KNOWLEDGE AND ATTITUDE OF THE FARMERS TOWARDS TOBACCO CULTIVATION IN SELECTED AREA OF RANGPUR DISTRICT

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By

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CERTIFICATE

This is to certify that the thesis entitled "KNOWLEDGE AND ATTITUDE OF THE FARMERS TOWARDS TOBACCO CULTIVATION IN SELECTED AREA OF RANGPUR DISTRICT" submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of Master of Science in Agricultural Extension and Information System, embodies the result of a piece of bona fide research work carried out by MOTABBER RAHMAN, Registration No. 11-04588 under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

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

Dated:
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Dedicated
To
My Beloved Parents

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The Author

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ACRONYMS AND ABBREVIATIONS

Ag. Ext. and Info. Sys	Agricultural Extension and Information System
AIS	Agriculture Information Service
BAU	Bangladesh Agricultural University
BBS	Bangladesh Bureau of Statistics
BRRI	Bangladesh Rice Research Institute
DAE	Department of Agriculture Extension
DAE	Department of Agricultural Extension
FAO	Food and Agriculture Organization
MoYS	Ministry of Youth and Sports
SAAO	Sub-Assistant Agriculture Officer
SAU	Sher-E-Bangla Agricultural University

KNOWLEDGE AND ATTITUDE OF THE FARMER TOWARDS TOBACCO CULTIVATION IN SELECTED AREA OF RANGPUR DISTRICT

By

MOTABBER RAHMAN

ABSTRACT

The specific purpose of this research was to determine farmers' knowledge and attitude towards tobacco cultivation and also to explore the relationships between each of nine selected characteristics of the farmers and their knowledge and attitude towards tobacco cultivation. The study was conducted in 2 villages of Badarganj upazila under Rangpur district. The populations of tobacco farmers in two villages were 364, from which a sample of 109 (30% of population) farmers were drawn by using random sampling technique. An interview schedule was used for data collection. The data were collected during January 16 to February 4, 2018. Majority (94.5%) of the farmers possessed high knowledge and 5.5 and 32.1 percent of the farmers possessed low and medium knowledge on tobacco cultivation respectively. Regarding attitude, it was found that about 49.54% of the respondents had favorable attitude, 11.92% of the respondents had unfavorable attitude and 38.53% of the respondents had neutral attitude towards tobacco cultivation. Level of education, farm size and extension contact of the tobacco farmers had significant positive relationship and problem faced by the tobacco farmer had negative significant relationship with their knowledge on tobacco cultivation, while age, annual income, income from tobacco, organizational participation, cosmopoliteness had no significant relationship with their knowledge on tobacco cultivation. Again level of education, farm size, annual income, and income from tobacco, organization participation, cosmopolitenesss and extension contact of the farmers had significant positive relationship with their attitude towards tobacco cultivation, while age and problem faced by tobacco farmers had no significant relationship with their attitude towards tobacco cultivation.

CHAPTER I

INTRODUCTION

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1.1 General Background

The Government of Bangladesh has taken many strong initiatives to reduce tobacco use in Bangladesh. In 2003, the Government signed the World Health Organization (WHO) Framework Convention on Tobacco Control, followed by ratification of the Convention in 2004. In 2005, the Government passed a comprehensive tobacco control law, and in 2006, passed the rules to accompany the law. The main focus of government policy has been on demand-side measures. Reducing supply will not necessarily lead to a reduction in tobacco use, as tobacco is also imported from other countries. However, the plight of low income tobacco farmers merits further attention, as do the negative impacts of tobacco growing on farmers' health and on the fertility of the land.

Tobacco appears to be as old as human civilization. Cultivation of the tobacco plant probably dates back 8000 years when two species of the plant, *Nicotiana rustica* and *Nicotiana tabacum,* were dispersed by American Indians through the southern and northern American continent (Luthra *et al*., 1992). Tobacco seeds were discovered in archaeological excavations in Mexico and Peru, and the remains of permanent settlements build around 3500 BC showed that tobacco was an important article to the inhabitants (Luthra *et al*., 1992). Tobacco belongs to the family of plants called solanaceae or the night shade family and the genus *Nicotiana.*

Tobacco was introduced into India by Portuguese traders during AD 1600. Its use and production proliferated to such a great extent that today India is the second largest producer of the tobacco in the world. Soon after its introduction, it became a valuable commodity of barter trade in India. Trade expanded and tobacco spread rapidly along the Portuguese trade routes in the East, via Africa to India, Malaysia, Japan and China. During this period, the habit of smoking spread across several

South Asian countries (Sanghvi, 1992).Tobacco has developed as a cash crop because-

1. Tobacco has been contributing substantially to the total agricultural income.
2. It yields high net returns per unit of cultivation as compared to other crops.
3. It provides employment opportunities, both in agriculture and activities involved in the manufacture of tobacco products.
4. It is a major foreign exchange earner.
5. There is considerable domestic and international demand for tobacco and its products.

Although tobacco was grown in many part of Bangladesh during 1950s, the best quality crop was grown in Chittagong, Kushtia, Bandarban, Rangpur, Dinajpur and Cox's bazar districts.

In Bangladesh overall, from 1990 to 2003, there was a gradual decline in tobacco cultivation. Despite the overall decline, there are indications of increases in production in various local areas. For example, in 1995–96, Bandarban, a hilly district in southwest Bangladesh, had about 300 acres of land under tobacco cultivation. By 2002– 03, this figure had risen to 1810 acres – an increase of 600%. During the same period, another district of Bangladesh, Kushtia, saw an increase in tobacco acreage from about 13200 acres to more than 20000 acres. In the northern district of Rangpur, about 48000 acres of land is devoted to tobacco farming.

1.2 Justification of the Study

The major focus of the study is to assess the knowledge and attitude of the farmers regarding cultivation of tobacco. Nowadays, Tobacco cultivation has been found becoming popular in our country for its business prospect. Its profit is approximately double than its cultivation cost. For this reason tobacco cultivation is gradually increased day by day. The country can earn huge foreign currencies by exporting tobacco and its products. Non-government organizations are currently putting effort

and allocating resources for production oriented research and also encouraging both rural and urban people to undertake tobacco cultivation. So, evaluation of knowledge and attitude of the concerned farmers is necessary for the further development of tobacco cultivation in Bangladesh. Considering the above fact, the researcher became interested to undertake a study to determine knowledge and attitude of the farmers regarding tobacco cultivation.

1.3 Statement of the Problem

Based on the above discussion, this study was intended to explore the following questions:

1. What were the characteristics of the tobacco farmers?
2. What was the extent of knowledge and attitude of farmers regarding tobacco cultivation?
3. Is there any relationship of the farmers' selected characteristics on their knowledge and attitude regarding tobacco cultivation?

1.4 Specific Objectives:

The following specific objectives were formulated in order to give proper direction of the study.

1. To describe the following selected characteristics of the farmers:
    - Age,
    - Education,
    - Farm size,
    - Annual family income,
    - Income from tobacco,
    - Organizational participation,
    - Cosmopoliteness,
    - Extension media contact,
    - Problem faced by the farmers in Tobacco cultivation,

2. To assess the extent of farmers' knowledge and attitude of Tobacco cultivation.
3. To explore the relationship of the farmers' selected characteristics on their Knowledge and attitude towards Tobacco cultivation

1.5 Assumption of the Study

The researcher had the following assumptions in mind while undertaking this study:

1. The selected respondents were competent enough to reply the queries made by the researcher.
2. The responses furnished by the respondents were valid and reliable.
3. Information furnished by the respondents included in the sample was the representative opinion of the whole population of the study area.
4. The researcher who acted as interviewer was well adjusted to social and environment condition of the study area. Hence, the data collected by him from the respondents were free from bias.

1.6 Limitation of the Study

In order to make the study manageable and meaningful from the point of view of research, it was necessary to state the limitations of this study, which are given as follows:

1. The study was confined to two selected villages of Badarganj Upazila under Rangpur district.
2. The characteristics of the respondents farmers in the study area were many and varied but only 9 characteristics were selected for examining their relationship on their knowledge and attitude regarding tobacco cultivation.
3. The researcher relied on the data furnished by the tobacco farmers' from their memory during interview.

4. For some cases, the researcher faced unexpected interference from the over interested side-talkers while collecting data from the target populations. However, the researcher tried to overcome the problem as far as possible with sufficient tact and skill.

5. Various problems in tobacco cultivations are likely to be faced by the farmers. However, only 15 problems have been considered for investigation in this study.

1.7 Definition of Related Terms

In this section, the terms which have been frequently used throughout the thesis are defined and interpreted below:

Age

Age of a respondent is defined as the span of his/her life and was operationally measured by the number of years from his/her birth to the time of interview.

Education

Education referred to the development of desirable change in knowledge, skill, attitude and ability in an individual through reading, writing, working, observing and other related activities. It was measured on the basis of classes a farmer has passed from a formal educational institution.

Farm size

Farm size referred to the cultivated area either owned by the farmer or obtained from others on borga system, the area being estimated in terms of full benefit and half benefit to the farmer respectively. The self-cultivated owned land and cultivated area taken as lease or mortgage from others was recognized as full benefit. In this study farm size was measured in hectare.

Annual family income

The term annual family income referred to the total earning by the earning members of a farm family from agriculture, livestock, fisheries and other accessible sources

(business, service, daily labor etc.) during a year. It was expressed in Thousand Taka.

Extension contact

It refers to an individual's (farmer) exposure to or contact with different communication media, source and personnel being used for dissemination of new technologies.

Problem faced on tobacco cultivation

Problem referred to a difficult situation about which something to be done. It referred to the extent of problems faced by a respondent in tobacco cultivation in terms of problems.

Knowledge on tobacco cultivation

It referred to the extent of basic understanding of the farmers in different aspects of tobacco cultivation i.e. varieties, soil condition, seed rate, suitable time for cultivation, fertilizers, diseases, insects, fungicides, harvesting time etc.

Attitude towards tobacco cultivation

Attitude is the mental predisposition of an individual to act in a particular way. In other words, it refers to one's favorable or unfavorable feelings, beliefs, and actions towards an object and concept. Attitude towards the tobacco cultivation refers to one's feeling towards the cultivation of tobacco in various aspects.

