the poor farmers and concluded that 75% of the respondents had medium use of various information sources like local leader, TV and radio for receiving agricultural information

Ullah (1996) found that vegetable growers contacted with the block supervisor (67.70%) which was followed by radio (61.45%), neighbors (43.23%) friend and relatives (43.23%) and krishi katha was used lo the lowest (6.67%) extent The study revealed that individual contact was highly used by the respondents followed by mass media and group sources

Mia *el al.* (1997) observed that 65% of the farmers used individual media while 18% and 17% of the farmers used group and mass media for receiving farm information

Sultana (1997) revealed that majority 92% or the women of the farm had low to medium exposure while only 8% or the farm women had high exposure on various mass media in receiving farming information

Ladedo *el al.* (1997) conducted a study in Nigeria and reported that 72.2% of the respondents owned radio set and about 48.7% farmers were depended on farm radio broadcasts for improved farm practices

Wabhitkar *et al.* (1998) reported that contact with extension agents and mass media exposure were found to be significantly related to adopt high yielding varieties specially in creating awareness

Egbule and Njoku (2001) in their study on mass media for adult education in Nigeria found that mass media have performed poorly in disseminating requisite agricultural information to farmers, although there is a positive correlation between mass media usage and farm yield Farmers' preferred television than other mass media channels

Perianayagam and Arokiasamy (2002) conducted a study in the northern states in India and reported that women's education and exposure to mass media are two important developmental indicators that bear a highly significantly positive relationship between contraception and negative fertility through all regions

Nuruzzaman(2003) conducted a study in Mymensingh district and found that selected mass media like television had been used more by the farmers in receiving agricultural information than other mass media like radio, folk song agricultural fair, poster, newspaper, and leaflet or bulletin

Mazher (2003) in a study in Pakistan reported that Pamphlets, Magazines and newspapers were suitable for dissemination of sugarcane production technologies in central Punjab-Pakistan.

Anisuzzaman (2003) found that radio seems to be a powerful media in the mass contact method. Progressive farmer and contact farmer frequently used communication media. TV, result demonstration and printed materials are also important media communicating agricultural information But the least used media were newspaper and field tour.

Alam (2004) in his study observed that the highest extents of communication media were used by the farmers and found that TV (rank one) and it was followed by local leader (rank two), radio (rank three), result demonstration (rank four) and method demonstration (rank five) in receiving information on winter vegetables cultivation.

Mollah (2006) found that the highest extent of use of communication media by the farmers was found in contact with Sub-Assistant Agricultural Extension Officer was followed by television in relation to rice production technologies

2.2 Section: 2 Relationship between the selected characteristics of the farmers and effectiveness of mass media and related matters

2.2.1 Age

Hossain (1996) observed a significant relationship between age of the TV viewer farmers and their usefulness of television as an agricultural information media.

Sarker (1996) concluded that age of the farmers had no significant relationship with effectiveness of agricultural information disseminated through agricultural radio programme.

Islam (1998) observed that there was no significant relationship between age of the farmers and their opinion on the effectiveness of Mati-O-Manush television program in disseminating agricultural information

Nuruzzaman (2003) found that age of the farmers had negative and significant relationship with their use of mass media in receiving agricultural information

Anisuzzaman (2003) observed that age of the farmers had no significant relationship with their communication media Radio, TV. Newspaper in adoption of improved rice production technologies

Alam (2004) found that age of the farmers had negative and significant relationship with their opinion of the farmers on effectiveness of printed materials in getting farm information.

Islam (2005) found that age of the farmers had no significant relationship with their use of printed materials by the farmers in receiving farm information.

25

2.2.2 Education

Ko and kim (1 988) conducted a study on watching behavior of rural television programme (RTV) by extension workers and found that the RTV ratings or the respondents were not significantly related to their educational background However, older watchers indicated a greater trend Lo watch RTV programmes.

Kashem and Jones (1988) found in their study that education of the small farmers had significant positive relationship with their information sources

Kumari (1988) showed that there was significant positive relationship between education of women and effectiveness of selected six media use

Chakraborty (1992) showed that the education or the farmer had significant relation with their time spend in listening to radio. However, he found that there was no statistically significant relationship between their education and listening habit.

Sarker (1996) found in his study that education or the small farmers had significant positive relationship with the opinion of the farmers regarding effectiveness of agricultural information disseminated through agricultural radio programme

Hossain (1996) observed a significant relationship between education of the TV viewer farmers and their usefulness of Television as an agricultural information media

Islam (1998) in his study concluded that more the level of education of the farmers, the more will be their positive opinion the effectiveness of TV programme.

Nuruzzaman (2003) found that education of the farmers had positive and highly significant relationship v.ith their use of mass media in receiving agricultural information.

Alam (2004) found that education of the farmers had positive and highly significant relationship with their opinion of the farmers on effectiveness of printed materials in getting farm information.

Islam (2005) found that education of the farmers had positive and highly significant relationship with their use of printed materials by the farmers in receiving farm information.

2.2.4 Family Size

[slam (1998) observed that there was no significant relationship between family size of the farmers and their opinion on the effectiveness of Mati-0-Manush Television program in disseminating agricultural information.

Sarker (J996) concluded that family size of the farmers had no significant relationships with effectiveness of agricultural information disseminated through agricultural radio programme.

Hossain (1996) observed a significant relationship between family size of the TV viewer farmers and their usefulness of Television as an agricultural information media.

Anisuzzaman (2003) observed that family size of the farmers had no significant relationship with their communication media Radio, TV, Newspaper in adoption of improved rice production technologies.

Nuruzzaman (2003) found that family size of the farmers had no relationship with their use of mass media in receiving agricultural information

2.2.3 farm Size

Sarker (1996) concluded that farm size of the farmers had no significant relationships with effectiveness of agricultural information disseminated through agricultural radio programme.

Hossain (1996) observed a significant relationship between farm size of the TV viewer farmers and their usefulness of Television as an agricultural information media.

Islam (1998) observed that there was no significant relationship between farm size of the farmers and their opinion on the effectiveness of Mati-0-Manush Television program in disseminating agricultural information

Anisuzzaman (2003) observed that farm size of the farmers had no significant relationship with their communication media Radio, TV, Newspaper in adoption of improved rice production technologies.

Nuruzzaman (2003) found that farm size or the farmers had no relationship with their use of mass media in receiving agricultural information

Islam (2005) found that farm size or the farmers had no significant relationship with their use of printed materials by the farmers in receiving farm information.

2.2.5 Annual Family Income

Hossain (1996) observed a significant relationship between annual family income of the TV viewer farmers and their usefulness of Television as an agricultural information media.

Islam (1998) observed that a significant relationship between annual family income of the farmers and their opinion on the effectiveness of Mati-0-Manush Television program in disseminating agricultural information

Anisuzzaman (2003) observed that annual family income of the farmers had no significant relationship with their communication media Radio, TV, Newspaper in adoption of improved rice production technologies

Nuruzzaman (2003) found that annual family income of the farmers had no relationship with their use of mass media in receiving agricultural information

Alam (2004) found that annual family income of the farmers had positive and highly significant relationship with their opinion of the farmers on effectiveness of printed materials in getting farm information.

Islam (2005) found that annual family income of the farmers had no significant relationship with their use of printed materials by the farmers in receiving farm information.

2.2.6 Wealth ownership

Sarker (1996) concluded that wealth ownership of the farmers had no significant relationships with effectiveness of agricultural information disseminated through agricultural radio programme.

Hossain (1996) observed a significant relationship relation between wealth ownership of the TV viewer farmers and their usefulness of Television as an agricultural information media.

2.2.7 Organizational participation

Sarker (1996) concluded that organizational participation of the farmers had significant relationship with effectiveness of agricultural information disseminated through agricultural radio programme.

Islam (1998) in his study concluded that the organizational participation of the farmers had positive relationship with the favorable opinion towards the information received from TV programme.

Anisuzzaman (2003) observed that organizational participation of the farmers had a significant relationship with their communication media in regarding adoption of improved rice production technologies.

Nuruzzaman (2003) found that organizational participation of the farmers had a positive relationship with their use of mass media in receiving agricultural information

Alam (2004) found that organizational participation of the farmers had no significant relationship with their opinion of the farmers on effectiveness of printed materials in getting farm information

Islam (2005) found that organizational participation of the farmers had positive and highly significant relationship with their use of printed materials by the farmers in receiving farm information

2.2.8 Innovativeness

Hossain (1996) observed a significant relationship between innovativeness of the TV viewer farmers and their usefulness of television as an agricultural information media.

Hossain (1996) observed a significant rclauonslup betv..ccn rnnovauveness of the TV viewer farmers and their usefulness of tclev ision as an agricultural information media.

Islam (1998) in his study concluded that the innovauveness of the farmers had a positive relationship with the favorable opinion towards the information received from TV programme (Mati-0- lanush)

Anisuzzaman (2003) observed that innovativeness of the farmers had a positive and significant relationship with their communication media in adoption of improved rice production technologies.

Noruzzaman (2003) found that innovativeness of the farmers had a positive relationship with their use of mass media in receiving agricultural information.

Islam (2005) found that innovativeness of the farmers had positive and significant relationship with their use of printed materials by the farmers in receiving farm information.

2.2.9 Attitude towards modern agricultural technologies

Sarker (1996) concluded that attitude towards modern agricultural technologies of the farmers had a positive relationships with effectiveness of agricultural information disseminated through radio

Islam (1998) in his study concluded that the attitude towards modern agricultural technologies of the farmers had a positive relationship with the favorable opinion towards the information received from TV programme (Mati-0-Manush).

Nuruzzaman (2003) in his study concluded that the attitude towards modern agricultural technologies of the farmer had no relationship with their use of mass media in receiving agricultural information.

Islam (2005) found that attitude towards modem agricultural technologies of the farmers had no significant relationship with their use of printed materials by the farmers in receiving farm information

2.2.10 Agricultural knowledge

Kashem and Jones (1988) found in their study that agricultural knowledge of the small farmers had significant positive relationship with their contact with information sources.

Kashem and Halim (1991) showed that the of communication media in adoption of modern rice technologies had significant positive relationship with agricultural knowledge

Perveen (1995) found that mass media exposure of the respondents had a positive significant relationship with their agricultural knowledge

Islam (1998) in his study concluded that the agricultural knowledge of the farmers had a positive relationship with the favorable opinion towards the information received from TV programme (Mati-0-Manush)

Nuruzzarnan (2003) in his study concluded that the agricultural knowledge of the farmer had a positive and significant relationship with their use of mass media in receiving agricultural information.

Alam (2004) found that agricultural knowledge of the farmers had positive and highly significant relationship with their opinion or the farmers on effectiveness or printed materials in getting farm information

Islam (2005) found that agricultural knowledge education of the farmers had positive and highly significant relationship with their use of printed materials by the farmers in receiving farm information.

2.3 The conceptual framework of the study

In scientific research selection and measurement of variables constitute an important task. The hypothesis of a research properly contains at least two important elements i.e. "a dependent variable" and "an independent variable." A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variables (Townsend, 1953). Independent variables are that factor which is manipulated by the researcher in which attempt to ascertain its relationship to an observed phenomenon. A simple conceptual framework for the study is made on the basis of review of literature.

DEPENDENT VARIABLE

Effectiveness of
mass media in
adoption of rice
production
technologies

Fig.2.4: A simple conceptual framework of the study

Methodology

Methodology consists of methods and procedures of data collection, data analysis and measurement of variables. More appropriate the methodology more accurate the research. The basic 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 and analyze them in an apposite way, which will help him 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 viewers 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

Sayedpur Union of Pirganj Upazila under Thakurgoan District, an area of intensive rice production was purposively selected as a the study area. The union consists of 6 villages, out of which two villages namely Bagun Bari and Bhadua were selected by random sampling technique as the locale of the study The maps of the study area are given as figure 3.1.1 & 3.1.2

Study area map

Pirganj Upazila under Tbakurgaon District

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Pirganj ~

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West Bengal
(INOIA)

THAKURGAON DISTRICT

I Study area

Figure 3.1.1. A Map of Thakurgaon District Showing Pirganj Upazila

Map of

Pirganj Upazila showing Sayedpur Union
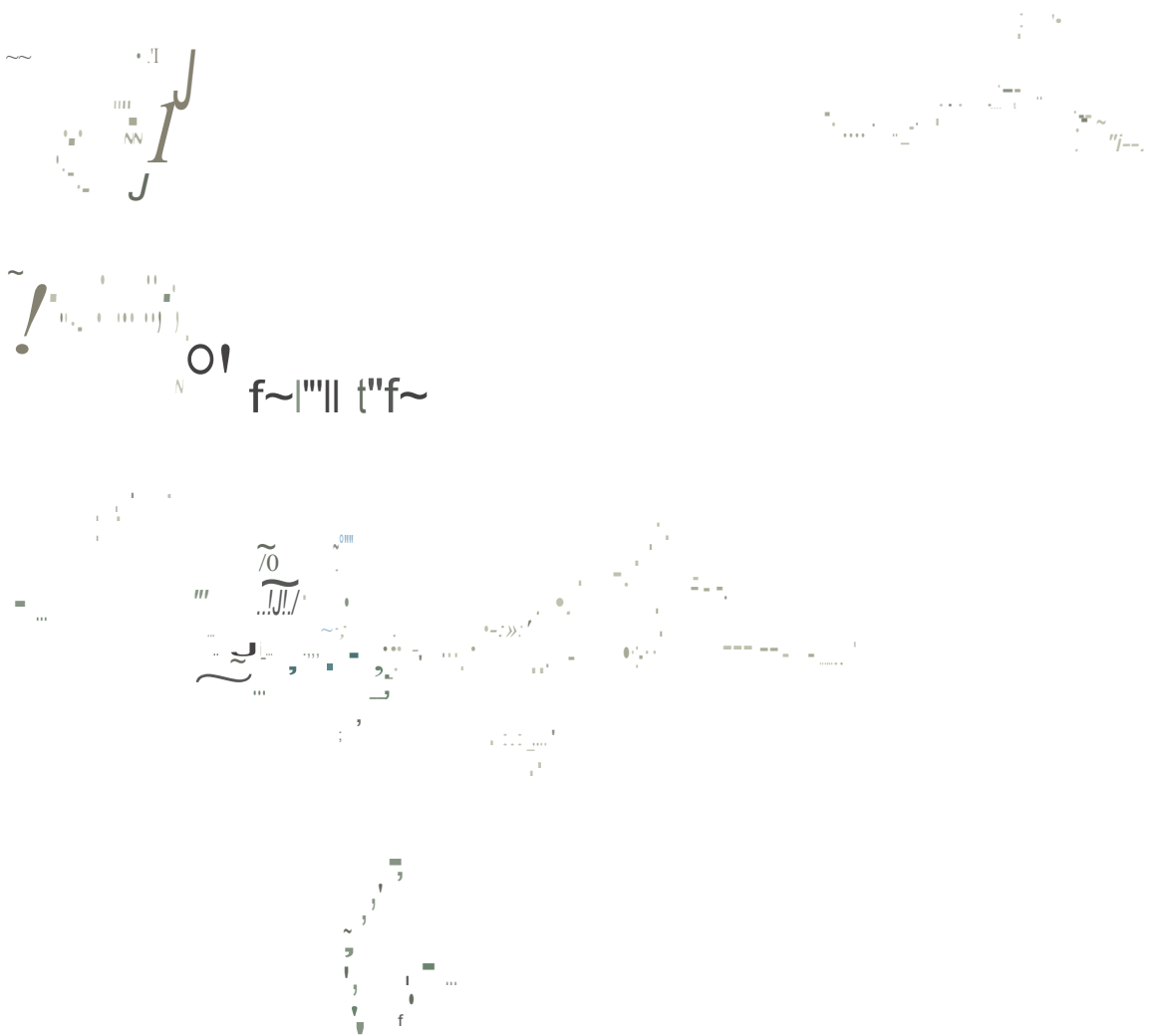
| Locale of the study

Figure 3.1.2. A Map of Pirganj Upazila showing Bagun Bari and Bhadua villages
under Sayedpur Union

3.2 Population and Sample of the Study

An up-to-date list of all rice growers of the selected villages was prepared with the help of local leader, Sub Assistant Agricultural Officer (SAAO) and Agricultural Extension Officer (ABO) of Pirganj Upazila. The total numbers of farm families in these villages were 550. For proportionate representation from each village 20% sample were drawn following stratified sampling method. Thus one hundred and ten farmers constituted the sample for this study. However, a reserve list of 11 farmers was also prepared. Farmers in the reserve list were used only when a respondent in the original list was not available. The distribution of the sample farmers and those in the reserve list from the selected villages is shown in table 3.2.1

Table 3.2.1. Distribution of population, sample and reserve list of rice growers in two selected villages of Sayedpur Union under Pirganj Upazila

Villages	Population of rice growers	Number of rice growers included in the sample	Number of rice growers included in the reserve list
Bagun Bari	300	60	6
Bhadua	250	50	5
Total	550	110	11

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, alternation, 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 lo 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 individuaJ cases (Ezekiel and Fox, 1959). 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 his attempt to ascertain its relationships to an observed phenomenon A dependent variable is that factor which appears, disappears or varies as an effect of the independent variables (Townsend, 1953)

The successful selections of variables ensure the successful research In appropriate and inconsistent selection of variables may lead to faulty 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 and had discussion with the faculty members. experts, researchers and related fields, Considering personal, economic, social and psychological factors of the rural community and time and resources availability to researcher ten characteristics of the 11u· 1u1 mcrs were selected as independent variables like Age, Education, Family size, Faun ize, Annual family income, Wealth ownership, Organization participation, luuovativeness, Altitudes towards modern technologies, and Agricultural knowledge Effectiveness of mass media in adoption of rice production technologies was the dependent variable

3.5 Data Collection

Data were collected by the researcher himself with the help of local leader, Sub-Assistant Agricultural Officer (SSAO) through interview schedule To get valid and r...lcvant information, the researcher made all possible efforts to explain the purpose of the study to rice farmers. Sub-Assistant Agricultural Officer and local opinion leaders 'iclped 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 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 himself during 21 October to 27 November ~C06 A,, the time .. a" harvesting period of the Aman rice most of the respondents were interviewed in the afternoon in their own houses or in the local tea statix

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.

Education

Education of a respondent was measured in terms of classes passed by him in formal education system (i.e. school, college and university) if a respondent passed 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

Family size

Family size of a respondent was determined in terms of the 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 (five) 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.

Farm size

Land is the most important capital of a farmer and the farm size has a 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.

Where,

A_i= Area under homestead

A_2 = Cultivated area owned by a respondent

A_3 =Cultivated area taken on lease on by a respondent from others

A_i = Area under ponds, garden, fallow lands and others

A_s= Cultivated area given by a respondent to others on share cropping

A_0 = Cultivated area taken by a respondent from others on share cropping

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.

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, daily labor etc) by the respondent himself and other family members. The value of all the agricultural crops, livestock, fisheries. fruits, vegetables etc. were taken into consideration. The income score was assigned as one (1) for each one thousand taka of income

Wealth ownership

The wealth ownership and economical ability of a respondent was measured by the market value of respondents' total assets. It was ascertained from three phases In the first phase, the total area of respondents own land was noted. Then it was converted into cash value according to the prevailing market price. Jn the second phase the number of respondent agricultural equipments, machinery, household furniture and goods were noted with their estimated value in terms of taka In third phases the amounts of taka were added together to obtained a total amount. A score of l was given for each thousand taka Data obtained in response to item no. 6 of the interview schedule were used to determine the wealth ownership of the respondents.

Organizational participation

Organizational participation score of respondents was measured on the basis of his/her participation in different 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 9 (nine) organizations and the scoring were done in the following way

Organizational participation score= 1:P X D

Where,

P- Participation Score

D- Duration (no. of years)

The nature of organizational involvement (participation) of the farmers was quantified in the following manner:

Nature of involvement	Score
a) No Participation	0
b) As Ordinary member	
c) As Executive member	2
d) As President or Secretary	3

If the individual is an executive committee member for four years his/her score of participation would be 4X2=8. Again, Ir a respondent had membership in two or more organization, his score was computed by adding the scores obtained from each organizational according to the categories of his membership.

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 social system (Rogers, 1995). Innovativeness of a respondent was measured on the basis of adoption of 10 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 year after hearing	4
Within 2 year after hearing	3
Within 3 year after hearing	2
Within 4 year after hearing	
Do not use	0

Thus, the innovativeness score of a respondent was obtained by adding scores for all 10 items. Innovativeness score of a respondent could range 0 to 40 where 0 indicates no innovativeness and 40 indicate maximum innovativeness.

Attitude towards modern agricultural technologies

Attitude towards modern agricultural technologies of a respondent referred to his feeling, belief and action tendency towards the various modern agricultural technologies. Likert- type scale was used to determine the attitudes towards modem agricultural technologies. The scale contained 10 statements out of which 5 statements were positive and 5 statements were negative. These positive and negative statements were arranged alternately. A statement was considered positive only when it reflected the idea of favorableness towards the modem agricultural technologies. The respondents were asked to express the opinion in the form of strongly agreed, agreed, moderately agreed, not agreed and strongly disagreed. Scores of 4, 3, 2, 1 and 0 were assigned respectively in case of strongly agreed, agreed, moderately agreed, not agreed and strongly disagreed for a positive statement. On the other hand, for negative statement reverse scoring method was followed.

Hence attitude towards modern technologies was determined by summing up the scores obtained by the respondents. Thus, possible attitude towards modem agricultural technologies scores of the respondents could range from 0 to 40 where 0 indicate unfavorable attitude and 40 indicate highly favorable attitude towards modem agricultural technologies.

Agricultural Knowledge

The knowledge or the respondents was measured by asking 15 (fifteen) selected questions and each of the questions was assigned 2 (two) scores. Appropriate answer was given full marks and partial answer was partially marked, where as wrong answer was given 0 (zero). The agricultural knowledge score could range from 0 to 30. where zero (0) indicated no knowledge and 30 indicated high knowledge. Based on the achieved score respondents were categorized into low knowledge, medium knowledge and high knowledge.

3.7.2 Measurement of dependent variable

Effectiveness of mass media in adoption of rice production technologies was the dependent variable of the study. It was measured on the basis of opinion of the farmers how effective the different mass media namely radio, television, newspaper, poster, field day and opinion leader in adoption of rice production technologies considering five stages of innovation decision process like knowledge, persuasion, decision, implementation and confirmation stage. In doing so, farmers were asked to give their opinion according to stage wise extent of effectiveness of mass media. The extent of effectiveness of mass media was measured by using a 4 point rating scale, such as very effective, effective, less effective and not effective

An appropriate score was assigned to each of the scale like-

Extent of effectiveness	Assigned Score
Very effective	
EfTective	
Less effective	
Not effective	0

By adding the assigned scores of 6 mass media of a respondent together, the effectiveness of mass media score of farmer was obtained for one stage. The effectiveness of mass media score could rang from 0 to 18 per stage, Thus. the total effectiveness of mass media score of a respondent could range from 0 to 90. 0 indicating not effectiveness while 90 indicating very high effectiveness of mass media in adoption of rice production technologies.

For determining rank order the opuuon of the respondents on effectiveness of different mass media, Mass Media Effectiveness Index (MMEJ) was computed. The MMEl of a particular media was calculated by the following formula:

MMEl= 3/fve + 2/fe + 1 /f Le+ 0 f ne

Where, *MMEl* = Mass Media Effectiveness Index

f ve =Number of respondents opined very effective

fe =Number of respondents opined effective

f Le= Number of respondents opined less effective

f ne =Number of respondents opined not effective

Thus the value of MMEl of each of individual could range from 0 to 330, where 0 indicated not effective and 330 indicate very effectiveness of mass media in adoption of rice production technologies. On the basis ofMMEl a rank order was prepared.