CHAPTER II
REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

This chapter deals with the reviews of past works that relates to the present investigation directly or indirectly. The researcher intensively searched internet, websites, available books, journals and printed materials from different sources of home and abroad. But found no studies related directly or indirectly to the tobacco cultivation. However, the literatures have been organized into following four sections to set the context of the study:

First section : Concept of Knowledge and Attitude.

Second section : Relationships between selected characteristics of the respondents and their knowledge on innovations.

Third section : Relationships between selected characteristics of the respondents and their attitude towards innovations.

Fourth section : Conceptual framework of the study.

2.1 Concept of Knowledge and Attitude

2.1.1 Concept of knowledge

According to Wikipedia "Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning. It can refer to a theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); it can be more or less formal or systematic". According to Oxford dictionary "facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject."

Bhuiyan (2012) indicated that "Knowledge may be defined as the scientific fact of an idea which is experimentally or empirically verified."

Boudreau (1995) indicated “Human faculty resulting from interpreted information; understanding that germinates from combination of data, information, experience, and individual interpretation. Variously defined as, Things that are held to be true in a given context and that drive us to action if there were no impediments."

2.1.2 Concept of attitude

Attitude, in social psychology, is a predisposition to classify objects and vents and to react them with some degree of evaluative consistency while attitude logically is a hypothetical constructs (i.e., they are inferred but not objectively observable), they are manifested in conscious experience, verbal reports, gross behavior and physiological symptoms.

The concept of attitude arises from attempt to account for observed regularities in the behavior of individual persons. The quality of one’s attitude is judged from the observable, evaluative responses he tends to make (Encyclopedia Britannica, 1960).

Different persons have defined attitude in different words. Some of these are mentioned below:

According to Bhuiyan (2012) “Attitude may be thought of as a person’s perspective toward a specific target and way of predisposition to act, perceive, think and feel in relation to something’s. It is expressed as one’s views regarding an object as positive or negative, favorable or unfavorable, like or dislike etc. with varying degrees”

Thurstone (1928) defined attitude as the effect for or against a psychological object.

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

According to Morgan, Holmes and Bundy (1929) attitude means one's feeling towards persons, ideas, institution, and practices of facts.

Sherif and Sherif (1956) defined the term attitude as a relatively stable tendency to respond with a positive or negative affect to a specific referent.

Doob (1948) stated that attitude affects behavior since an implicit, drive producing response considered socially significant in the individual society. If this definition is broken down typographically into phases and clauses, an attitude implies the following.

a. It is an implicit response.
b. It is both (a) anticipatory and (b) mediating reference to patterns of covert responses.
c. It is evoked by (a) a variety of stimulus patterns (b) as a result of previous learning, or of gradients of generalization and discrimination.
d. It is itself a cue and drive producing.
e. It is considered socially significant in the individual's society.

According to Alport (1935), an attitude is that disposition to act which is built up by the integration of numerous specific responses of similar type, but which exists as a general neutral set when activated by a specific stimulus; it results in behavior that is more obviously a function of the disposition than of the stimulus. According to him, the chief weakness of the most of the definition lies in their failure to distinguish between attitudes, which are often very general, and habits, which are limited in their scope. However, it is justified to admit that, in spite of existence of disagreements among psychologists, they contributed towards securing greater agreement in future.

2.1.3 Past related research on knowledge

Mandal (2016) found that, Majority (64.3 %) of the farmers possessed ‘medium knowledge’ while 20.7 and 15.0 percent of the farmers possessed ‘low’ to ‘high knowledge’ respectively in watermelon cultivation.

Rahman (2015) studied on knowledge of Salt Tolerant Variety (BRRI dhan 47) Of Rice and found that majority (81 %) of the farmers had Medium level of knowledge

and 5 % of the farmer had low level of knowledge and 22 % percent of the farmers possessed relatively high level of knowledge.

Mondal (2014) studied on knowledge of Strawberry Cultivation and found that majority (54 %) of the farmers had Medium level of knowledge and 27.4 % of the farmer had low level of knowledge and 14.6 % of the farmers possessed relatively high level of knowledge.

Monalesa (2014) studied on knowledge of Summer Tomato cultivation and found that majority (52.4 %) of the farmers had high level of knowledge and 42.6 % of the farmer had medium level of knowledge and 5 % of the farmers possessed relatively high level of knowledge.

Azad (2014) found that, 56 percent of the respondents felt in medium knowledge category followed by 35.8 percent in high knowledge category and only 8.3 percent in low knowledge category in knowledge on postharvest practices of vegetables.

Abdullah (2013) found that, the majority 44.6 percent of the pond farmers' possessed medium knowledge, 25.7 percent of the pond owners possessed high knowledge and only 16.8 percent of the pond owners had low knowledge and 12.9 percent of the farmers possessed very high knowledge.

Hassan (2004) reported that the highest proportion of the respondents had medium knowledge on partnership extension approach (70.4 percent) followed by 16.9 percent had low knowledge an 13.3 percent had high knowledge.

Sana (2003) studied farmers' knowledge of shrimp culture and showed that majority (61 percent) of them had medium level of knowledge, while 30 percent had low and rest 9 percent possessed high knowledge.

Saha (2001) made an attempt on farmers' knowledge in improved practices of pineapple cultivation and found that the majority (62 percent) of the farmers possessed good knowledge, 33 percent poor knowledge and only 5 percent possessed excellent knowledge.

Hussen (2001) found in his study on farmers' knowledge and adoption of modern sugarcane cultivation practices found that highest proportion (84 percent) of the farmers possessed medium knowledge, 13 percent high knowledge and lowest proportion (3 percent) possessed low knowledge.

Rahman (2001) found in his study that the highest proportion (62.22 percent) of the respondents had medium knowledge compared to 25.56 percent having low knowledge and only 12.22 percent had high knowledge on HYV boro rice cultivation practices.

2.1.4 Past related research on attitude

Rahman (2015) found that greater majority (77.78 %) of the Salt Tolerant Variety (BRRI dhan 47) Of Rice had High favorable attitude and 22.22 % had low favorable attitude toward BRRI dhan 47 cultivation.

Mondal (2014) found that greater majority (51.3 %) of the Strawberry growers had medium favorable attitude and 40.7 % had low favorable attitude toward Strawberry cultivation. Only 5.3 % of them possessed highly favorable toward Strawberry cultivation. And 0.9 % had unfavorable attitude toward Strawberry cultivation.

Monalesa (2014) found that greater majority (49.5 %) of the Summer Tomato Cultivation had favorable attitude and 37.6 % had unfavorable attitude and 12.9 % of them possessed neutral attitude toward Summer Tomato Cultivation.

Sarker (2002) found that greater majority (62 percent) of the rice growers had moderately unfavorable attitude and 27 percent had favorable attitude toward the use of DAP in rice field. Only 11 percent of them possessed highly favorable attitude towards the use of DAP in rice field.

Mannan (2001) conducted a study on attitude of Proshika farmers towards the ecological agricultural programme (EAP) and found that majority of the Proshika farmers (57.3 percent) had moderately favorable attitude towards the EAP while 12.7 percent and 30 percent had slightly and highly favorable attitude towards EAP respectively.

Sarker (2001) in his study found that 64 percent farmers showed moderately favorable attitude towards Organic Homestead Gardening Programme (OHGP) of World Vision. Further 20 percent and 16 percent held slightly and highly favorable attitude towards OHGP respectively.

Akanda (2001) found in his study that 66 percent and 22 percent of farmer had moderate and slightly favorable attitude towards Rice-Fish Program of CARE. On the other hand, only 12 percent farmers had highly favorable attitude towards rice-fish program.

2.2 Relationship between Selected Characteristics of the Farmers and their Knowledge

2.2.1 Age and knowledge

Mondal (2014) , Rahman (2015) , Monalesa (2014) , Saha (2003), Sana (2003), Sarker (2002), Saha (2001), Rahman (2001), Hossain (2000) found no relationship between age and knowledge in their studies.

As per Roy (2006) age of the farmer had no significant connection with their knowledge on boro rice cultivation. Comparative outcomes were seen by Khan (2005), Islam (2005) and Rahman (2004) in their individual examinations.

Hossain (2003) observed in his study that the age of farmers had no noteworthy relationship on modern Boro rice cultivation practices.

Amin (2001) saw in his examination that period of PETRRA and non-PETRRA recipients had negative significant connection with their knowledge on organic cocoon and skills on production, processing, storing of seeds.

Hanif (2000) found in his study that age of FFs farmers had significant association with IPM knowledge on environmental awareness.

Islam (1993) in his research finished up that age of the BSs had no significant relationship with their knowledge on modern agricultural technologies.

Rahman et al. (1988), Chandargi (1980) discovered positive significant connection amongst age and knowledge in their research.

2.2.2 Level of education and knowledge

Mondal (2014), Rahman (2015), Saha (2003), Sana (2003), Sarker (2002), Saha (2001), Hossain (2000) found that education of the farmers was positively and significantly related with their knowledge in their research work.

Azad (2014) in his study concluded that level of education of the farmers had significant relationship with their knowledge on postharvest practices of vegetables.
Abdullah (2013) in his study concluded that level of education of the farmers had no significant relationship with their knowledge on pond fish culture.

Hossain (2003) found that education of the farmers had significant relationship with modern boro rice cultivation.

Amin (2001) saw in his examination that period of PETRRA and non-PETRRA recipients had negative significant connection with their knowledge on organic cocoon and skills on production, processing, storing of seeds.

Alam (1997) watched that the level of education of the farmers had a positive and noteworthy relationship with the use of enhance cultivate rehearses.

Kashem (1987) in his study revealed that there was no significant relationship between education of the farmer and their agricultural knowledge.

2.2.3 Farm size and knowledge

Mondal (2014), Rahman (2015), Monalesa (2014), Sana (2003), Hossain (2000) observed that farm size of the farmers had no relationship with their knowledge.

Azad (2014) in his study concluded that farm size of the farmers had no significant relationship with their knowledge on postharvest practices of vegetables.

Hossain (2001) , Sarker (2002) found that there was a positive relationship between farm size of the farmers and their knowledge in their research.

Hossain (2003) reported that farm size of the farmers had significant relationship with modern Boro rice cultivation.

Alam (1997) studied the use of improved farm practices farm in rice cultivation by the farmers. The findings of the study showed that the farm size had a significant relationship with their use of improved farm practices in rice cultivation. Similar results were found by Verma and Kumar (1991).