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 Science) 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 effectiveness of mass media in adoption of rice production technologies 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 effectiveness of the individual mass media in adoption of rice production technologies. The correlation matrix has been given in the Appendix B.

Chapter IV
Result and Discussion

Result and discussion is the focal point of whole research work. The quality of research exclusively depends upon how well the findings of the research are discussed and interpreted. So to make the results and discussion meaningful, acceptable and universal the collected data were coded, categorized, tabulated, analyzed and statistically tested in accordance with the objectives of the study. The results have been discussed in three sections such as (i) selected characteristics of the farmers, (ii) farmers opinion on the effectiveness or mass media in adoption of rice production technologies as perceived by the farmers and (iii) relationship between selected characteristics of the farmers and effectiveness of mass media in adoption of rice production technologies as perceived by them.

4.1 Selected Characteristics of the Farmers

Farmers use those modern technologies and finally adopt which arc suitable in their own socio-economic setup and agro-cconornic settings. Moreover, farmer's individual characteristics and personal make-up play a vital role in adopting any agricultural practices in the overall technologies transfer process. A particular technology might be proved beneficial or suitable for a farmer but he may not be in a position to accept it due to his unfavorable attitude and situational factors. The individual characteristics of the farmers may greatly vary and have a great impact on the use of mass media, particularly radio, television and printed materials.

In this section the selected characteristics of the farmers such as i) Age, ii) Education, iii) Family size, iv) Farm size, v) Annual family income, vi) Wealth ownership, vii) Organizational participation, viii) Innovativeness, ix) Attitude towards modern agricultural technologies and x) Agricultural knowledge have been discussed.

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

Table 4.1. Salient features of the farmers selected characteristics

Characteristics	Measuring units	Possible scores	Observed scores		Mean	Standard deviation
			Minimum	Maximum		
Age	Years	-	20	64	42.027	10.005
Education	Schooling years	-	0	16	6.666	5.202
Family size	Number	-	2	16	6.027	1.884
Farm size	Hectare	-	0.04	10.32	0.79	.47
Annual family income	'000' taka	-	11	428	109.61	69.88
Wealth ownership	'000' taka	-	18	2000	161.70	126.44
Organizational participation	Scores	-	3	25	10.072	4.187
Innovativeness	Scores	0-40	6	28	16.154	4.288
Attitude towards modern agricultural technologies	Scores	0-40	17	35	27.636	2.96
Agricultural knowledge	Scores	0-30	5	2'5	14.036	4.242

4.1.1 Age

The age of the sample farmers ranged from 20 to 64 years with an average of 42.027 and the standard deviation of 10.005. The farmers of the study area were classified into three categories on the basis of their age. Distribution of the farmers according to their age has been shown in the Table 4.1.1.

Table 4.1.1. Distribution of the respondents according to their age

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Young (up to 35 yrs)	36	32.5		
Middle Aged (36-50 yrs)	61	55.7	42.027	10.005
Old (51 and above)	13	11.8		
Total	110	100		

Data presented in Table 4.1.1 indicate that the highest proportion (55.7 percent) were middle aged farmers compared to 32.5 percent young and 11.8 percent old aged. It appears that more than four fifth (88.2%) of the respondents in the study area were either young or middle-aged. Young and middle aged people are generally more receptive to new idea and practices. In rural settings of Bangladesh, they are usually the decision makers in farming business social affairs as well. Hussen (2001), Islam (2002) and Hossain (2003) also found the similar findings in their studies.

4.1.2 Education

The education score of farmers ranged from 0 to 16 with an average of 6.666 and standard deviation 5.202. On the basis of the education score the farmers were categorized into 4 categories such as no education, primary education, secondary education and above secondary education. (Table 4.1.2)

Table 4.1.2. Distribution of the respondents according to their level of education

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
No Education (0)	14	12.7		
Primary Education (1-5)	34	30.9		
Secondary Education (6-10)	32	29.1	6.666	5.202
Above Secondary (11-16)	30	27.3		
Total	110	100		

The data shown in table 4.1.2. reveals that 12.7% of the farmers have no formal education. Very few of them can sign only. But 87.3% respondents had meaningful literacy comprised of primary, secondary and above secondary level of education. Some of them possess graduate and master degree. From this table it was quite evident that the educational status of the farmers is found to be higher than that of national average of 65.5% (Anonymous, 2003). So, farmers of the study area were supposed to be innovative, inquisitive and inclined to newness.

4.1.3 Family Size

Family size of the farmers ranged from 2 to 16 with an average of 6.027 and standard deviation is 1.884. On the basis of the family size the respondents have been classified into 3 categories, such as small, medium and large family (Table 4.1.3.).

Table 4.1.3. Distribution of the respondents according to their family size

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Small (2-4)	54	49.1		
Medium (5-7)	50	45.4	6.027	1.884
Large (above 7)	6	5.5		
Total	110	100		

Data presented in the above table shows that highest proportions (49.1%) of the farmers belong to the small family size category. Almost equal proportion (45.4%) of the farmers had fallen under medium family size. Only a small portion of the respondents (55%) had large family size with above 7 members. The average family size being 6.027 a little higher than national average 4.9 (BBS, 2003). The smallest is the beautiful. In nucleus family people feel more secured and economically solvent which helps to take important decision as well as risk oriented activities.

4.1.4 Farm Size

The farm size of the farmers of the study area ranged from 0.04 hectares to l0.32 hectares with average 0.79 ha and the standard deviation 0.47. According to the farm size the farmers have been categorized into 4 categories such as marginal, small, medium and large farmer (Table 4.l4.).

Table 4.1.4. Distribution of the respondents according to their farm size

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Marginal (up to 0.20 ha)	4	3.6		
Small (0.21- 1.20 ha)	72	65.5	0.79	0.47
Medium (1.21- 2.05 ha)	29	26.4		
Large (more than 2.05 ha)	5	4.5		
Total	110	100		

From the table 4.1.4. it was quite clear that a bulky proportion (65.5%) of the farmers of the study area had small farm owing 0.2]- 120 ha of land. About one third (30.9%) of the respondents belong to medium (26.4%) to large farm size (4.5%) category. The average farm size of Bangladesh is 0.81 ha which nearly resembles to this study (0.79 ha). Data indicate that the majority of the respondents under the study area had small to medium farm size. Farm size of the respondents plays a vital role in adopting modern agricultural technologies. Hossain (1999) and Farhad (2003) also found the similar findings in their studies.

4.1.5 Annual Family Income

The annual family income of the farmers of this study ranged from 11 to 428 thousand taka with an average of 109.6l and the standard deviation 69.88. On the basis of the annual family income scores the respondents were classified into 3 categories namely, low income, medium income and high income categories (Table 4.1.5).

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

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Low income (up to 75)	40	36.3		
Medium income (76-150)	52	47 3	109.61	69.88
High income (more than 150)	18	l6 4		
Total	l l0	J00		

Data from the above table reveal that the highest proportion of the farmers (47.3%) had medium income, while 36.3 percent had low income and only 16.4 percent had high income. In fact the majority proportion (83.6%) of the farmers of the study area constitute low to medium categories or income. The average income of the respondents was less than national average per capita income of the country i.e. 450 US dollar (BBS, 2005). This might be due to the fact that farmers in the study area were only engaged in agriculture. Generally, lower income gives an individual adverse condition in the society. This is so because income is obviously associated with purchasing technologies of an individual.

4.1.6 Wealth ownership

The farmers were classified into three categories based on their wealth ownership scores considering the mean and standard deviation. The categories and the distribution of the farmers were shown in Table 4.1.7.

Table 4.1.6. Distribution of the respondents according to their wealth ownership

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Low (up to 98.48)	⹂	29 l		
Medium (98.49-224.92)	56	50.9	l61.70	126.44
High (above 224 92)	22	20.0		
Total	110	l00		

Data furnished in the Table 4.l. 7. indicate that 50.9% respondents had medium wealth ownership while 29.l % and 20% had low and high wealth ownership respectively. The economic ability and social recognition (sometimes) of an individual can be measured by determining the wealth he has. The findings of this study indicate that the highest percentage (70.9%) or the farmers had medium to high wealth ownership. Farmers, especially the lower wealth ownership are usually economically handicapped; they can't afford costly innovations considering high risk and uncertainty. So, the farmers with more wealth ownership were expected to use more agricultural information received from the mass media.

4.1.7 Organizational Participation

According to the observed scores of organizational participation the farmers were classified into no participation, low participation, medium participation and high participation categories with an average or 10.072 and standard deviation 4.187 (Table 4. I.7)

Table 4.1.7. Distribution of the respondents according to their organizational participation

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
No participation (0)	26	23.6		
Low participation (1-5)	34	30.9		
Medium participation (6-l0)	36	32.7	10.072	4.l87
High participation (ll & above)	l4	l2.7		
Total	110	100		

Data furnished in the Table 4.l. 7. showed that 23.6% farmers of the study area had no organizational participation remaining 63.6% or the farmers had low to medium participation. More organizational participation develops extrovert mentality and establishes coordinate capability and capacity to cause more mass media. Conclusion could be drawn that there were favorable condition for organizational participation in the study area.

4.1.8 Innovativeness

Innovativeness scores of the farmers ranged from 0 to 40. The mean score was 16.154 and standard deviation 4.288. On the basis of innovativeness scores, the respondents were classified into three categories as shown in Table 4.1.8

Table 4.1.8. Distribution of the respondents according to their innovativeness

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Low innovativeness (0-l3)	39	35.5		
Medium Innovativeness (14-26)	53	48.2	16.154	4.288
High Innovativeness (27 - 40)	l8	16.3		
Total	110	100		

Data presented in Table 4.1.8 indicated that the highest proportion (48.2%) of the farmers had medium innovativeness compared to 35.5% had low innovativeness and 16.3% had high innovativeness. Table revealed that majority (83.7 percent) of the respondents had either low to medium Innovativeness. This indicates that overall innovativeness among the farmers in this study area was not satisfactory. Hence, it may be necessary to increase the innovativeness or the mass media user farmers through providing agricultural knowledge and increasing their skills and efficiencies. Chowdhury (1997) and Pedder (1999) also observed that similar findings in their study.

4.1.9 Attitude towards modern ngricultural technologies

The attitude of the farmers towards the modern agricultural technologies ranged from 17 to 35 against the possible range of 0 to 40. The average was 27.636 and standard deviation was 2.96. According to the attitude towards the modern agricultural technologies scores farmers were classified into three categories such as less favorable, favorable and highly favorable (Table 4.1.9)

Table 4.1.9. Distribution of the respondents according to their attitude towards modern agricultural technologies

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Less favorable (17-20)	36	32.7		
Favorable (21-30)	46	41.8	27.636	2.96
Highly favorable (31-35)	28	25.5		
Total	110	100		

The table 4.1.9 showed that highest proportion (41.8%) of the farmers had favorable attitude toward modern technologies. The 2nd highest 32.7% of had less favorable attitude and 25.5 percent had highly favorable attitude towards modern technologies. So, it is clear that most of the farmers (67.3%) had positive attitude towards technologies, which helped them to adopt technologies. It implies that above 50% of the mass media user farmers were aware of modern technologies and practices.

4.1.10 Agricultural Knowledge

The agricultural knowledge of the farmers was assessed by asking them 15 questions and then scores were given to their answers. The obtained scores ranged from 5 to 23 against the possible range from 0 to 30. The average was 14.03 and standard deviation was 4.242. According to the agricultural knowledge scores farmers were classified into 3 categories such as low knowledge, medium knowledge and high knowledge (Table 4.1.10.).

Table 4.1.10. Distribution of the respondents according to their agricultural knowledge

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Low knowledge (up to 10)	24	21.8		
Medium knowledge (11-20)	70	63.6	14.030	4.242
High knowledge (21 to 30)	16	14.5		
Total	110	100		

The data from the above table reveals that almost all the farmers (78.1 %) had medium to high knowledge, whereas only 21 8% had low knowledge. In general, the level of agricultural knowledge of the respondents was good. It could be concluded that good agricultural knowledge helped farmers to adopt modern agricultural technologies in the study area.