Islam (1996) found that there was significant and negative relationship between the farm size of the farmers and their extent of use of indigenous technical knowledge.

2.2.4 Annual family income and knowledge

Mandal (2016) in his study concluded that annual family income of the farmers had significant relationship with their knowledge on watermelon cultivation.

Mondal (2014), Rahman (2015), Monalesa (2014) observed that Annual family income of the farmers had possitive relationship with their knowledge.

Azad (2014) in his study concluded that annual family income of the farmers had no significant relationship with their knowledge on postharvest practices of vegetables.

Hossain (2003) reported that farm size of the farmers had significant relationship with modern Boro rice cultivation.

Nurzzaman (2000) found that incomes of the rural women farmers had no relationships with their knowledge of the FFS and non-FFS farmers.

Islam (1996) found that there was significant and negative relationship between the farm size of the farmers and their extent of use of indigenous technical knowledge.

2.2.5 Income from tobacco cultivation and knowledge

Mandal (2016) in his study concluded that income from watermelon cultivation of the farmers had significant relationship with their knowledge on watermelon cultivation.

Abdullah (2013) in his study concluded that income from fish farming of the farmers had no significant relationship with their knowledge on pond fish culture.

Azad (2013) found that there was Income from vegetable cultivation had a positive and no significant relationship with knowledge on postharvest practices of vegetables.

Islam (2002) found that there was Income from vegetable cultivation had a positive and substantial significant relationship with knowledge on vegetables production activities by women members in homestead area under world vision project.

2.2.6 Extension contact and knowledge

Mondal (2014) , Rahman (2015) , Monalesa (2014) , Saha (2003), Sana (2003), Sarker (2002), Saha (2001), Rahman (2001), Hossain (2000) found in their study that media exposure of farmers were highly positive significant relationships with their knowledge.

Abdullah (2013) in his study concluded that extension contact of the farmers had no significant relationship with their knowledge on pond fish culture.

Hossain (2000) concluded that media exposure of the farmers had a significant relationship with their knowledge.

2.2.7 Problem faced on tobacco cultivation and knowledge

Mandal (2016) in his study concluded that problem faced in watermelon cultivation of the farmers had negatively significant relationship with their knowledge on watermelon cultivation.

Mondal (2014), Rahman (2015), Monalesa (2014) found in their study that Problem faced of farmers were positive significant relationships with their knowledge.

Azad (2014) in his study concluded that problem faced in vegetable cultivation of the farmers had negatively significant relationship with their knowledge on postharvest practices of vegetables.

Abdullah (2013) in his study concluded that problem faced of the farmers had negatively significant relationship with their knowledge on pond fish culture.

Ali (1999) concluded that problems of the farmers had a significant relationship with their knowledge.

Anwar (1994) concluded that problems of the farmers had no significant relationship with their knowledge.

Raha (1989) concluded that problems of the farmers had no significant relationship with their knowledge.

2.3 Relationship between Selected Characteristics of the Farmers and their Attitude

2.3.1 Age and attitude

Mannan (2001), Parveen (1993), Verma and Kumar (1991) found that age of the respondents had positive relationship with their attitude towards ecological agriculture.

Tarannum (2013) found that age of the farmers' had positive significant relationship with their attitude towards improved agricultural implements.

Noor-E-Alam (2010) found in his study on farmers attitude towards modern jute cultivation that age had no relationship with attitude. Bhuiyan (2008), Zahan (2008), Islam (2007) and Chowdhury (2003) found similar result in their study.

Bhuiyan (2008) found that age of the farmers' had negative significant relationship with their attitude towards organic cultivation of HYV of rice. Ali (2002) found similar result in his study.

Both Chowdhury (2003) and Sarker (2002) found in their study that there is no relationship between age and attitude.

Chowdhury (2003) found that age of farmers' had no significant relationship with their attitude towards crop diversification.

Sarker (2002) found that age of the World Vision farmers had no significant relationship with their attitude towards organic homestead gardening practices.

Ali (2002), Singh and Kunzroo (1985) found that age of the farmers had negative significant relationship with their attitude in their research studies.

Kashem (1987) in his study also found that there was no relationship between the age and attitude towards community of the farmers.

Habib (2000) found that age of the BSs had no significant relationship with their attitude towards the use of agro-chemicals.

Paul (2000) found that there was negatively significant relationship between age of the farmers and their attitude towards the use of USG.

2.3.2 Level of education and attitude

Mondal (2014) , Rahman (2015) , Monalesa (2014) ,Chowdhury (2003), Shehrawat (2002), Khan (2002), Kumari (1988), Sulakshna (1988) and Kashem (1987) found that education of the farmers had a positive significant relationship with their attitude.

Bhuiyan (2008) and Zahan (2008) found a positive significant relationship between education and attitude. Chowdhury (2003) revealed similar result intheir study.

Islam (2007), Noor-E-Alam (2010) and Tarannum (2013) revealed that education of farmers' had no significant relationship with their attitude.

Shehrawat (2002) reported in his article a significant and positive relationship between education and attitude of farmers towards diversification of farming.

Kashem (1987) found that attitude towards community of the small farmers had significant positive correlation with their education level.

Khan (2002) in a study revealed that education of PROSHIKA beneficiaries hold positive significant relationship with their attitude towards in Social Forestry Programmes.

2.3.3 Farm size and attitude

Chowdhury (2003), Shehrawat *et al.* (2002) and Sadat (2002) found that there was a positive and significant relationship between farm size and attitude of farmers in their studies.

Tarannum (2013) revealed in his study that farm size of the farmers had no relationship with their attitude towards improved agricultural implements. Hussain (2001), Islam (2007), Zahan (2008), Bhuiyan (2008) and Noor-E-Alam (2010) also found similar result in their study.

Bhuiyan (2008) revealed in his study that farm size of the farmer's hadnegative significant relationship with their attitude towards farmers' information need assessment.

Chowdhury (2003) found that there was a positive and significant relationship between farm size and attitude of farmers towards crop diversification.

Sadat (2002) found in his study that farm size had positive significant relationship with attitude of both PROSHIKA beneficiaries and non-beneficiaries towards PROSHIKA.

Ali (2002) revealed in his study that farm size had no significant relationship with the attitude of BS towards the activities of NGO. The study of Khan (2002) and Sarker (2002) also revealed similar kind of relationship in their respective studies.

Afrad (2002) also found similar kind of result in their respective studies. Paul (2000), Mannan (2001) and Karim *et al.* (1987) obtained similar findings in their respective studies.

Karim *et al.*(1987) carried out a study on attitude of farmers towards use of urea in jute cultivation and found that farm size of the farmers had significant and positive relationship with their attitude towards the use of urea.

2.3.4 Annual family income and attitude

Mondal (2014), Rahman (2015), Monalesa (2014) and Rabby (2014) reported that family income of farmers had positive significant relationship with their attitude.
Tarannum (2013) reported that annual income had no significant relationship with the attitude of farmers towards improved agricultural implements. Bhuiyan (2008) and Siddique (2002) also found similar result in their study.

Also Chowdhury (2003), Shehrawat (2002) and Das (1963) reported that family income of farmers had positive significant relationship with their attitude.

Siddique (2002) and Parveen (1993) revealed that annual income had no significant relationship with the attitude of farmers in their studies.

Mannan (2001) observed in his study that there was positive significant relationship between the family annual income and their attitude towards the Ecological Agriculture Programmes.

Paul (2000) reported that annual family income of the farmers had positively significant relationship with their attitude towards use of USG.

Kashem (1987) also found that income of the small farmers had no significant relationship with their attitude towards community of the farmers.

2.3.5 Income from tobacco cultivation and attitude

Rahman (2015) found that income from rice cultivation had positive significant relationship with their attitude.

Mondal (2014) found that income from strawberry cultivation had positive significant relationship with their attitude.

2.3.6 Extension contact and attitude

Rabby(2014) **,** Shehrawat (2002), Sadat (2002) and Siddique (2002) reported in their studies that there was a significant and positive relationship between extension contact and attitude of farmers.

Bhuiyan (2008) reported a significant and positive relationship between extension contact and attitude.

Islam (2007) found in the study of attitude of farmers' towards modern jute cultivation that there was negative significant relationship between extension media contact and attitude.

Chowdhury (2003) observed no relationship between extension media contact and attitude of farmers towards crop diversification.

Bari (2000) also reported that there is no relationship between extension media contact and attitude of farmers towards hybrid rice ALOK 6201.

2.3.7 Problem faced on tobacco cultivation and attitude

Mondal (2014), Rahman (2015), Monalesa (2014) and Rabby(2014) revealed that Problem faced by the farmers" had negative significant relationship with their attitude towards farmers information need assessment.

Bhuiyan (2008) revealed that Problem faced by the farmers" had negative significant relationship with their attitude towards farmer's information need assessment.

Karim et al. (1997) found that issues of the farmers had a significant connection with their attitude. And similar result found Muttaleb (1998) in his study.

2.4 Conceptual Framework of the Study

Based on the above reviews of literature the present study is made to explore farmers' knowledge and attitude towards tobacco cultivation. Thus the knowledge and attitude were the main focus of the study and nine (9) selected characteristics of the farmers' were considered as those might have relationship with knowledge and attitude. Farmers' knowledge and attitude towards tobacco cultivation may be influenced and affected through interacting forces of many independent factors. It is not possible to deal with all the factors in a single study. Therefore, it was necessary to limit the factors, which included age, education, farm size, annual family income, Income from tobacco, organizational participation, cosmopoliteness, extension contact, problem faced for tobacco cultivation. The conceptual framework of the study has been presented in Fig. 2.1 .