4.2 Opinion of the farmers on the effectiveness of mass media in adoption of rice production technologies

Opinion of the farmers on the effectiveness of mass media in adoption of rice production technologies was the main focus of this study. The computed effectiveness of mass media score or the respondents ranged from 20 to 84 against the possible range of 0 to 90. The mean and standard deviation were 44 94 and 13 98 respectively. Considering the effectiveness score of the respondents, they were classified into three categories such as low effective medium effective and highly effective were presented in Table 4.2 1.

Table 4.2. 1. Distribution of the respondents according to their opinion on the effectiveness of mass media in adoption of rice production technologies

Category	Farmers		Mean	Standard deviation
	umber	Percent		
Low effective (up to 30)	16	14 55		
Medium effective (3 1-60)	53	48 18	44 94	13 98
Highly effective (61 and 90)	41	37 27		
Total	110	100		

Data show that 48 18% of the farmers belonged to medium effective category while 37.27% to highly effective category and 14 55% low effective category. Thus, about 85% of the farmers opined that mass media had medium effective to highly effective in adoption of rice production technologies by the farmers in this study area.

The Mass Media Effectiveness Index (MMEl) regarding the effectiveness of mass media in adoption of rice production technologies as perceived by the farmers on different item shown in Table 4 2.2

Table 4.2.2. Farmers opinion on Mass Media Effectiveness Index (MME!) regarding the effectiveness of mass media in adoption of rice production technologies

SI. No.	Mass Media	Extent of effectiveness				MME.I	Rank order
		Very effective	Effective	Less effective	ot effective		
)	Television (Mati-o-Manus)	60	26	20	4	252	I
2	Opinion leader	50	35	15	10	235	2
3	Farm Radio Talk	42	30	20	18	206	3
4	Newspaper	35	28	31	16	192	4
5	Field day	25	40	35	10	190	5
6	Poster	18	45	40	7	184	6

Among the selected mass media television was identified as the best effective mass media with a MMEI of 252 and it was followed by opinion leader (235), radio (206), newspaper (192), field day (190) and poster (184) Thus it was revealed that television was more effective than other selected mass media in adoption of technologies among the farmers of this study area.

During the five years the use of television by the farmers has been increased remarkably Especially Mati-0-Manus (Soil and Man) programme has created a permanent impression in the mind of the farmers while they had observed many success causes of use of Gutee Urea, Dram seeder, Nursery seedling (Dapok Seed bad) etc. under this programme. Through satellite channels of television facilities farmers to watch a lot of agricultural programme such as Anna Data, Redoya Mati-0-Manus, Sarnacher, Upner Dacter, Jiboner Jannay, Shukher Thikana, Janamat, Agami, -,~.;;; -;.... Jannay etc.of local and neighboring countries Perhaps these factors led the farmers to use television more than other mass media in adopting agricultural ~,.... hnologies. Ir. a study in Nepal it was also found that television, followed by radio, is the most common source of information about contraceptive methods among urban youth (Thapa and Mishra, 2003)

The graphical representations of mass media index (MMEI) of different media are shown (Figure 2.).
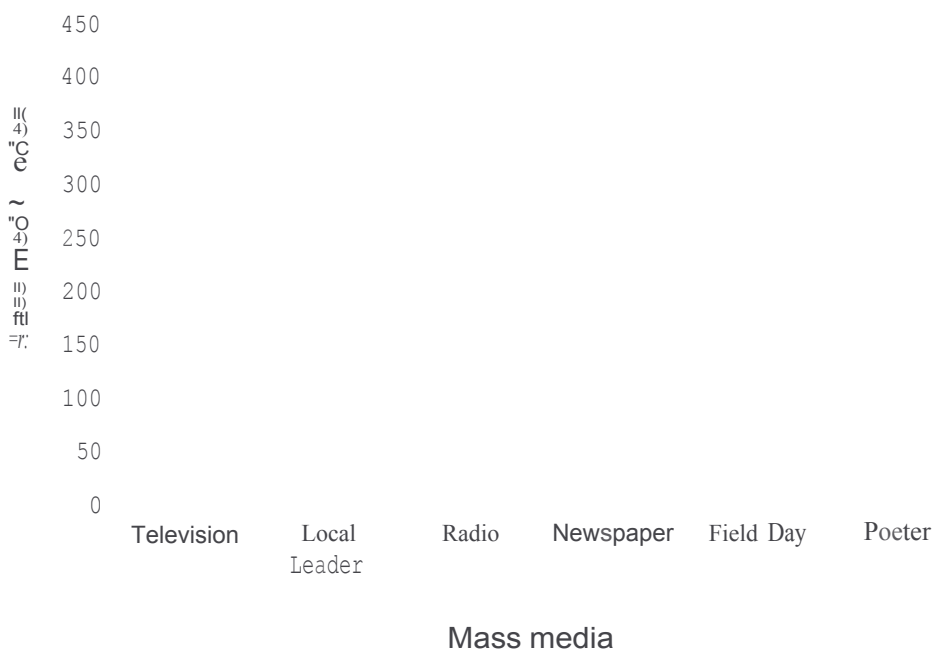
Figure 4.2.1. Graphical representations of rank order of Mass Media Effectiveness Index (MMEI)

4.3 Relationship between Independent and Dependent Variables

As mentioned earlier, the ten selected characteristics of the farmers were the independent variables of this study. The variables were age, education, family size, farm size, annual family income, wealth ownership, organizational participation, innovativeness, attitude towards modem technologies and agricultural knowledge, Each of the characteristics of the farmers constituted independent variables while effectiveness of mass media by the farmers in adoption of rice production technologies was the dependent variable in this study.

The purpose of this section is to examine the relationship of each of the independent variables with the dependent variables. Pearson's product-moment correlation co-efficient 'r' was computed to determine the relationship between two variables concerned (Table 4.3.).

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Table 4.3. Relationship between the independent and dependent variables

Independent variables	Correlation Co-efficient	Dependent Variable	Tabulated Value of 'r' (108 df.)s	
			0 05*	0.01 **
Age	-0 031			
Education	0.450**			
Family Size	0.038 'S			
Farm Size	0.092NS			
Annual family Income	0 020 ~s			
Wealth ownership	0 304**		0 184	0.234
Organizational Participation	0.307**			
innovativeness	0 **			
Attitude towards modern agricultural technologies	0.059 Ns			
Agricultural Knowledge	0 387**			

** Significant at 0 01 level or probability

'~Non Significant

4.3. 1 Relationship between age and effectiveness of mass media in adoption of rice production technologies

The relationship between age 0f the farmers and effectiveness of mass media in adoption of rice production technologies by the farmers was examined by testing the concerned null hypothesis:

"There is no relationship bet ween age and effectiveness of mass media in adoption of rice production technologies"

Co-efficient of correlation between the concerned variables was found to be 'r' = -0 031 as shown in Table 4 3. This led to the following observation regarding the relationship between the two variables under consideration:

- The relationship showed a negative trend

- The computed value of 'r' (-0.031) was smaller than the tabulated value (r = 0.184) with 108 degrees of freedom at 0.05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. That means age of the farmers had no significant relationship with their effectiveness of mass media in adoption of rice production technologies This might be reason that irrespective of their age all respondent almost similar in using mass media to seek information in rice production technologies Islam (1998) also found no relationship between age of the farmers and the effectiveness of Mati-o-Manus Television programme in disseminating agricultural information to the television viewer farmers. Thus the findings of the present study conform to that of Islam (1998). Bavaltti and Sundarswamy (1990) and Gongoi and Gongoi (1989) found the similar result

4.3.2 Relationship between education and effectiveness of mass media in adoption of rice production technologies

The relationship between education of the farmers and effectiveness of mass media in adoption of rice production technologies was examined by testing the concerned null hypothesis

"There is no relationship between education of the farmers and effectiveness of mass media in adoption of rice production technologies".

Co-efficient of correlation between the concerned variables was found to be 'r' = 0.450 as shown in Table 4.3. This led to the following observations regarding the relationship between the two variables under consideration.

- The relationship showed a positive trend.
- The computed value of 'r' (0.450) was larger than the tabulated value (r = 0.234) with 108 degrees of freedom even at 0.01 level of probability.

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On the basis of above findings, the null hypothesis was rejected. Hence, u is clear that education of the farmers had highly significant and positive relationship with effectiveness of mass media in adoption or rice production technologies This indicate that the higher the education the more is the effectiveness of mass media use among the farmers. Education enables individuals to gain knowledge and thus, their power of understanding, consequently their outlook is broadened and horizon of knowledge is expanded. The educated persons used to have frequent contact with radio, TV and are exposed to various external sources which increase their power of understanding compared to the individuals with less educational background Similar results were also found by Sarker (1995), Chakraborty (1992), Nahar(1996), Alamin (1997), Kalil(1 998), Anisuzzaman (2003).

4.3.3 Relationship between family size and effectiveness of mass media in adoption of rice production technologies

The relationship between family size of the farmers and their adoption of rice production technologies was examined by testing the concerned null hypothesis.

"There is no relationship between family size and efTectiveness of mass media in adoption of rice production technologies"

Co-efficient of correlation between the concerned variables was found to be 'r' = 0.038 as showed in Table 4.3. This led to the following observations regarding the relationship between the two variables under consideration.

- The relationship showed a positive trend
- The computed value of "r ' (0.038) was smaller than the tabulated value (r = 0.184) with 108 degrees of freedom at 0 05 level of probability.

On the basis of above findings, the null hypothesis could not be rejected. That means family size of the farmers had insignificant relationship with effectiveness of mass media in adoption of rice production technologies. Islam (1998) also found that family size of the farmers no significant relationship with their opimon on effectiveness of Mati-o-Manus TV programme in disseminating agricultural information. Similar results were also found by Nuruzzaman (2003), Sultana (1997).

4.3.4 Relationship between farm size and effectiveness of mass media in adoption of rice production technologies

The relationship between farm size of the farmers and effectiveness of mass media in adoption of rice production technologies was examined by testing the concerned null hypothesis.

"There is no relationship between farm size and effectiveness of mass media in adoption of rice production technologies".

Co-efficient of correlation between the concerned variables was found to be 'r' = 0.092 as shown in Table 4.3. This led to the following observation regarding the relationship between the two variables under consideration:

- The relationship showed a positive trend
- The computed value of 'r' (0.092) was smaller than the tabulated value (r =0. 184) with 108 degrees of freedom al 0.05 level of probability.

On the basis above findings, the null hypothesis could not be rejected. Hence, it is confirms that farm size of the farmers had no significant relationship with effectiveness of mass media in adoption of rice production technologies. These findings indicate that the variables were independent to each other. Haque (1982) also found no relationship between farms size of the farmers and the effectiveness of Television as a medium of agricultural as a medium of agricultural information. Thus, the finding of the present study conforms to that of Huque. Similar findings were also observed by Matiar (1996), Anisuzzaman (2003), and Mollah (2006).

4.3.5 Relationship between annual family income and effectiveness of mass media in adoption of rice production technologies

The relationship between annual income or the farmers and their adoption of rice production technologies was examined by testing the concerned null hypothesis

"There is no relationship between annual family income and effectiveness or mass media in adoption of rice production technologies"

Co-efficient or correlation between the concerned variables v...as found to be 'r' = 0 020 as shown in Table ~ 1 This led to the following observation regarding the relationship between the two variables under consideration

- The relationship showed a positive trend

- The computed value or·r (0 020) was smaller than the tabulated value (r 0 l84) with 108 degrees of freedom al 0 05 level of probability

On the basis or above findings, the null hypothesis could not be rejected Hence, the researcher confirms that annual income of the farmers had no significant relationship with effectiveness of mass media in adoption or rice production technologies. Annual income of the farmers is a vital factor for fanning enterprise Individuals in the society respect the farmers who have higher income. He also can invest more money in his farming activity, can take risk in adopting new technologies. This means that the farmers in this study having higher income possessed more positive benefit from using improved rice production technologies. Similar findings were also observed by Anisuzzaman (2003), Nuruzzaman (2003).