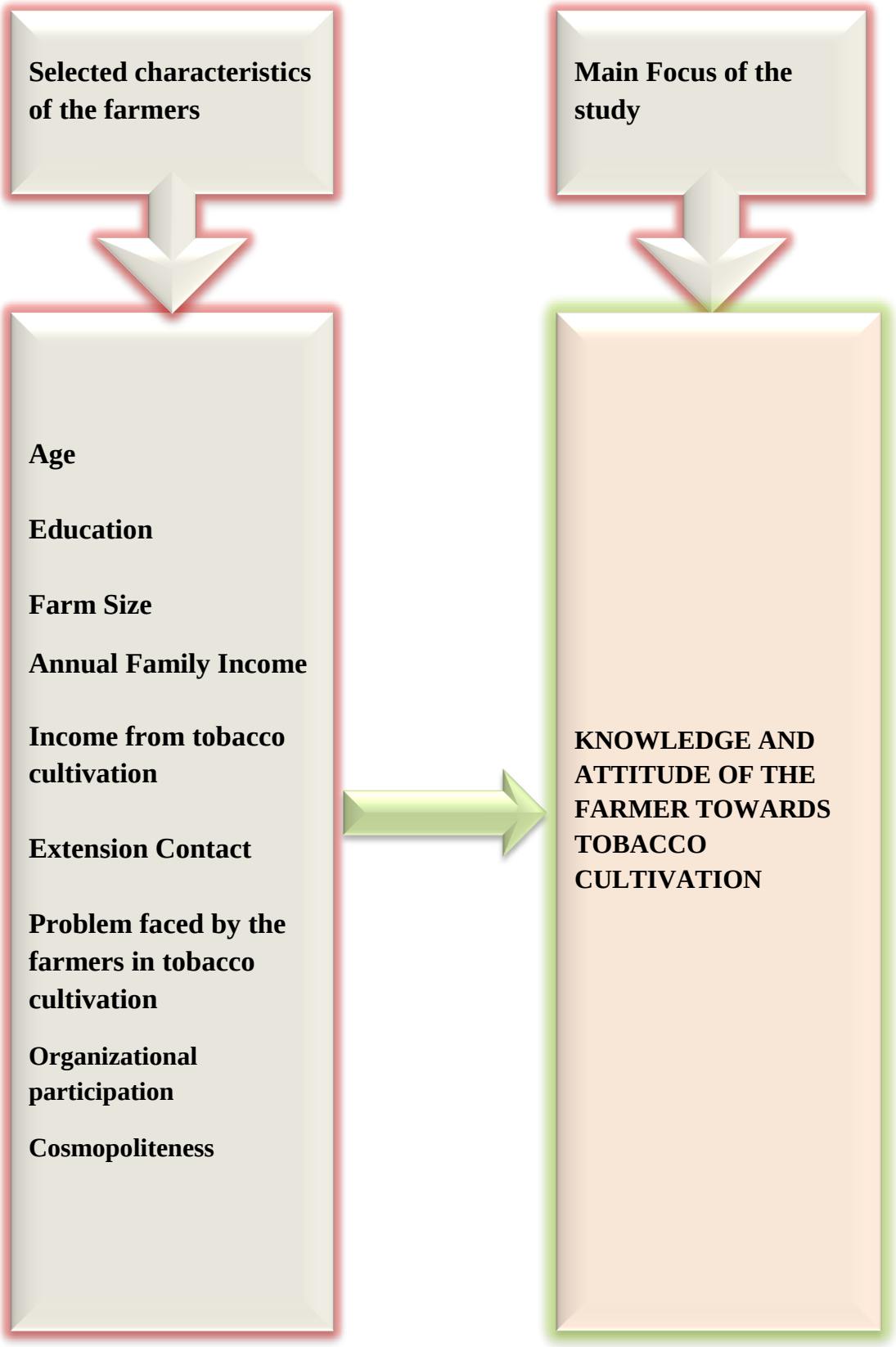


Figure 2.1 the conceptual framework of the study

CHAPTER III
MATERIALS & METHODS

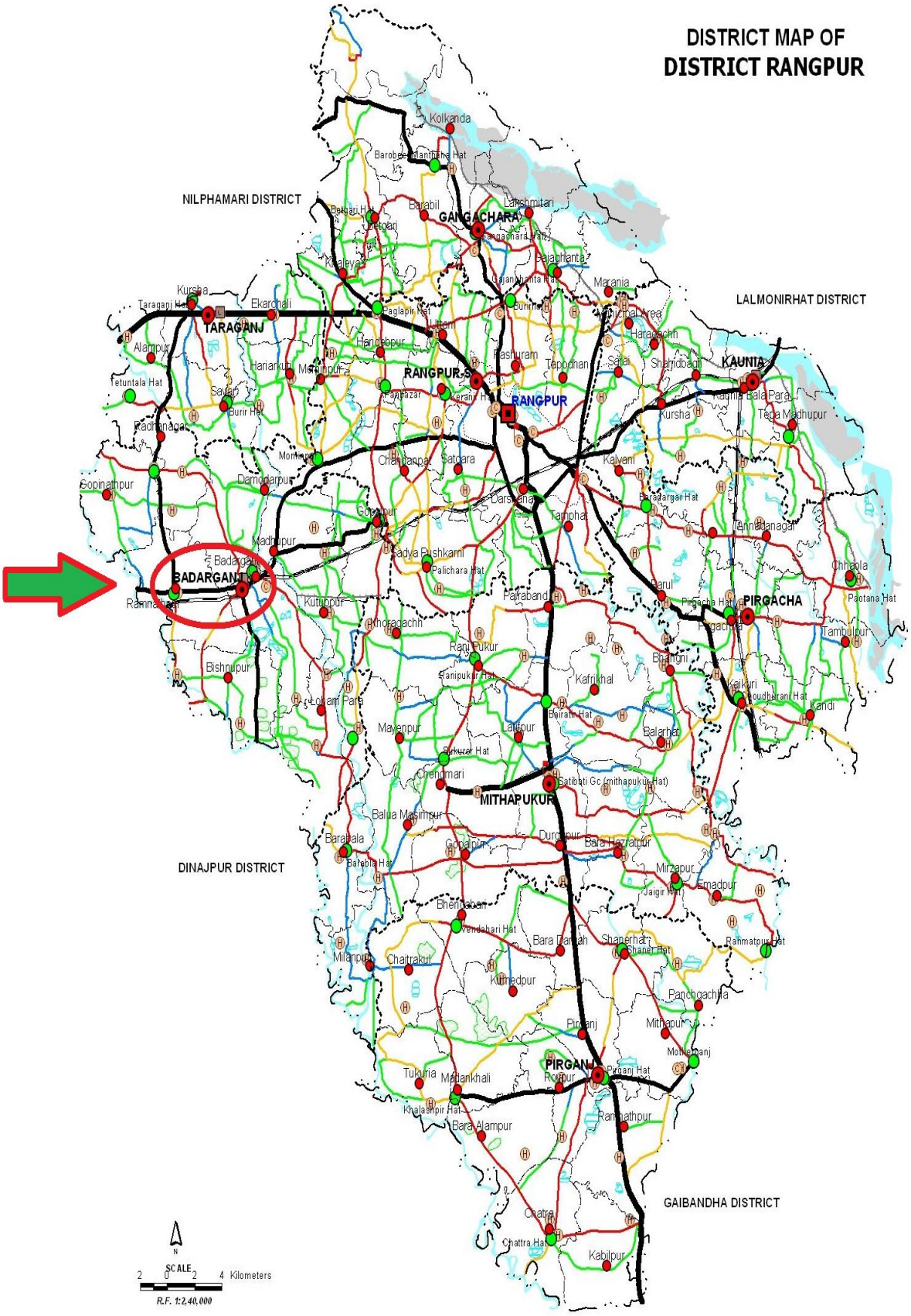
CHAPTER III

MATERIALS AND METHODS

The methodology used in leading any research is fundamentally important and have a right to careful deliberation. Proper methodology enables the researcher to collect valid and reliable information in terms of hypothesis or research instrument and to analyze the information properly to arrive at valid results. The methods and operational procedures followed in conducting this study have been discussed in this chapter.

3.1 The Locale of the Study

The research was conducted at Madhupur union under Badarganj upazilla of Rangpur district. Out of 20 villages of Madhupur union, two were purposively selected. This was because tobacco is grown more in this area than other area. The selected villages were Shantoshpur and Kazipara. Selected villages were located just near the Badarganj to Dhaka highway road. Maps of Bangladesh appearing Rangpur district, Rangpur district appearing Badarganj Upazilla and Badarganj Upazilla appearing the study area are presented in Fig. 3.1 and 3.2 respectively.



Figure#3.1. A map of Rangpur district showing Badarganj upazila

Figure#3.2 A map of Badarganj Upazila showing the study area (Madhupur Union)

3.2 Population and Sample

The tobacco farmers under selected two villages were considered as the population of the study. A list of tobacco farmers who are currently cultivating tobacco was prepared with the help of British American Tobacco and its field staffs. The number of tobacco farmers of the selected two villages was 364 which constituted the population of the study. About 30 percent of the population was selected proportionately from the selected villages as the sample by following random sampling method. Thus, the total sample size stood at 109. Moreover, a reserved list of 12 tobacco farmers was prepared for use when the tobacco farmers under sample were not available during data collection. The distribution of the selected tobacco farmers with reserve (10%) list of the selected villages is shown in the table 3.1.

Table 3.1 Distribution of the Sampled Farmers in the Study Area

Name of village	Total no. of tobacco farmers	Sample	Reserve list (10%)
Kazipara	163	48	5
Shantoshpur	201	61	7
Total	**364**	**109**	**12**

3.3 Instrument for Data Collection

In a social research, interview schedule is the instrument for data collection. For social research study, preparation of interview schedule for collection of information requires a very careful consideration. So, a structured interview schedule was prepared for collection of relevant data for the study. Both closed and open form questions were included in the schedule. Simple and direct questions were also included to ascertain the opinion of the farmers regarding a number of aspects. The draft interview schedule was prepared in accordance with the objectives of the study. The interview schedule was pre-tested with 10 farmers from the study area excluded

from the sample. Necessary corrections, additions and modification were made in the interview schedule based on the pretest results. The modified and corrected interview schedule was then printed in final form and multiplied as required. An English version of this interview schedule is presented in Appendix-A.

3.4 Selection of Focus and Explanatory Variables

The successful selection of variables results is success of a research. Inappropriate and inconsistent selection of variables may lead to faulty results. The researcher employed adequate care in selecting the variables of the study. Considering personal, economic, social and psychological factors of the rural community, time and resources availability to research, reviewing relevant literature and discussing with relevant expert, the researcher selected the variables for the study. Farmers' knowledge and attitude regarding tobacco cultivation were the main focus of this study and it was considered as the predicted variables. The researcher selected nine (9) causal variables. Characteristics of the farmers like age, education, farm size, annual family income, Income from tobacco , Organizational participation ,Cosmopoliteness, Extension contact, problem faced in tobacco cultivation were selected as the causal variables.