4.3.6 Relationship between wealth ownership and effectiveness of mass media in adoption of rice production technologies

The relationship between wealth ownership of the farmers and effectiveness of mass media in adoption of rice production technologies was examined by testing the concerned null hypothesis.

"There is no relationship between wealth ownership and effectiveness of mass media in adoption of rice production technologies".

Co-efficient of correlation between the concerned variables was found to be 'r' = 0.304 as shown in Table 4.3. This led to the following observation regarding the relationship between the two variables under consideration:

- The relationship showed a positive trend
- The computed value of 'r' (0.304) was larger than the tabulated value (r =0.234) with 108 degrees of freedom at 0.01 level of probability

On the basis above findings, the null hypothesis was rejected. That means weaJth ownership of the farmers had positive and highly significant relationship with effectiveness of mass media in adoption of rice production technologies. This indicates that the higher level of wealth ownership of the farmers, the higher was their effectiveness of mass media to the media users. Wealth earning activities enables the individuals to gain knowledge and they become enthusiastic in obtaining new ideas, information and techniques needed for improving socio-economic status. Similar findings were also observed by lslam (1995), Hossain (1996).

4.3. 7 Relationship between organizational participation and effectiveness of mass media in adoption of rice production technologies

The relationship between organizational participation of the farmers and effectiveness of mass media in adoption or rice production technologies was examined by testing the concerned null hypothesis.

"There is no relationship between organizational participation and effectiveness of mass media in adoption or rice production technologies"

Co-efficient of correlation between the concerned variables was found to be 'r' = 0.307 as shown in Table 4.3. This led the following observation regarding the relationship between the two variables under consideration

- The relationship showed a positive trend
- The computed value of 'r' (0.307) was larger than the tabulated value (r 0 234) with 108 degrees or freedom Ht 0 0 l level or probability

On the basis of above findings, the null hypothesis was rejected Hence, the researchers confirm that organizational participation of the farmers had a highly significant relationship with effectiveness of mass media in adoption of rice production technologies The existing relationships indicate that with the increase of organizational participation there was a corresponding increase in the effectiveness of mass media Due to organizational involvement the farmers get a change in their horizon of understanding by sharing ideas and views with other persons. Thus steps are arranged to increase farmers' participation different organizations. Khan (2002), Paul (2000), Hossain (1991) and Hoque (1984) also found the similar result

4.3.8 Relationship between innovativeness and effectiveness of mass media in adoption of rice production technologies

The relationship between innovativeness of the farmers and their adoption of rice production technologies was examined by testing the concerned null hypothesis.

"There is no relationship between innovativeness and effectiveness of mass media in adoption of rice production technologies".

Co-efficient of correlation between the concerned variables was found to be 'r' = 0.323 as shown in Table 4.3. This led to the following observed regarding the relationship between the variables under consideration:

- The relationship showed a positive trend.
- The computed value of 'r' (0.323) was larger than the tabulated value (r = 0.234) with 108 degrees of freedom at 0.01 level of probability.

On the basis of above findings, the null hypothesis was rejected. That means innovativeness of the farmers had highly significant relationship with effectiveness of mass media in adoption of rice production technologies. This implies that the higher level of innovativeness of the farmers, the higher was their effectiveness of mass media in adoption of rice production technologies by the farmers. Innovativeness is the degree to which an individual is relatively earlier in adoption of new ideas than the others members of a social system. Therefore, it indicates innovativeness would be very helpful to the farmers for adoption of agricultural information received from mass media. Similar findings were also observed by Chowdhury (1999), Pedder (1999), Aurangozeb (2002) and Islam (2002).

4.3.9 Relationship between attitudes toward modern agricultural technologies and effectiveness of mass media in adoption of rice production technologies

The relationship between altitude towards modern technologies of the farmers and their effectiveness of mass media in adoption or rice production technologies was examined by testing the concerned null hypothesis

"There is no relationship between altitude towards modern technologies and effectiveness of mass media in adoption of rice production technologies"

Co-efficient of correlation between the concerned variables was found to be 'r' ~ 0.059 as shown in Table 4 3 This led to the following observed regarding the relationship between the variables under consideration

- The relationship showed a posit ivc trend.
- The computed value or 'r ' 0 059 was lower than the tabulated value (r 0 184) with l08 degrees of freedom at 0 05 level of probabrluy

On the basis of above findings, the null hypothesis could not be rejected Hence, it is confirms that attitude towards modern technologies of the farmers had positive but no significant relationship with effectiveness or mass media in adoption of rice production technologies The findings lead to the conclusion that farmers with favorable attitude towards technologies use a number of mass media but not significantly This finding also indicates that variables were independent to each other.

4.3.10 Relationship between agricultural knowledge and effectiveness of mass media in adoption of rice production technologies

The relationship between agricultural knowledge of the farmers and their effectiveness of mass media in adoption or rice production technologies was examined by testing the concerned null hypothesis.

"There is no relationship between agricultural knowledge and effectiveness of mass media in adoption of rice production technologies".

The computed value of correlation was found to be 0.387 as shown in Table 4.3. Following observations were made regarding the relationship between these two variables under consideration:

- The relationship showed a positive trend.

- The computed value of r (0.387) was found to be greater than the tabulated value (r=0.234) with 108 degrees of freedom at 0.01 level of probability.

Based on the above findings the null hypothesis was rejected. Hence, the researcher confirms that the agricultural knowledge of the respondents had positive significant relationship with effectiveness of mass media in adoption of rice production technologies. It was concluded that with the increase of the level of agricultural knowledge of the farmers their effectiveness of mass media in adoption of rice production technologies is also increased. Similar findings were found by Parveen (1995), Sarker (1995), Islam (1995) and Khan (1996).

Summary, Conclusion and Recommendations

5.1 Summary

5.1.1 Introduction

Bangladesh has a great potential in the sector or agriculture and the agricultural productivity of this country can be increased to a great extent by transferring the new technologies among the farmers. The rate of adoption of agricultural innovations has to be increased which will enhance the production. As, rice is the main food of this country so, the increase or rice production has to be ensured. The contribution of Bore rice is more than the Aus and Aman So it is necessary to take initiative to increase the production of Boro rice.

Agricultural production can be increased if appropriate technologies are used by the farmers. Hence, the diffusion of modern and appropriate technologies among the rural people demands effective communication system. In the adoption of new ideas mass media plays an important role especially in the awareness and interest stages (Kashem, 1992). Mass media like television   as an audio as well as a visual media provide tremendous educational value to our vast majority of illiterate farmers. It is an important source of information, entertainment and company. Message through mass media can motivate, stimulate, induce and change basic attitudes of the people.

The frame work of this study stems from mass communication media. Mass media involves radio, television, newspaper, poster, magazine, leaflet etc this research is confined with radio, television, newspaper, poster, field day and opinion leader only. The purpose of this study is to have an understanding about the extent of effectiveness of mass media in adoption of rice production technologies by the farmers of Sayedpur union under Pirganj Upazila. The study also aims to explain its relationship with the selected characteristics or the farmers. It is expected that this study will be helpful for adopting different types of production technologies irrespective of crops.

5.1.2 Specific Objectives

The following objectives are formulated in order to give proper direction to the research work-

I. To determine and describe some selected characteristics of the farmers

The selected characteristics are -

Age, Education, Family size, Farm Size, Annual family income, Wealth ownership, Organization participation, Innovativeness, Attitudes towards modern agricultural technologies and Agricultural knowledge

2. To determine the extent of effectiveness of the mass media in adoption of rice production technologies by the farmers.

3. To explore the relationship between the selected characteristics of the farmers and their effectiveness of mass media in adoption of rice production technologies.

5.1.3 Hypothesis

In this research, for the purpose or statistical test it becomes necessary to formulate null hypothesis. The null hypothesizes were as follows:

There is no relationship between 10 selected characteristics of the farmers (independent variables) namely, Age, Education, Family size, Farm size, Annual family income, Wealth ownership, Organization participation, Innovativeness, Attitudes towards modern agricultural technologies, Agricultural knowledge and Effectiveness of Mass Media in adoption of rice production technologies by the farmers (dependent variable).

5.1.4 Methodology

Sayedpur Union of Pirganj Upazila was the location of the study. In this area people grow Soro rice extensively so this area was selected to conduct this research. The two villages were randomly selected out of the 6 (six) where 550 (Five Hundred and fifty) farmers were living. Approximately 20% of the 550 farmers mean 110 farmers were selected randomly. Thus 110 Soro rice growers constituted the sample. For the collection of the data an interview schedule was prepared The Bangla version of the interview schedule was used to collect data from the respondents Data obtained from the respondents were tabulated. coded compiled and analyzed to accomplish the objectives of the study.

The selected individual characteristics of the farmers were the independent variables and effectiveness of mass media in adoption of rice production technologies by the farmers was the dependent variable. All these variables of the study were measured by computing appropriate scores. Various statistical measures such as mean, standard deviation, percentage and range were used in describing both the independent and dependent variables. To explore the relationship between the independent and dependent variables Correlation Coefficient was measured.

5.1.5 Summary of the Findings

The findings of the study and interpretation of the result have been described elaborately in Chapter IY. The major findings of the study are summarized below.

5.1.5.1 Selected characteristics of the farmers

Age

Age of the farmers ranged from 20 to 64 years. The average being 43.027 years with a standard deviation was 10 005. The highest proportions (55. 7%) of the farmers were middle aged, while 32.5% were young and 11.8% were old.

Education

Education of the farmers ranged from 0-16 years of schooling. The average score being 6.666 and the standard deviation was 5.202. Large proportion (30.9%) of the farmers had primary education (score 1-5) compared to 12.7% having no education (score 0), 29.1% secondary education and 27.3% had above secondary education.

Family size

The family size of the farmers ranged from 2 to 16 with an average being 6.027 and the standard deviation 1.884. The highest proportions (49.1%) of the farmers were found to have small family compared to 45.4% medium family and 5.5% large family size categories.

Farm size

Farm size of the farmers ranged from 0.02 to 10.32 hectares with an average of 0.79 hectares and the standard deviation 0.47. 65.5% or the farmers were found to have small farm, 3.6% marginal farm, 26.4% medium farm, and 4.5% had large sized farm.

Annual family income

Annual income scores of the farmers ranged from 11 to 428.0 with an average of 109.61 and the standard deviation 69.88. The highest proportion (47.3%) of the farmers had medium annual income compared to 36.3% low annual income and 16.4% having high annual income.

Wealth ownership

Wealth ownership scores of the farmers ranged from 18.0-2000 with an average score being 161.70 and the standard deviation 126.44. The highest proportion (50.9%) of the farmers had medium wealth ownership compared to 29.1% low and 20% having high wealth ownership.

Organizational participation

The observed range of organizational participation scores of the farmers 0 to 25 with an average score 10.072 and the standard deviation 4.187. The highest proportion (32.7%) of the farmers had medium organizational participation compared to 30.9% low organizational participation, 23.6% no participation and 12.7% having high organizational participation.

Innovativeness

Innovativeness scores of the farmers ranged from 0 to 40 with an average 16.154 and the standard deviation 4.288. The highest proportion (48.2%) of the farmers had medium innovativeness compared to 35.5% no innovativeness and 16.3% having high innovativeness.

Attitude toward modern agricultural technologies

The observed attitude of the farmers towards modern agricultural technologies ranged from 17 to 35 against the possible range of 0 to 40. The average was 27.636 and standard deviation was 2.96. According to the attitude scores farmers were classified into 3 categories. Highest proportion (41.8%) of the farmers had favorable attitude toward modern agricultural technologies. 32.7% farmers had less favorable attitude and 25.5% had highly favorable attitude towards modern agricultural technologies.