3.5 Data Collecting Procedure

For the purpose of data collection, a semi-structured/ structured interview schedule was used. It was prepared keeping the objectives of the study in mind. The interview schedule contained both open and closed form questions. Direct and simple questions and statements were included in the schedule to collect data on the selected dependent and independent variables.

Data were collected through personal interviewing by the researcher himself through face to face interview. The study was purposively conducted in the Rangpur district of Bangladesh. Before starting collection of data, the researchers met with the British American Tobacco agent of the respective blocks in order to explain the objectives of the study and requested them to provide necessary help and co-operation in collection of data. The local leaders of the area were also approached to render

essential help. As a result, there was no problem to collect data. The researcher made all possible efforts to establish rapport with the respondents so that they could feel comfortable to the questions which contained in the schedule. All possible efforts were made to explain the purpose of the study to the respondents and their answers were recorded sincerely. Collection of data took 20 days from 16 January to 04 February 2018.

3.6 Measurement of Variables

The different characteristics of the tobacco farmers might have impact on their knowledge and attitude towards tobacco cultivation. These characteristics were age, education, farm size, annual family income, Income from tobacco, Organizational participation, Cosmo-politeness, Extension contact, problem faced for tobacco cultivation. The knowledge and attitude of tobacco farmers towards tobacco cultivation were the main center of the study. Measurement of all the factors of the tobacco farmers and their knowledge and attitude towards tobacco cultivation are discussed in the following sub sections:

3.6.1 Age

Age of a respondent was measured in terms of years from birth to the time of interview which was found on the basis of response (Adnan, 2016). A score of one (1) was assigned for each year of age. Question regarding this variable appears in item no. 1 in the interview schedule (Appendix-A).

3.6.2 Education

The education of tobacco farmers was measured by the number of years of schooling completed in an educational institution. A score of one (1) was given for each year of schooling completed. If tobacco farmers did not know how to read and write, his education score was zero (0), while a score of 0.5 was given to tobacco farmers who could sign his name only. If a tobacco farmer did not go to school but studied at home or adult learning center, his knowledge status was considered as the equivalent to a formal school student (Adnan, 2016).

3.6.3 Farm size

The farm size of a farmer referred to the total area of land on which his/her family carried out farming operations, the area being in terms of full benefit to his/her family (DAE, 1999). Data obtained from asking direct question. The farm size was measured in hectares for each farmer using the following formula:

$$\text{Farm size} = A1 + A2 + 1/2\,(A3+A4) + A5+A6$$

Where,

Al = Homestead area

A2= Own land under own cultivation

A3= Land given to others on borga system

A4= Land taken from others on borga system

A5= Land taken from others on lease

A6=Others

3.6.4 Annual family income

Annual family income of tobacco farmers was measured in Thousand Taka. The total yearly earning from agricultural (field crops, vegetables, fruits, spices, livestock and fisheries) and nonagricultural sources (service, business, and others) by the respondent himself/herself and other members of his family was determined. Thus, yearly earning from agricultural and non-agricultural sources were added together to obtain annual family income of a tobacco farmers. A score of one was given for each Tk. 1,000 to compute the annual family income scores of the respondents.

3.6.5 Income from tobacco cultivation

Annual income from tobacco cultivation of a farmer was measured in Thousand Taka. It refers to the earning of the respondent from selling of tobacco leaf and products. A score of one was given for each Tk. 1,000 to compute the income from the tobacco cultivation scores of the respondents.

3.6.6 Organizational participation

Organizational participation of a respondent was measured by the nature of his involvement of participation in different organization. The score of a respondent was computed as follows:

Score according to nature of involvement

No participation = 0

Ordinary member = 1

Executive member = 2

Executive officer = 3

The score according to nature of involvement for each organization was multiplied by the duration (years) of his participation in the respective organization. Finally total scores of all organizations were added together to obtain his total score of organizational participation.

3.6.7 Cosmopoliteness

Cosmopoliteness of a respondent referred to frequency of visit to different places outside from his/her own village. The following scale was used for computing cosmopoliteness score of a respondent. Each respondent was asked to indicate the extent of his/her Cosmopoliteness. With five (5) alternative responses as "Regularly", "Frequently", "Occasionally", "Rarely", "Not at all" basis and weights were assigned as 4, 3, 2, 1 and 0 respectively. Scores obtained for visit to each of the above six categories of places were added together to get the cosmopoliteness score of a respondent. The range of cosmopoliteness score could be from '0' to '24', where '0' indicates 'no cosmopoliteness' and '24' indicates 'very high cosmopoliteness'.

3.6.8 Extension contact

This variable was measured by computing an extension contact score on the basis of a tobacco farmer extent of contact with 10 selected media as obtained in response to item no.8 of the interview schedule (Appendix A). Each respondent was asked to

indicate the extent of his contact with each of the selected media. With five (5) alternative responses as „regularly", "Frequently" , "occasionally", "rarely" and "not at all " basis and weights were assigned as 4, 3, 2, 1 and 0 respectively. The extension contact score of a respondent was determined by summing up his/her scores for contact with all the selected media. Thus possible extension contact score can vary from zero (0) to 40, where zero (0) indicated no extension contact and 40 indicated the highest level of extension contact.

3.6.9 Problem faced in tobacco cultivation

This variable was measured by computing the extent of various problems of the respondents with 15 selected problems as obtained in response to item no. 10 of the interview schedule (Appendix A). Each respondent was asked to indicate the extent of his/her problem as "high", "medium", "low" and "not at all" problem and score was assigned as 3, 2, 1 and 0 respectively. The problem faced score of a respondent was determined by summing up his/her scores for all the problems. Thus, possible score could vary from zero (0) to 45, where Zero indicated no problem and 45 indicated the highest level of problem.

3.6.10 Knowledge on tobacco cultivation

After through consultation with relevant experts and reviewing of related literature, 16 questions regarding tobacco cultivation were selected and those were asked to the respondents to determine their knowledge on tobacco cultivation. Two (2) score was assigned for each correct answer and zero (0) for wrong or no answer. Partial score was assigned for partially correct answer. Thus the knowledge on tobacco cultivation score of the respondent could range from 0 to 32, where zero (0) indicating no knowledge and 32 indicate the very high knowledge on tobacco cultivation.

3.6.11 Attitude towards tobacco cultivation

An attitude may be defined as predisposition to act towards an object in a certain manner. Attitude of a farmer towards tobacco cultivation was used to refer to his belief, feelings and action towards the various aspects tobacco cultivation. It was measured by constituting 14 statements (eleven positive and three negative). A

statement was considered positive if it possessed an idea favorable towards the tobacco cultivation. On the other hand, a statement was considered negative if it was unfavorable towards tobacco cultivation. The respondents were asked to express their opinion in the form of “strongly agree” or “agree” or “undecided” or “disagree” or “strongly disagree”. A score of 5 was given to “strongly agreed”, 4 to “agreed”, 3 to “undecided”, 2 to “disagreed” and 1 to “strongly disagreed”, if the statement was positive. A reverse scoring method was followed in case of statements considered negative. Attitude score of a respondent was determined by summing the scores obtained by him for all the items in the scale. The index scores of respondents could range from 14 to 70 where “14” indicating highest unfavorable and “70” for highest favorable attitude towards tobacco cultivation.

3.7 Statement of Hypothesis

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

3.7.1 Research hypothesis

Research hypothesis states a possible relationship between the variables being studied or a difference between experimental treatments that the researcher expects to emerge. The following research hypothesis was put forward to know the relationships between each of the 9 selected characteristics of the tobacco farmers and their i) knowledge and ii) attitude towards tobacco cultivation. “Each of the 9 selected characteristics of the tobacco farmers will have significant relationship with their i) knowledge and ii) attitude towards tobacco cultivation.”

3.7.2 Null hypothesis

A null hypothesis states that there is no relationship between the concerned variables. The following null hypothesis was undertaken for the present study "There is no relationship between the selected characteristics of tobacco farmers and their i) knowledge and ii) attitude towards tobacco cultivation." "The selected characteristics were age, education, farm size, annual family income, Income from tobacco, Organizational participation, Cosmopoliteness, Extension contact, problem faced for tobacco cultivation"

3.8 Data Processing

After completion of field survey, all the data were coded, compiled and tabulated according to the objectives of the study. Local units were converted into standard units. All the individual responses to questions of the interview schedule were transferred in to a excel sheet to facilitate tabulation, categorization and organization. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form.

3.9 Statistical Procedures

The data were analyzed in accordance with the objectives of the study. Qualitative data were converted into quantitative data by means of suitable scoring technique wherever necessary. The statistical measures such as range, means, standard deviation, number and percentage distribution were used to describe the variables. Pearson's Product Moment Coefficient of Correlation (r) was used in order to explore the relationships between the concerned variables. One percent (0.01) level of probability and five percent (0.05) level of probability were the basis for rejecting any null hypothesis throughout the study. The SPSS computer package was used to perform all these process.

CHAPTER IV
RESULTS & DISCUSSION

CHAPTER IV

RESULTS AND DISCUSSION

A sequential and detailed discussion on the findings of the study has been presented in this Chapter. The Chapter is divided into three sections:

First section : Selected characteristics of the respondents

Second section : Knowledge & Attitude of the farmers regarding tobacco cultivation.

Third section : relationships between the selected characteristics of the tobacco farmers on their knowledge & attitude regarding tobacco cultivation.

4.1 Selected Characteristics of the Farmers

Man possesses various interrelated and constitutional characteristics and those form his/her personality. It is expressed behavior or the sum totality of individual characteristics and ways of behaving which determines his unique adjustment to his environment. It includes the individual behavior, appearance, beliefs, attitude, values, motives, emotional reaction, expressing capacity, experience and individual modes of adjustment. It was therefore, assumed that attitude towards tobacco cultivation would be influenced by various characteristics of the farmers. Nine characteristics of the respondents were selected to find out their relationship with knowledge and attitude towards tobacco cultivation. This has been discussed in the final section of this chapter. The selected characteristics included age, level of education, farm size, annual family income, Income from tobacco, Organizational participation, Cosmopoliteness, Extension contact, problem faced for tobacco cultivation. The salient features of the nine (9) characteristics of the farmers are presented in Table 4.1.

Table 4.1 Salient features of the selected characteristics of the farmers

(n=109)

Sl. no	Characteristics	Unit of measurement	Possible range	Observed range	Mean	SD
1	Age	Year	unknown	29-58	40.11	6.69
2	Level of education	Level of schooling	unknown	00-12	4.66	3.51
3	Farm size	Hectare	unknown	0.20-3.06	0.73	0.64
4	Annual income	"000" Taka	unknown	200-1100	338.47	150.41
5	Income from tobacco	"000" Taka	unknown	50-500	153.60	71.54
6	Organizational participation	Scores	0-24	3-17	9.55	3.45
7	Cosmopoliteness	Scores	0-24	11-22	16.11	2.67
8	Extension contact	Scores	0-40	13-33	25.74	4.09
9	Tobacco Cultivation problem	Scores	0-45	3-34	22.96	6.40

4.1.1 Age

Age of the respondents ranged from 29 to 58 years, the mean is 40.11 years and the standard deviation is 6.69. On the basis of age, the farmers were classified into three categories: "young aged" (up to 35), "middle aged" (36-50) and "old aged" (above 50 years). Table 4.2 contains the distribution of the respondents according to their age.

Table 4.2 Distribution of the Tobacco Farmers According to their Age

Categories	Basis of categorization (year)	Respondents	
		Numbers	Percent
Young	Up to 35	34	31.2
Middle	36-50	67	61.5
Old	Above 50	8	7.3
Total		**109**	**100**

Data presented in Table 4.2 indicated that the highest proportion (61.5 percent) of the respondents belong under middle aged category compared to 31.2 percent young and 7.3 percent old aged category. The overwhelming majority (92.7 percent) of the tobacco farmers were young to middle aged. This means that tobacco cultivation in the study area is being managed by comparatively younger tobacco farmers.

4.1.2 Level of Education

The education score of the tobacco farmers ranged from 0-12, with an average of 4.66 and standard deviation 3.51. Based on their level of education scores, tobacco farmers were classified into five categories namely illiterate (0), can sign only (0.5), primary education (1-5), secondary education (6-10) and above secondary (above 10). The distribution of the tobacco farmers according to their education is shown in Table 4.3.

Table 4.3 Distribution of the tobacco farmers according to their education

Categories	Basis of categorization (Level of schooling)	Respondents	
		Numbers	Percent
Illiterate	0	12	11.0
Can sign only	0.5	22	20.2
Primary level	1-5	33	30.3
Secondary level	6-10	37	33.9
Higher Secondary level	Above 10	5	4.6
Total		**109**	**100**

Data presented in table 4.3 indicated the most of the farmers (33.9%) belong to the Secondary level category, 11.0% of the farmers had no education, 20.2% of them can sign only, 30.3% of them belong to the Primary level and only 4.6% of the farmers had higher secondary education. Education increases the power of observation, analysis, integration, understanding, decision making and adjustment to new situation of an individual. Educated farmers may get useful information through reading leaflets, booklets, books and other printed materials. Moreover they possess desire for new and newer information related to their farming operations. Education broadens the power of understanding and develops the abilities of analyzing facts and situation in order to take correct decisions.

4.4.3 Farm size

Farm size varied from 0.20 to 3.06 hectares with an average of 0.73 hectares and standard deviation of 0.64. Based on their farm size the farmers were classified into three categories as suggested by DAE (1999) which shown in Table 4.4.

Table 4.4 Distribution of the farmers according to their farm size

Categories	Basis of categorization (Hectare)	Respondents	
		Numbers	Percent
Small	0.2 - <1	88	80.7
Medium	1 - <3	20	18.3
Large	Above 3	1	0.9
Total		**109**	**100**

The data in the Table 4.4 revealed that majority of the respondents (80.7 percent) had Small farm while 18.3 percent had medium farm and 0.9 percent had large farm.

4.1.4 Annual family income

Annual family income of the tobacco farmers ranged from Taka 200-1100 thousand, the mean being 338.47 thousand and standard deviation is 150.41. On the basis of their annual income scores, the tobacco farmers were divided into three categories-

"low income" "medium income" and "high income". The distribution of the tobacco farmers according to their annual family income is shown in Table 4.5.

Table 4.5 Distribution of the farmers according to their Annual family income

Categories	Basis of categorization ("000" Taka)	Respondents	
		Numbers	Percent
Medium income	Upto 300	59	54.1
High income	300-600	43	39.4
Very high income	Above 600	7	6.4
Total		**109**	**100**

Data presented in table 4.5 indicated the majority (54.1 percent) of the tobacco farmers had medium income and 39.4 percent of tobacco farmer had high income and 6.4 percent very high income. Its indicating that tobacco cultivation is usually practiced by the farmers having comparatively lower and medium economic condition.

4.1.5 Income from Tobacco

Income from tobacco cultivation of the tobacco farmers ranged from Taka 50-500 thousand, the mean being 153.6 thousand and standard deviation 71.54. On the basis of their income from tobacco, the tobacco farmers were divided three categories- "low income" "medium income" and "high income". The distribution of the tobacco farmers according to their income from tobacco cultivation is shown in Table 4.6.

Table 4.6 Distribution of the farmers according to their income from tobacco cultivation

Categories	Basis of categorization ("000" Taka)	Respondents	
		Numbers	Percent
Low income	Upto 115	30	27.5
Medium income	116-188	53	48.6
High income	Above 188	26	23.9
Total		**109**	**100**

Data presented in table 4.6 , the majority (48.6 percent) of the tobacco farmers had medium income compared to 27.5 percent had low income and 23.9 percent had high income from tobacco cultivation. Thus, the overwhelming majority (76.1 percent) of the farmers had low to medium annual income from tobacco cultivation. So, tobacco cultivation is very profitable.

4.1.6 Organizational participation

Organizational participation observed scores ranged from 3 to 17 with the mean of 9.55 and standard deviation is 3.45. The respondents were classified into three categories which are shown in Table 4.7.

Table 4.7 Distribution of the farmers according to their organizational participation

Categories	**Basis of categorization** (Scores)	**Respondents**	
		Numbers	**Percent**
Low	Upto 6	23	21.1
Medium	7 - 12	61	56.0
High	Above 12	25	22.9
Total		**109**	**100**

Data furnished in Table 4.7 indicate that the highest proportion (56%) of the respondents felt in the “medium” category and 22.9% felt in “high” category. And 21.1% felt in low category.

4.1.7 Cosmopoliteness

The observed cosmopoliteness scores of the tobacco farmers ranged from 11 to22 with an average of 16.11 and a standard deviation of 2.67 against the possible range of 0 to 24. On the basis of their cosmopoliteness scores, the tobacco farmers were classified into three categories: “low cosmopoliteness”, “medium cosmopoliteness” and “high cosmopoliteness”. The distribution of the tobacco farmer according to their cosmopoliteness is shown in Table 4.8.

Table 4.8 Distribution of tobacco farmers according to cosmopoliteness

Categories	Basis of categorization (Scores)	Respondents	
		Numbers	Percent
Low cosmopoliteness	Upto 13	24	22.0
Medium cosmopoliteness	14– 19	75	68.8
High cosmopoliteness	Above 19	10	9.2
Total		**109**	**100**

The finding (table 4.8) showed that the majority (68.8 percent) of the tobacco farmers had medium cosmopoliteness compared to 22.0 and 9.2 percent having low and high cosmopoliteness respectively.

4.1.8 Extension media contact

The observed extension contact scores of the tobacco farmers ranged from 13 to 33 against the possible range from 0 to 40, the mean and standard deviation are 25.74 and 4.090 respectively. According to this score, the tobacco farmers were classified into three categories:

Table 4.9 Distribution of the farmers according to their Extension contact

Categories	Basis of categorization (Scores)	Respondents	
		Numbers	Percent
Low	Upto 21	17	15.6
Medium	22 – 29	77	70.6
High	Above 29	15	13.8
Total		**109**	**100**

A proportion of 70.6 percent of the tobacco farmers had medium extension contact compared to 15.6 percent of them having low extension contact. Only 13.8 percent of the tobacco farmers had high contact. Thus, overwhelming majority (86.2 percent) of the tobacco farmers had low to medium extension contact. Extension contact is a very effective and powerful way of receiving information about various new and

mordern technologies. The status of no or having low and medium contacts might have significant impacts on the knowledge and attitude of tobacco farmers.

4.1.9 Problem faced in tobacco cultivation

The problem faced score of the tobacco farmers ranged observed from 3 to 34 against the possible score of 0-45 with a mean of 22.96 and standard deviation of 6.4. Based on the problem faced scores, the tobacco farmers were classified into three categories: “low problem”, “medium problem” and “high problem” .The distribution of the tobacco farmers according to their problem faced is presented in Table 4.10.

Table 4.10 Distribution of the tobacco farmers according to their problem faced in tobacco cultivation

Categories	Basis of categorization (Scores)	Respondents	
		Numbers	Percent
Low	Upto 15	15	13.8
Medium	16 – 30	89	81.7
High	Above 30	5	4.6
Total		**109**	**100**

In table 4.10, about 81.7 percent of the tobacco farmers had medium problem compared to 13.8 percent of them having low problem and only 4.6 percent having high problem. Thus, the vast majority (95.4 percent) of the tobacco farmers had low to medium problem.

4.1.10 Knowledge on tobacco cultivation

Tobacco farmers’ knowledge the possible range was from 0 to 32. But their observed knowledge scores ranged from 15 to 32, the mean being 24.16 and standard deviation 3.59. Based on the theoretical scores, the farmers were classified into three categories as: “low knowledge”, “medium knowledge” and “high knowledge”. The distribution of the farmers according to their knowledge level is shown in Table 4.11.

Table 4.11 Distribution of the tobacco farmers according to their knowledge on tobacco cultivation

Categories	Basis of categorization (Scores)	Respondents	
		Numbers	Percent
Low	Upto 22	6	5.5
Medium	23 – 27	35	32.1
High	Above 27	68	62.4
Total		**109**	**100**

Majority (62.4%) of the farmers possessed high knowledge and 5.5% and 32.1% of the farmers possessed low and medium knowledge on tobacco cultivation respectively. It means that overwhelming majority (94.5%) of the farmers had medium to high knowledge. But to perform better in tobacco cultivation, farmers should have adequate knowledge on different aspects of tobacco cultivation.