Agricultural Knowledge

The agricultural knowledge of the farmers was assessed by asking them 15 questions and then marks were given to their answers. Their marks ranged from 5 to 23 against the possible range from 0 to 30. The average was 14.030 and standard deviation was 4.242. According to the obtained marks farmers were classified into 3 categories. The highest proportion of the farmers had medium knowledge and tbe percentage was 63.60, whereas 21.80% and 1450% had low and high knowledge respectively.

Opinion of the farmers on the Effectiveness of Mass Media

The computed effectiveness of mass media score of the respondents ranged from 20 to 85 against the possible range of 0 to 90. The mean and standard deviation were 44.94 and 13.98 respectively. The highest proportions (48.18%) of the farmers' opinion about mass media were medium effective, while 37.27% were very effective and 14.55% were low effective

5.1.5.2 Relationship between the selected characteristics and effectiveness of mass media in adoption of rice production technologies

Age and Effectiveness of Mass Media

No significant and negative relationship was found between the age of the farmers and effectiveness of mass media at 5% level of probability. The correlation coefficient shows a negative trend. That means age or the farmers had no influence on the effectiveness of mass media in adoption of rice production technologies.

Education and Effectiveness of Mass Media

A positive and highly significant relationship was found at 1% level of probability between the education of the farmers and effectiveness of mass media. That means education of the farmers had a great influence on the effectiveness of mass media in adoption of rice production technologies. The 'r' value has depicted a positive trend.

Family Size and Effectiveness of Mass Media

At 5% level of probability no significant relationship was found between the family size of the farmers and effectiveness of mass media in adoption of rice production technologies and a positive trend has been found between two variables

Farm Size and Effectiveness of Mass Media

At 5% level of probability no significant relationship was found between the farm size of the farmers and effectiveness of mass media in adoption of rice production technologies and the two variables have shown a positive trend

Annual family Income and Effectiveness of Mass Media

There was no significant relationship between the annual family income of the farmers and effectiveness of mass media at 5% level of probability. That means annual income of the farmers had no influence on the effectiveness of mass media in adoption of rice production technologies.

Wealth ownership and Effectiveness of Mass Media

A positive and highly significant relationship was found at 1% level of probability between the wealth ownership or the farmers and effectiveness of mass media. That means wealth ownership of the farmers had a great influence on the effectiveness of mass media in adoption of rice production technologies. The 'r' value has depicted a positive trend.

Organizational Participation and Effectiveness of Mass Media

There was a significant and positive relationship between the organizational participation of the farmers and with their effectiveness of mass media in adoption of rice production technologies at 1% level of probability.

Innovativeness and Effectiveness of Mass Media

A positive and highly significant relationship was found at 1% level of probability between the innovativeness of the farmers and effectiveness of mass media. That means innovativeness of the farmers had a great influence on the effectiveness of mass media in adoption of rice production technologies.

Attitude toward modern Agricultural Technologies and Effectiveness of Mass Media

At 5% level of probability it was found that the attitude of the farmers toward modem agricultural technologies and their effectiveness of mass media had no significant relationship in adoption of rice production technologies.

Agricultural Knowledge and Effectiveness of Mass Media

There had a positive and significant relationship between agricultural knowledge and effectiveness of mass media at 1% level of probability. It was therefore suggested that the agricultural knowledge of the farmers had a positive and significant influence on their effectiveness of mass media in adoption of rice production technologies.

5.2 Conclusion

"A conclusion present the statements based on major findings of the study and these statements mostly confirm to the objectives of the research in the shortest form. It presents the direct answers of the research objectives, or it relates to the hypothesis" (Labon and Schefter, 1990).

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. Education of the farmers had a positive and highly significant relationship with the effectiveness of mass media which lead to the conclusion that more the level of education of the farmers the more will be their effectiveness of mass media in adoption of rice production technologies by the framers.

2. The farmers having more agricultural knowledge received more agricultural information. Knowledge is power. It helps an individual to create his understanding and awareness on different aspects of agricultural information. A positive relationship between agricultural knowledge of the farmers and effectiveness of mass media in adoption of rice production technologies leads to the conclusion that increasing agricultural knowledge and vice-versa.

3. Organization participation of the respondents had a positive and significant relationship with their effectiveness of mass media in receiving agricultural information. This indicates that with the increase of organizational participation of farmers the effectiveness of mass media is also increased.

4. Attitude towards modern technologies of the farmers had no significant but positive relationship with their effectiveness of mass media. The findings lead to the conclusion that the more the favorable feeling of the respondents towards modern technologies the more is their effectiveness of mass media in receiving farm information.

5. Innovativeness of the farmers is of course a desirable quality. An innovative farmer is also progressive in mind and can take risk in adopting an innovation. The innovativeness of the farmers was found to be correlated with their effectiveness of mass media. This means that mass media is more effective by the farmers the more is their innovativeness. Therefore, it may be concluded that mass media is a vital factor in increasing the innovativeness of the farmers.

6. The statistical analysis revealed that characteristics such as age, farm size, family size, annual income of the framers were not related to their effectiveness of mass media. This means that these characteristics were independent to the effectiveness of mass media of the farmers.

5.3 Recommendatons

Recommendations have been divided into two sub sections, viz. recommendations for policy implication and recommendation for further study.

5.3.1 Recommendation for policy implications

Based on the findings and conclusions of the study the following recommendations are presented below:

1. There is an urgent need for a sound communication media system for providing adequate innovative information to the farmers in order to adopt improved production technologies by the farmers.

2. The Department of Agricultural Extension (DAE), GOs and NGOs needs to pay more attention to ensure the use of mass media effectively. For some mass media specially electronic and print media seemed to have great impact in the diffusion of agricultural innovations.

3. Local leader should be strengthening in disseminating different technologies as it creates more confidence among the farmers through practical observation. So that the farmers will come to know about the new technologies frequently.

4. Farmers having more agricultural knowledge were more likely to have more adoption. It is recommended that the farmers' agricultural knowledge should be increased.

S. As a large number or farmers were illiterate arrangement should be made to provide non-formal education lo the farmers This will help to change knowledge, skill and general abilities, attitude as well as outlook of the farmers This may be through (i) establishing mass literacy schools at each and every village (ii) affording regular literacy programmes from the radio television and (iii) compulsory literacy programmes for members working in various societies/clubs working under the government and different Non-government Organization (NGOs).

6. Policy development is needed for improvement of the programmes broadcasted through television, radio and other mass media Technologies specific, area based and traditional folk based presentation style should be considered

7 Agricultural booklets, leaflets, magazines, poster, bulletins, feature in newspaper should be well circulated among the farmers. Sub-Assistance Agricultural Officer (SAAO), Opinion leader, Extension agents may take responsibility to distribute the farm publications to the framers since a great percentage of the farmers were literate.

8. Technical appropriateness is not only the criteria of technologies for which it is designed. It should also be socially appropriate and economically accessible so that it can be used and maintained in the local environment without causing any damage. It is necessary to give more emphasis to prepare effective action plan at the remote areas of Bangladesh.

5.3.2 Recommendations for future study

A small and limited research work has been conducted can not provide unique and universal information related to actual impact of improving socio-economic status of the rural farmers. Further studies should be undertaken related matters. On the basis of scope and limitations of the present study and observation made by the researcher, the following recommendations are made for further study.

1. As far as literature reviewed by the author, there is no evidence of any study so far has been conducted in this area. Further study should be under taken converting more activities of the farmers and farmer's opinion regarding the effectiveness of mass media.

2. Research should be undertaken to evolve principles and procedures for effectively focusing the information, activities and other matters about the modern rice cultivation technologies in the socio-cultural milieu of the country.

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

4. In the present study age and family size, farm size, annual income had no significant relationship with effectiveness of mass media adoption of nee production technologies. In this connection, further verification is necessary.

5. Research was limited on only 6 (six) mass media, but mass media are more and varied, so further research may be conducted including other mass media.

6. The effectiveness of mass media in getting farm information was conducted in two selected villages of Pirganj Upazila in Thakurgaon district. Findings of the study need verification by similar research in other parts of Bangladesh.

7. More research should be conducted to investigate the comparative effectiveness of different mass media and also identify the most effective media in adoption of rice production technologies.

References

ADB (1987). Agricultural Information Programme with Special Reference to Audio-Visual Mass Media. Executive Summary and Main Report. Bangkok, Thailand. 9: 75.

Adikarya, R. (1994). Strategic Extension Campaign: A Case study of FAQ's Experience. FAO, Rome, Italy.

Ahmed, M.D. (2000). Diversified use Urea Super Granule (USG) as a Short Period Drought Resistant Treatment. A Paper Presented at the Second National Workshop on USG Deep Placement technologies and Sustainable Agricultural in Bangladesh held at 108 Bhaban Auditorium, Sher-e-Bangla Nagar, Dhaka, 21 June 2000.

Ailin -Ton, J. (1991). Addressing the Information needs of farmers and the Extension Services: The Malaysian Experiment. *(Juarterly Bll/letill of JAALD.* 36(1&2): 36-39.

Alam, S.M.A. (2004). Extent of Use of Communication Media by the Farmers in Receiving Information on Winter Vegetable Cultivation. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Alam, M.M. (2004). Opinion of the Farmers on Effectiveness of Printed Materials in getting farm information. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Anisuzzaman, M. (2003). Use of Communication Media by the farmers the Adoption of Improved Rice Production technologies. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ania, P.J. (1986). Agricultural Information Provision in Nigeria, Information Development Department of Library Studies, University of Ibadan, Nigeria,

Alamin, S. (1997). Communication Exposure of the Farm Women in receiving Homestead Farming Information. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ayaz, M. (1991). Radio: A Supplement of Agricultural Development in Pakistan. *Rural Development Abstract.* 15(3): 8-9.

Annonymous. (2003). Professors Current Affairs. Dhaka: Professors Prokashon.

Aurangozeb, M. (2000). Diffusion of Agricultural Innovations in Village India. New Delhi: Wiley Eastern Limited. Economic Survey, India.

Bavalatti, V.G. and Sundaraswamy, B. (1990). " Adoption of Dry Land Farming Practices by the farmers of Bijapur District." *!11dia11 Journal of Extension Education.* 26(3& 4): 67-69.

BBS (2003). Monthly Statistical Bulletin, July, 2003. Bangladesh Bureau of Statistics. Ministry of Planning, Government of the People's Republic of Bangladesh.

BBS (2005). Statistical Year Book of Bangladesh. Bureau of Statistics. Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

BBS (2006). Bangladesh Economic Survey, Bangladesh Bureau of Statistics. Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

BBS (2004). Year Book of Agricultural Statistics of Bangladesh. Bangladesh Bureau of Statistics. Statistics Division, Ministry of Planning, Government of People's RepubLic of Bangladesh.

Batte, M.T., Schitke¥, G.D. and Jones, E. (1990). Source, Uses and Adequacy of Marketing Information for Commercial Midwestern Cash Grain Farmers. *North Central Journal of Agricultural Economics.* 12(2): 187-196.

Chough, P.K. (I 991). Communication through Mass Media. *Rural Development Abstract.* 15(3): 25 I.

Chidaanandappa, G. and Veerabhadraiah, S. (1988). Mass Media Utilization by Extension Personnel. Department of Agricultural Extension, University of Agricultural Science, Bangalore, Karantaka, India.

Chowdhury, M.S.A. (1999). Adoption of selected BfNA Technologies by the Farmers of Boyra Union Mymensingh District. M.S. (Ag.Ex.Ed.) Thesis, Department of Agricultural Extension, Bangladesh agricultural University, Mymensingh.

Chakraborty, D. (1992) A Study on the Importance of Radio as an Extension Medium among the Farmers. M.S. (Ag.Ext.Ed.) Thesis, Department or Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Dinampo, E.C. (1989). Communication Study of Corn Farmers in Bukidon Philippines. Central Mindanao University, Department of Development Communication, CM.U. *Journal <?!Science.* 2(I) 27-62.

DAE (1995). Agricultural Extension Manual. (June, 1995. revision). Department of Agricultural Extension, Ministry of Agriculture, Government of the People's Republic of Bangladesh.