4.1.11 Attitude towards tobacco cultivation

Farmers' attitude towards tobacco cultivation score ranged from 24 to 56 against the possible range of 0 to 70. The average was 39.71 with a standard deviation of 4.80. Based on the observed attitude scores, the farmers were classified into three categories as shown in Table 4.12

Table 4.12 Distribution of the farmers' according to their attitude towards tobacco cultivation

Categories	Basis of categorization (Scores)	Respondents	
		Numbers	Percent
Unfavorable attitude	1-27	13	11.92
Neutral attitude	28-42	42	38.53
Favorable attitude	43-70	54	49.54
Total		**109**	**100**

Data contained in Table 4.12 indicated that majority (49.54 percent) of the respondent had favorable attitude towards tobacco cultivation as compared to 11.92

percent had unfavorable attitude and 38.53 percent had neutral attitude towards tobacco cultivation.

4.2 Relationship between the selected characteristics of the respondents and their knowledge towards tobacco cultivation

The purpose of this section is to explore the relationships of the selected characteristics of the tobacco farmers with their knowledge on tobacco cultivation. Pearson's Product Moment co-efficient of correlation (r) was used to test a null hypothesis concerning the relation between any two variables. Five percent (0.05) and one percent (0.0l) level of probability was used as the basis for rejection of a null hypothesis. Results of the test of co-efficient of correlation between each of the selected characteristics of the farmers and their knowledge on farming are shown in table 4.13.

4.13 The Pearson's correlation showing relationship between Focus (Knowledge of the farmers towards tobacco cultivation) and Explanatory variables

Focus Variable	Explanatory Variable	Value of Co-efficient Correlation	Table Value Significant at 107df	
			0.05% level	0.01% level
Knowledge of the farmers towards tobacco cultivation	Age	-0.018	0.188	0.246
	Education	0.199*		
	Farm Size	0.222*		
	Annual Income	-0.038		
	Income from Tobacco	0.154		
	Organizational Participation	0.011		
	Cosmopoliteness	0.084		
	Extension Media Contact	0.202*		
	Problem faced for tobacco cultivation	-0.197*		

* Significant at 0.05 level
** Significant at 0.01 level

4.2.1 Relationship between age and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between age of the farmers and their knowledge on tobacco cultivation was found to be -0.018 (table 4.13). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (-0.018) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant.
- The null hypothesis was accepted.

The findings indicated that the age of the tobacco farmers was insignificant. So, there is no relationship of age of the farmers with their knowledge on tobacco cultivation. Roy (2006) found that age of the farmer had no significant relationship with their knowledge on boro rice cultivation. Similar result was observed by Anu (2016), Monalesa (2014), Khan (2005), Islam (2005) and Rahman (2004) in their respective studies.

4.2.2 Relationship between education level and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between education level of the farmers and their knowledge on tobacco cultivation was found to be 0.199*(table 4.13). The following observation was recorded on the basis of correlation coefficient:

- The computed value of "r" (0.199*) was found larger than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

Based on the above findings, it can be concluded that education of the tobacco farmers was positively significant. So, there is a positive relationship of education of the farmers with their knowledge on tobacco cultivation. Similar result was observed by Rahman (2015) and Monalesa (2014) in their respective studies.

4.2.3 Relationship between farm size and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between farm size of the farmers and their knowledge on tobacco cultivation was found to be 0.222*(table 4.13). The following observation was recorded on the basis of correlation coefficient:

- The computed value of "r" (0.222*) was found larger than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

Based on the above findings, it can be concluded that farm size of the tobacco farmers was positively significant. So, there is a positive relationship of farm size of the farmers with their knowledge on tobacco cultivation. Similar result was observed by Monalesa (2014) & Chowdhury (2014) in their respective studies.

4.2.4 Relationship between annual income and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between annual income of the farmers and their knowledge on tobacco cultivation was found to be -0.038 (table 4.13). The following observation was recorded on the basis of correlation coefficient:

- The computed value of "r" (-0.038) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was negatively insignificant.
- The null hypothesis was accepted.

Based on the above findings, it can be concluded that annual income of the tobacco farmers was negatively insignificant. So, there is no relationship of annual income of the farmers with their knowledge on tobacco cultivation. Similar result was observed by Chowdhury (2014) in his study.

4.2.5 Relationship between income from tobacco and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between income from tobacco of the farmers and their knowledge on tobacco cultivation was found to be 0.154(table 4.13). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.154) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant.
- The null hypothesis was accepted.

The findings indicated that the income from tobacco of the tobacco farmers was insignificant. So, there is no relationship of income from tobacco of the farmers with their knowledge on tobacco cultivation. Similar result was observed by Rahman (2015) in his study.

4.2.6 Relationship between organizational participation and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between organization participation of the farmers and their knowledge on tobacco cultivation was found to be 0.011(table 4.13). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.011) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant.
- The null hypothesis was accepted.

The findings indicated that the organization participation of the tobacco farmers was insignificant. So, there is no relationship of organization participation of the farmers with their knowledge on tobacco cultivation.

4.2.7 Relationship between cosmopoliteness and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between cosmopoliteness of the farmers and their knowledge on tobacco cultivation was found to be 0.084 (table 4.13). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.084) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant.
- The null hypothesis was accepted.

The findings indicated that the cosmopoliteness of the tobacco farmers was insignificant. So, there is no relationship of cosmopoliteness of the farmers with their knowledge on tobacco cultivation.

4.2.8 Relationship between extension media contact and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between extension media contact of the farmers and their knowledge on tobacco cultivation was found to be 0.202*(table 4.13). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.202*) was found larger than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the extension media contact of the tobacco farmers was positively significant. So, there is positive relationship of extension media contact of the farmers with their knowledge on tobacco cultivation. Similar result was observed by Anu (2016),Rahman (2015), Monalesa (2014) and Chowdhury (2014) in their respective studies.

4.2.9 Relationship between problems faced for tobacco cultivation and knowledge of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation problem faced for tobacco cultivation of the farmers and their knowledge on tobacco cultivation was found to be -0.197*(Table 4.13). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (-0.197*) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was negatively significant.
- The null hypothesis was rejected.

The findings indicated that problem faced for tobacco cultivation of the tobacco farmers was negatively significant. So, there is negative relationship of problem faced for tobacco cultivation of the farmers with their knowledge on tobacco cultivation. Similar result was observed by Rahman (2015) and Monalesa (2014) in their respective studies.

4.3 Relationship between the selected characteristics of the respondents and their attitude towards tobacco cultivation

To examine the relationship of the nine selected characteristics of the respondents with their attitude towards tobacco cultivation was the purpose of this section. The nine selected characteristics were: age, education, farm size, annual family income, Income from tobacco, Organizational participation, Cosmopoliteness, Extension contact, problem faced for tobacco cultivation. These nine selected characteristics were the independent variables while attitude towards tobacco cultivation was the dependent variable of this study.

Pearsons product moment correlation co-efficient (r) has been used to explore the relationships between the selected characteristics of the respondents with their attitude towards tobacco cultivation. Five percent (0.05%) and one percent (0.0l %) level of probability was used as the basis for rejection of a null hypothesis. Results of the test of co-efficient of correlation between each of the selected characteristics of the farmers and their attitude towards tobacco cultivation are shown in table 4.14.

4.14 The Pearson's correlation showing relationship between Focus (attitude towards tobacco cultivation) and Explanatory variables

Focus Variable	Explanatory Variable	Value of Co-efficient Correlation	Table Value Significant at 107df	
			0.05% level	0.01% level
Attitude towards tobacco cultivation	Age	0.050	0.188	0.246
	Education	0.555**		
	Farm Size	0.193*		
	Annual Income	0.194*		
	Income from Tobacco	0.188*		
	Organizational Participation	0.334**		
	Cosmopoliteness	0.570**		
	Extension Media Contact	0.523**		
	Problem faced for tobacco cultivation	-0.054		

* Significant at 0.05 level
** Significant at 0.01 level

4.3.1 Relationship between age and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between age of the farmers and their attitude towards tobacco cultivation was found to be 0.050 (table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.050) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant.
- The null hypothesis was accepted.

The findings indicated that the age of the tobacco farmers was insignificant. So, there is no relationship of age of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Monalesa (2014) and Amin (2006) in their respective studies.

4.3.2 Relationship between education and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between education of the farmers and their attitude towards tobacco cultivation was found to be 0.555** (table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.555**) was found larger than that of the tabulated value (0.246) with 107df at 0.01 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the education of the tobacco farmers was positively significant. So, there is positive relationship of education of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Rahman (2015) in his study.

4.3.3 Relationship between farm size and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between farm size of the farmers and their attitude towards tobacco cultivation was found to be 0.193* (table 4.14).

The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.193*) was found larger than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the farm size of the tobacco farmers was positively significant. So, there is positive relationship of farm size of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Monalesa (2014), Rabby (2014) and Amin (2006) in their respective studies.

4.3.4 Relationship between annual income and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between annual income of the farmers and their attitude towards tobacco cultivation was found to be 0.194* (table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.194*) was found larger than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the annual income of the tobacco farmers was positively significant. So, there is positive relationship of annual income of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Rabby (2014) & Amin (2006) in their respective studies.

4.3.5 Relationship between income from tobacco and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between income from tobacco of the farmers and their attitude towards tobacco cultivation was found to be 0.188*

(table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.188*) was found equal than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the income from tobacco of the tobacco farmers was positively significant. So, there is positive relationship of income from tobacco of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Rahman (2015) in his study.

4.3.6 Relationship between organizational participation and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between organization participation of the farmers and their attitude towards tobacco cultivation was found to be 0.334** (table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.334**) was found larger than that of the tabulated value (0.246) with 107df at 0.01 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the organization participation of the tobacco farmers was positively significant. So, there is positive relationship of organization participation of the farmers with their attitude towards tobacco cultivation.

4.3.7 Relationship between cosmopoliteness and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between cosmopoliteness of the farmers and their attitude towards tobacco cultivation was found to be 0.570** (table

4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.570**) was found larger than that of the tabulated value (0.246) with 107df at 0.01 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the cosmopoliteness of the tobacco farmers was positively significant. So, there is positive relationship of cosmopoliteness of the farmers with their attitude towards tobacco cultivation.