DAE (2000). Guidelines for Upazila Partnership Initiatives Fund (revised). Department of Agricultural Extension. Ministry of Agriculture. Government of the People's Republic of Bangladesh.

De-Ia-Vegarn, M.B. (1990). "Communication Profile and a Prototype Communication Strategy to Promote Comprehensive Agrarian Reform Programme (CARP)". Beneficiaries Collage Laguna, Philippines.

Good, V.C. and Hatt, P.K. (1945) Method of Social Research. New York: Mc-Graw Hill Book Company.

Egbule, P.E. and Njoki, E.M.C. (2001). Mass Media Support for Adult Education in Agricultural in Southern igeria. Adult Education and Development, 56 179-186.

Ezekiel, M. and Fox, K.A. (1959). vlethods of Correlation and Regression Analysis, 3rd edition, New York: John Wily and Sons, Inc

FAO (2005) Food and Agricultural Organization Production year Book, 2005, Vol 54. FAO Statistics Series No. 163 Food and Agricultural Organization of United Nations, Rome, Italy

Farhad, A.K.M. (2003). Knowledge Attitude and Practices of Rural Women in using IPM Vegetable Cultivation M.S. (Ag Ext Ed.). Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Gogoi, S.K and Gogoi, D.K (1989) Adoption of Recommend Plant Protection Plan Protection in Rice: A Multiple Analysis" /11diall .lonrual of £xle11s1011 Education. 25(1&2): 26-29

Hossain, M.M. (2003). Farmers Knowledge and Adoption of Modern Soro Rice Cultivation Practices. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Ex-tension Education, Bangladesh Agricultural University, Mymensingh.

Hoque, M.S (1984). A Study of the Adoption of Improved Practices in Sugarcane Cultivation in Some Selected Areas of Jessorc District. M S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education., Banglades Agricultural University, Mymenshingh.

Hossain, M. (1999). Farmers' Perception of the Effects of Agro-chemical on Environment. M.S. (Ag.E:\1.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymenshingh

Halim, A. and Miah, M.A. M. (1996) "Appropriate Information Media for Communicating to Rural Farm Women" Proceeding of Workshops, Achievements of the Gender Research and Training Project, Bangladesh Agricultural Research Council (BARC). Farm gate, Dhaka, Bangladesh.

Hoque, M.M (1990). The Role of Development Communication in Agricultural: Status and Trends with Special Reference to Language, An Article Presented in Development Communication for Agricultural. B.R. Publishing Corp. New Delhi. India.

Haque, M.E. and Gupta, S (1996) Agricultural Extension Service in Bangladesh. Country Paper Presented in the Workshop Tehran, Iran

Hossain, M.A. (1971). Adoption of Improved Farm Practices by the Transplanted Aman Rice growers in Gazipur Union on Mymensingh District, M.S (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Hatch, J.C. and Sanders, H.C. (1966). Inter-Correlation among Dimensions of Message of Radio and Television Programme: Cluster Analysis, *Indian Journal of Extension Education*. 26(1 **&** 2). 65-68.

Hassanullah, M. (1985). Managing Extension Services Dhaka University Press Limited.

Hossain, M.M. (1996). Usefulness of Television as Agricultural Information Medium among the Farmers. M.S (Ag.Ext Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Hussen, M.A.M. (200 I). Farmers' Knowledge and Adoption of Modern Sugarcane Cultivation Practices. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Hawkins, H.S., Dunn A.M. and Cary J.W. (1982). Agricultural and Livestock Extension: Volume 2. The Extension Process. Canberra. Australian Universities' International Development Programme.

ILEI.A, (1991). Information Centre for Low-External input and Sustainable Agricultural Newsletter, 7(3) Leusden, Netherlands.

Islam, M.M. (1996). Farmers Use of Indigenous Technical Knowledge (ITK) in the Context of Sustainable Agricultural Development. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Islam, M.R. (1998). Effectiveness of Mati-0-Manush TV Programme in Dissemination Agricultural Information to the Television Viewer Farmers. M.S. (Ag.Ext.Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Islam, M.R. (1995). Use of Communication Media by the Farmers in Receiving Information on Rice Technologies. M.S. (AgExt.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ismail, N. (1979). Farmers Perception of Credibility of Interpersonal Sources of Development Information. MS. (Ag.Ext.Ed.) Thesis, UPLUB.

Islam, M.S. (2002). Adoption of Modern Agricultural Technologies by the Farmers in Sandwip. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Islam, M.A. (2005) Use of Printed Materials by the farmers in receiving Farm Information. M.S. (Ag.Ext Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Jagne, T.N. and Petet. A.V. (1981). Adoption of the Cotton Farmers in Producing Cotton in a Ten Country Area of North Central Texas, M.S. Thesis, Texas A. and M. University, U.S.A. p-116.

Kabir, M.K. and Bhattachargee, M.K. (1994) Impact of Radio and Television on Rural People, Bangladesh Academy of Rural Development (BARD), Comilla.

Kashem, M.A. and G.E. Jones. (1995). Small Farmers Contact with Information Sources and its Relationships with some Selected Characteristics. *Bangladesh Journa1 of Extension Education*. 3(1): 1-7.

Khan, M.M.R. (1996). Use of Information Sources by the *Poor* Farmers in receiving Information related to Cultivated Winter Vegetables. M.S. (Ag.Ex1.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ko, S.C.and kim, S.S. (1988). Watching Behavior of Rural Television Programme by Extension Workers. *Journal of Korean Agricultural Education*. **20(1)**: 45-52.

Kashern, M.A. and Jones, G.S. (1988). Small farmers Contact with Information Sources and its Relationships with some selected characteristics. *Bangladesh Journal of Extension Education*. 3(1): 1-7.

Kashem, M.A. and Halim, A. (1991). Use of Communication Media in the Transfer of Technologies to Farmers a Farm Level Study, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh and Bangladesh Agricultural Research Council, Dhaka.

Kumari, N. (1988). 'An Experimental Study on Effectiveness of Selected Six Media for Health Education. *Thesis Abstract*, Haryana Agricultural University, Hissar, India.

Khan, M.A. and Paracha, S.A. (1994). Interpersonal Communication Network in Diffusion of Innovations at Innovative and Non-innovative Villages. *Journal of Rural Development uud Administration*. 26(2): 79-88.

Kothari, C.R. (1994). Research Methodology: Methods and Techniques, 2"d ed. New Delhi, India.

Kalil, M. I. (1998). Information Sources Used by Farmers in Producing HYV Rice. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Institute of Post graduate Studies in Agricultural (IPSA), Salna, Gazipur.

Khan, M.A. (2002). Adopter Categories in Respect of Binasail Rice Variety in Two Selected Villages of Ghagra Union of Mymenshingh District. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymenshingh.

Lyttleton, C. (1994). Knowledge and Meaning: the ALDS Education Campaign in Rural North-East Thailand. *Social Science and Medicine*. 38(1):135-145.

Llabon, C.S. and Schefter, M. (1990). Successful Lab. Reports: A Manual for Science Students. Cambridge. Cambridge University Press. p. 23.

Ladedo, O.J., Kassal, B.I. and Banjioko, O.C. (1997). Effect of Radio Farm Broadcasts on Farmers Knowledge of Improved Farm Practices. *Journal of Extension Systems*. 13(1&2): 121-127.

Librero, F. (1973). An Attitude Study on the Radio Support of Masagana 99 Information Programme. Unpublished M.S. Thesis, UPCA.

Mia. M.A., Sarker, M.S. and Hamid, M.A. (1997). Use of Information Media by the Farmers in receiving Farm Information, *Bangladesh Journal of Agricultural Sciences*, Bangladesh Agricultural University Old boys Association. Bangladesh Agricultural University, Mymensingh.

Mollah, M.M. (2006). Communication Exposure of the Farmers in Relation to Rice Production Technologies. M.S. (AEIS) Thesis, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Mazher, A (2003). Role of Printed Media in the Dissemination of recommended Sugarcane Production Technologies among farmers in the central Punjab - Pakistan. *Indian Journal of Extension Education*. 3(2): 32-36.

Mekabutra, P. (1985). Farmers' Opinion towards receiving Knowledge in Agricultural from Mass Media in Chiyo District. Angthong Province. Bankok, Thailand.

Molinar, H., Marjoram, P. and Marjoram, T. (1994) Communication Technologies in whose Interests? Island- Technologies. Technologies for Development in the South Pacific. pp. 104-117.

Murrel, K.K. (1995). Communication Technologies Transfer in the Developed World. Control of Parasite Disease, Food Safety and the Environment Proceedings Advancement or Veterinary Parasitology. Yokohama, Japan

Nahar, N. (1996). Relationship of Selected Characteristics of the farm Women with Usefulness and Agricultural Radio Program and Homestead Farming Knowledge M.S (Ag Ext.Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Nataraju, M.S. and Channegowda, N.B. (1985). Source of Information Utilization for Adoption of improved Dairy Management Practices by Small, Marginal Farmers and Agricultural Laborers, *Indian journal of Exte11s1011 Education*. 3(4): 99-100.

Nuruzzarnan, M. (2003). Use and Preference of Mass Media in receiving Agricultural Information by the Farmers M.S (Ag Ext.Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Opare, K.D. (1980). Innovation Adoption Behavior or Ghana Cocoa farmers, Agricultural Administration, 7(4) 289-296. Department of Agricultural extension. Ghana University, Legan, Ghana

Orojobi, J.O. (1980). Source of Agricultural Inforrnation and Advice Available to Nigerian Farmers: Advantage and Limitation Ahmadu Bello University, Zaria, Nigeria.

Panya-Mekabutra, (1985). Farmers Opinion towards Receiving Knowledge in Agricultural from the Mass Media in Chiyo District, Angthong Province Bangkok.

Perianayagam, A and Arokiasarny, P (1002). Gender Preference Contraceptive use and fertility in India Regional and Development influences *Internauonal Journal of l>opl1lat1<JJl (ieoKraphy* 8(I) 49-6 7.

Perveen, S. (1995) Awareness of Farm Women on Environment Degradation due to use of some elected lodern Technologies ~IS (AgExt.Ed.) Thesis, Department of Agricultural Extension Education., Bangladesh Agricultural University, Mymcnsingh

Papa, A.G (1990) Intensity of Extension Contact and Innovativeness of Multiple Cropping Farmers in four upland Towns of Cavite, Philippines College, Lumguna, the Philippines

Podder, S K (J 999). Adoption of Mehersagar Banana by the Farmers of Gazipur Union under Sahkipur Thana of Tangail District. 1\l (Ag Ext.Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh

Paul, S.K. (2000) Attitude of the Farmers towards the Use of Urea Super Granule on Rice Cultivation in Abhaynagar Upazilla under Jessore District. M.S {Ag.Ext.Ed) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Vlymcnshingh.

Rahman, G.M (1995). Agricultural Information Bangladesh Half- Way between the Media and Mass Dept of vtass Communication and Journalism, Dhaka University *Journal of Development Colllllllllllicatioll (Malaysia)*. 6(2): 25-33.

Raj, R.K., Stapaihy. C and Das, P (1992) Possession and Use of Mass Media by Farmers. Dept. of Extension Education, Orisa University of Agricultural and Technologies. Bhubanncswar, Orisa, India.

Ray, G.L. (1991). Extension Communication and Management 3rJ ed. Kolkata Naya Prokash. p 185

Reisner, A.E. and Hays. R.G. (1989). Media Ethics and Agricultural: Advertiser Demands Challenge Farm press's Ethical practices. *Agricultural and Human Value.* 6(4): 40-46.

Rahim, A. (1961, 1965) Co-operative extension work, Dhaka. University Publishing Associates.

Reddy, G.Y. (1982). Role of Communication in Rural Development for Eradication of Rural Poverty. */11dw11 Journal of Regional Science.* **14(2):** 109-119

Rahman, M.M. (1996). An Investigation into the Factors Related to Adoption of Improved Farm Practices in Transplanted Aman Cultivation in two villages of Mymensingh District. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension and Teachers' Training, Bangladesh Agricultural University, Mymensingh.

Rogers, E.M. (1995). Diffusion of Innovations. 4th ed. New Work: The Free Press. p. 143.

Rogers, E.M. (1983). Diffusion of Innovations. 3rd ed. New Work: The Free Press. p. 133.

Satter, M.A. (2003). Food of all Future Agricultural Strategy of Bangladesh. The Independent, October 16, 2003.

Schramm, W. (1994). 'Mass Media and National Development', Stanford University Press, Califonia and UNESCO. Paris. p.151.

Sharnanta, R.K (1986). Effectiveness of Agricultural information Dissemination to Farmers through Agricultural Radio Programme. M.S. (Ag.Ext.Ed.) Thesis, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Sianturi, M. (1992). Communication Support, Resources and Structures of Small Holder Rubber Development Project and Adoption of Rubber technologies In Taluk Kuantan Unit Riau Province, Indonesia. Philippines College, Laguna, the Philippines.

Singh, I.B. and Sahey, B.N. (1990). Communication Behavior of Kiosi Farmers in Relation to High Yielding Varieties Programme, *Indian Journal of Extension Education*. 23(5): 34-39.

Sinha, A.K. (1985). Mass Media and Rural Development: A Study of Village Communication in Bihar. Concept Publishing Company, New Delhi, India.

Sarker, M.M. R. (1996). Effectiveness of Agricultural Information Disseminated to Farmers through Agricultural Radio Programme. M.S. (Ag.Ext.Ed.) Thesis. Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Supe, S.Y. (1997). An Introduction to Extension Education. 2nd ed. New Delhi: Oxford & IBH Publishing Co. Pvt Ltd

Thapa, S. and Mishra, Y (2003) Mass Media Exposure Among-Urban Youth in Nepal. *Asia Pacific l'op11/a11011./011mal*. 18(I). 5-28

Teoh, C.H. (1995). Extension Methods. Mass Approach, In Guide to Extension Method, FAO / UNDP / I IDB, Dhaka

Thomson, J.D. (1967). Organizations in Action, New York: MC Graw J lill, Inc

Townsend, J.C. (1953). Introduction of Experimental Methods: fnternational Student Edition. New York: McGraw-I lii! Book Company, Inc.

Ullah, A.K.M. (1996). Information Media Used by Vegetable Growers in Kashimpur Union Under Gazipur Sader Thana, M.S. (Ag.Ext.Ed.) Thesis. Department of Agricultural Extension Education, Inst itutc of Postgraduate Studies in Agricultural (IPSA), Salna, Gazipur.

Yan Veen, and Jaat, T. (1998). Integrated Pest Management. The World Bank Publications, Washington D.C. 20433. U.S.A.

Wate, F.N. and Riveria, W.M. (1991). New Technologies for Transferring Agricultural Information. School of Mass Communication. University Taounda, BP. 1328, Yaonda, Cameroon.

Westoff, C.F. and Rodriguez, G. (1995). "The Mass Media and Family Planning in Kenya". international Family Planning Perspectives. 21: 1.

Wabhitkar, P.H., Rathod, M.M., Goramnagar, M.D. and Sorte, P.N. (1998). Socio-Economic, Psychological and Communication characteristics of farmers in Adopting High Yielding Varieties. *Journal of Soils and Crop*. 8(I): 88-90.

English version of the interview schedule

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Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar
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An Interview schedule on the study of
Effectiveness of Mass Media in Adoption of Rice Production Technologies

Sample No:
Name of the respondent:
Village Name:

I. Age
   How old are you?   Years

2. Education
   Please mention your level of education
   a) Don't know reading and writing
   b) Can sign only
   c) I have passed   class.

3. Family size
How many members are there in your family?
a) Male   female
b) Total

4. Farm size
Please indicate how much land do you have?

Sl. No.	Land use/Type of land	Area Local unit	Hectare
I.	Homestead		
2.	Own land under own cultivation		
3.	Own land given to others on share cropping		
4.	Land taken from others on lease		
5.	Land taken from others on share cropping		
6.	Pond		
7.	Garden(Fruit & vegetable)		
8.	Total		

5. Annual Family income

Please indicate the income of you and your family members in the last year from different sources

(a) Agricultural sources

Source of income	Yearly production (mound)	Value /mound	Taka
1) Aus rice			
2) Aman rice			
3) Boro rice			
4) Wheat			
5) Jute			
6) Potato			
7) Pulse crops			
8) Oil crops			
9) Vegetables			
10) Fruits			
11) Spices			
12) Poultry			
13) Livestock			
14) Goat rearing			
15) Milk			
16) Egg			
17. Fish cultivation			
17) Others			
TotaJ			

(b) Non aaricultural sources

Source	Monthly incomc(Taka)	Yearly income(Taka)
1) Business		
2) Service		
3) Labour		
4) Bank interest		
5) Dadon business		
7) Others (if any)		
Total		

Annual Family income Total (a+b) =

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6. Wealth ownership:
Please provide the information on the following aspects-
a) Mention your total land (ha)

b) Agricultural equipments and machinery-

Items	Number	Yalue(taka)
a) Country plough		
b) Ladder		
c)Spraver		
d)Paddle thresher		
e)Foot lift pump		
f) Shallow tube well		
g) Power tiller		
Total		

c) Furruture and goods:

Item	number	Yalue(taka)
a)chair/ Chair/ Dress stand		
b) Bedstead		
c) Almirah,Box		
d) Bicycle	--	
e) Radio		
f) Motor cycle		
g) clock/watch		
h) Electric fan		
i) Television		
Total		

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7. **Organizational Participation**

Sl. No.	Name of institute	Nature of participation (years)			
		No. Participation	Ordinary member	Executive member	President/ Secretary
1.	School committee				
2.	Mosque/Temple committee				
3.	Rural arbitration committee				
4.	Bazar committee				
5.	Deep tube well Committee				
6.	NGO group				
7.	Grameen Bank Sangathan				
8.	Union parisad				
9.	Others				

8. **Innovativeness**

Please furnish information about the extent of uses of the following technologies

Sl. No.	Name of technologies	Degree of innovativeness				Do not use
		Within 1 year after hearing	Within 2 year after hearing	Within 3 year after hearing	Within 4 year after hearing	
1)	Use of green manure in rice field					
2)	Use of compost					
3)	Use of granular urea					
4)	Use of power tiller,					
5)	Use of Japanese Rice weedier					
6)	Use of Pedal Thresher					
7)	Use of light trap					
8)	Use of hybrid variety					
9)	Use of weedicide					
10)	Use of power pump					

9. Attitude towards modern agricultural technologies

Please give your opinion about the following information

SI. No.	Statements	Extent of agreement/disagreement				
		Strongly agreed	Agreed	No opinion	Not agreed	Strongly disagreed
1(+)	Recommended doses of fertilizers are necessary for increase in agricultural production.					
2(-)	It is not necessary to use improve variety to get more rice production					
3(+)	Irrigation is necessary for increasing in agricultural production.					
4(-)						
5(+)	Practicing modern agricultural technologies are very costly.					
6(-)	Healthy seed can increase Agricultural production.					
7(+)						
8(-)	Country plough is more effective than power tiller.					
9(+)	Organic manure improves soil fertility.					
10(-)	Line transplanting is not necessary for production.					
	Integrated Pest Management (IPM) is better than other management.					
	Disease do not cause any harm for crop production.					

10. Agricultural Knowledge:

Please answer the following question

Sl. No.	Questions	Weight score	Marks obtained
1.	Mention two HYV of rice	2	
2.	Mention two characteristics of good seed	2	
3.	Mention advantages of improved rice production technologies.	2	
4.	Mention two urea deficiency symptom of rice	2	
5.	Why cow dung and compost are used in crop cultivation	2	
6.	Mention two major insects of T-aman rice	2	
7.	Mention the name of two weeds of rice	2	
8.	Mention two beneficial insects of rice	2	
9.	What is IPM	2	
10.	Mention two control measures of insect except insecticide	2	
11.	Mention two example of mechanical control of rice	2	
12.	Mention advantages of rice-fish integrated culture	2	
13	What is light trap	2	
14	Mention two example of cultural control of rice	2	
15	Mention two important disease of rice	2	
	Total	30	

11. Stage wise effectiveness of mass media:
(a) Awareness stage:

Please mention how effective the following mass media in creating awareness in adoption of rice production technologies

Mass Media	Degree or awareness			
	Very effective	Effective	Less effective	Not effective
1) Farm Radio Talk				
2) Farm TV program (Mati-o-Mannush)				
3) Newspaper				
4) Poster				
5) Field day				
6) Opinion leader				

b) Persuasion   Stage:

Please mention how effective the following mass media in persuasion in
adoption of rice production technologies

	Degree of Persuasion		
Mass Media	Effective	Less effective	ot effective
1) Fann Radio Talk			
2) Farm TV program (Mati-o-Mannush)			
3) ewspaper			
4) Poster			
5) Field day			
6) Opinion leader			

c) Decision   tage:

Please mention how effective the following mass media in decision making
in adoption of rice production technologies

	Degree of Decision			
Mass Media	Very effective	Effective	Less effective	ot effective
1) Farm Radio Talk				
2) Farm TV program (Mati-o-Mannush)				
3) Newspaper				
4) Poster				
5) Field day				
6) Opinion leader				

d) Implementation Stage:

Please mention how effective the following mass media in Implementation in adoption of rice production technologies

Degree of Implementation

Mass Media	Very effective	Effective	Less effective	not effective
1) Farm Radio Talk				
2) Farm TV program (Mati-o-Mannush)				
3) ewspaper				
4) Poster				
5) Field day				
6) Opinion leader				

e) Confirmation Stage:

Please mention how effective the following mass media in Confirmation in adoption of rice production technologies

Degree of Confirmation

Mass Media	Ver) eflectiv c	Effective	Less effective	ot effective
1) farm Radio Talk				
2) Farm TV program (Mati-o-Mannush)				
3) ewspaper				
4) Poster				
5) Field day				
6) Opinion leader				

Thanks for your cooperation

Signature of the interviev•er

Date --------------------

	Age	Education	Family size	Farm size	Family Income	Wealth ownership	Organization participation	Innovative ness	Attitude	Knowledge	Effectiveness
Education (e) r	.113										
Sig	.238										
N	110										
Family size r	.254-	.166									
Sig	.007	.083									
N	110	110									
Farm size r	-.057	.116	.163								
Sig	.557	.229	.088								
N	110	110	110								
Family Income r	-.004	.057	.029	.000	1						
Sig	.965	.557	.764	.999							
N	110	110	110	110	110						
Wealth ownership r	.278..	.419**	.446 ..	.090	.181						
Sig	.003	.000	.000	.350	.058						
N	110	110	110	110	110	110					
Organization participation (ation) r	.200·	.578**	.315**	.161	.011	.416**					
Sig	.031	.000	.001	.094	.905	.000					
N	110	110	110	110	110	110	110				
Innovativeness (iveness) r	.329-	.400**	.334••	.091	.029	.474 ..	.464**				
Sig	.000	.000	.000	.344	.766	.000	.000				
N	110	110	110	110	110	110	110	110			
Attitude r	-.028	.186	-.130	-.047	.092	.022	.023	-.040			
Sig	.768	.051	.178	.624	.341	.817	.813	.682			
N	110	110	110	110	110	110	110	110	110		
Knowledge (edge) r	.186	.643 ...	.231*	.174	-.009	.457 ..	.398 ...	.373 ..	.017		
Sig	.051	.000	.015	.069	.926	.000	.000	.000	.859		
N	110	110	110	110	110	110	110	110	110	110	
Effectiveness (iveness) r	-.003 NS	.450...	.038 NS	.092 NS	.020 NS	.304 ..	.301-	.323 ..	.059 NS	.387 ..	
Sig	.971	.000	.691	.341	.836	.001	.001	.001	.543	.000	
N	110	110	110	110	110	110	110	110	110	110	110