4.3.8 Relationship between extension contact and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between extension media contact of the farmers and their attitude towards tobacco cultivation was found to be 0.523** (table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (0.523**) was found larger than that of the tabulated value (0.246) with 107df at 0.01 level of probability.
- The relationship between the concerned variables was positively significant.
- The null hypothesis was rejected.

The findings indicated that the extension media contact of the tobacco farmers was positively significant. So, there is positive relationship of extension media contact of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Rabby (2014) & Rahman (2015) in their respective studies.

4.3.9 Relationship problems faced for tobacco cultivation and attitude of the farmers towards tobacco cultivation

Computed value of the co-efficient of correlation between problems faced for tobacco cultivation of the farmers and their attitude towards tobacco cultivation was

found to be -0.054 (table 4.14). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of "r" (-0.054) was found smaller than that of the tabulated value (0.188) with 107df at 0.05 level of probability.
- The relationship between the concerned variables was negatively insignificant.
- The null hypothesis was accepted.

The findings indicated that the problems faced for tobacco cultivation of the tobacco farmers was negatively insignificant. So, there is no relationship of problems faced for tobacco cultivation of the farmers with their attitude towards tobacco cultivation. Similar result was observed by Monalesa (2014) in her study.

CHAPTER V
SUMMARY, CONCLUSIONS & RECOMMENDATIONS

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings

The major findings of the study are summarized below:

5.1.1 Selected characteristics of the tobacco farmers

Age: The highest proportion (61.5 percent) of the respondents fell in the middle aged category compared to 31.2 percent young and 7.3 percent old aged category.

Level of education: A large proportion (33.9 percent) of the respondents felt under the category of "secondary education" compared to 11 percent "illiterate", 20.2 percent having "can sign only", 30.3 percent having "primary education" and 4.6 percent having "higher secondary education".

Farm size: More than half of the respondent (80.7 percent) had small farm, 18.3 percent had medium farm, and 0.9 percent had large farm. The average farm size of the farmers of the study area was 0.73 hectares.

Annual family income: The majority (54.1 percent) of the tobacco farmers had low income compared to 39.4 percent medium income and 6.4 percent having high income. Its indicating that tobacco cultivation is usually practiced by the farmers of comparatively lower economic standings.

Income from tobacco cultivation: The majority (48.6 percent) of the tobacco farmers had medium income compared to 27.5 percent low income and 23.9 percent high income from tobacco cultivation. Thus, the overwhelming 76.1 percent of the farmers had low to medium annual income from tobacco cultivation. So, tobacco cultivation is very profitable.

Organizational participation: Highest proportion (56%) of the respondents felt in the "medium" category and 22.9% felt in "high" category. And 21.5% felt in "low"

category. Its indicating that tobacco cultivation is usually practiced by the farmers who have comparatively medium organizational participation.

Cosmopoliteness: The majority (68.8 percent) of the tobacco farmers had medium cosmopoliteness compared to 22.0 and 9.2 percent having low and high cosmopoliteness respectively. It was observed that the tobacco farmer with medium cosmopoliteness, they are very interest in tobacco cultivation.

Extension media contact: A proportion of 70.6 percent of the tobacco farmers had medium extension contact compared to 15.6 percent of them having low extension contact. Only 13.8 percent of the tobacco farmers had high contact. Thus, overwhelming majority (86.2 percent) of the tobacco farmers had low to medium extension contact. Extension contact is a very effective and powerful source of receiving information about various new and modem technologies. Its indicating that tobacco cultivation is usually practiced by the farmers who have comparatively medium extension media contact.

Problem faced in tobacco cultivation: About 81.7 percent of the tobacco farmers had medium problem compared to 13.8 percent of them having low problem and only 4.6 percent having high problem. Thus, the vast majority (95.4 percent) of the tobacco farmers had low to medium problem. Its indicating that tobacco cultivation is usually practiced by the farmers who have comparatively medium problem.

Knowledge on tobacco cultivation: Majority (62.4 %) of the farmers possessed high knowledge and 5.5% and 32.1% of the farmers possessed low and medium knowledge on tobacco cultivation respectively. It means that overwhelming majority (94.5%) of the farmers had medium to high knowledge. But to perform better in tobacco cultivation, farmers should have adequate knowledge on different aspects of tobacco cultivation.

Attitude towards tobacco cultivation: Majority (49.54 percent) of the respondent had favorable attitude towards tobacco cultivation as compared to 11.92 percent had unfavorable attitude and 38.53 percent had neutral attitude towards tobacco

cultivation. So, it indicates almost half of total farmer have favorable attitude towards tobacco cultivation.

5.1.2 Knowledge of the tobacco farmers on tobacco cultivation

Majority (62.4 %) of the farmers had high knowledge, while 32.1% had medium and 5.5% of the farmers had low knowledge on tobacco cultivation. Data reveals that 94.5% of the farmers had medium to high knowledge on tobacco cultivation.

5.1.3 Attitude of the farmers towards tobacco cultivation

About most (49.54 percent) of the farmers had favorable attitude towards tobacco cultivation.

5.1.4 Result of hypothesis testing

For knowledge : Out of nine selected characteristics of the farmers- education, farm size, extension contact of the farmers had significant positive relationship with their knowledge on tobacco cultivation, while Problem faced in tobacco cultivation by the farmers had significant negative relationship with their knowledge on tobacco cultivation. Rest five characteristics i.e. age, annual income, income from tobacco, organization participation, cosmopoliteness had no significant relationship with their knowledge on tobacco cultivation.

For attitude : Out of nine selected characteristics of the farmers- education, farm size, annual income, income from tobacco, organization participation, cosmopliteness and extension contact of the farmers had significant positive relationship with their attitude towards tobacco cultivation. Rest two characteristics i.e. age and Problem faced in tobacco cultivation had no significant relationship with their attitude on tobacco cultivation.

5.2 Conclusions

"A conclusion presents 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).

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

1. The findings of the study revealed that vast majority of the farmers (94.5%) had medium to high knowledge on tobacco cultivation. Knowledge of the farmers had significant positive relationship with their education, farm size and extension contact. While knowledge of the farmers had negatively significant with their tobacco cultivation problem. Therefore, it may be concluded that it would be a wiseful thinking to improve the overall situation of knowledge by taking care of the factors related to the increase of knowledge among the farmers.

2. Attitude of the farmers is not up to mark. A proportion of 49.54 percent of the farmers had favorable attitude towards various aspects of tobacco cultivation. It may be concluded that the cultivation of tobacco will not be possible to improve to a significant extent unless the concerned authorities take proper steps to improve farmer's attitude towards tobacco cultivation.

3. Education of the farmers had significant positive relationship with their knowledge and attitude towards tobacco cultivation. Therefore it may be concluded that the farmers having more education had more favorable knowledge and attitude towards tobacco cultivation.

4. Farm size had significant and positive relationship with their knowledge and attitude towards tobacco cultivation. It was thus proved that farmers' knowledge and attitude is dependent with their farm size.

5. Annual family income of the farmers had significant positive relationship with their attitude towards tobacco cultivation. It was thus proved that farmers' attitude is dependent with their annual family income. It further indicates that farmers having more family income had more favorable attitude towards tobacco cultivation.

6. Income from tobacco of the farmers had significant positive relationship with their attitude towards tobacco cultivation. It was thus proved that farmers' attitude is dependent with their income from tobacco. Therefore it may be concluded that the farmers having more income from tobacco cultivation had more favorable attitude towards tobacco cultivation

7. Organization participation of the farmers had significant positive relationship with their attitude towards tobacco cultivation. It was thus proved that farmers' attitude is dependent with their organization participation.

8. Cosmopoliteness of the farmers had significant positive relationship with their attitude towards tobacco cultivation. It was thus proved that farmers' attitude is dependent with their cosmopoliteness.

9. Extension contact of the farmers had significant positive relationship with their knowledge and attitude towards tobacco cultivation. It was thus proved that farmers' knowledge and attitude are dependent with their extension contact. Therefore, it may be concluded that the farmers having more extension contact had more favorable knowledge and attitude towards tobacco cultivation.

10. Problem faced by the farmers had significant and negative relationship with their knowledge on tobacco cultivation. It may be concluded that farmers' knowledge is dependent with their problem faced.

5.3 Recommendations

On the basis of experience, observation and conclusions drawn from the findings of the study following recommendations are made:

5.3.1 Recommendations for policy implication

1. Research has already proven the harmful effect of tobacco on both health and environment. Therefore, further research need to be conducted to find out the crops that can be cultivated as an alternative cash crop of tobacco, and also the point is to be brought to light so that the farmers is not financially harmed.

2. It is observed that 49.54 percent of the farmers showed favorable attitude towards tobacco cultivation. To overcome this attitude, alternative cash crop should introduce and disseminate among the farmers of the study location.

3. The farmers' literacy rate was high and it related to their knowledge gain. It is therefore, recommended that farmers can take advantage of different printed materials i.e. book, booklets, leaflets, posters, newspapers, etc. so that they can get more knowledge easily and can increase positive attitude. It is, therefore, recommended that arrangement should be made by the concerned authorities to undertake more educational activities for increasing the education level of the farmers.

5.3.2 Recommendations for further study

On the basis of scope and limitations of the present study and observations made by the researcher, the following recommendations are made for further study:

1. The study was conducted in limited areas of Rangpur district. Findings of the study need to be verified by the similar research in other parts of the country.

2. Eleven characteristics of the farmers were considered as the experimental variable of the study. Therefore, it is recommended that further studies should be conducted with other variables.

3. Further research is necessary to find out the effective ways and means which would contribute in tobacco cultivation.

4. This study was conducted knowledge and attitude towards tobacco cultivation. Similar study may be undertaken on the knowledge and attitude towards other crops of Bangladesh.

5. Further research is necessary to find out harmful effects of the tobacco farmers on the cultivation of tobacco.

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APPENDIX-A

Department of Agricultural Extension and Information System

Sher-e-Bangla Agricultural University

Dhaka-1207

An Interview Schedule for the Study Entitled

"KNOWLEDGE AND ATTITUDE OF THE FARMERS TOWARDS TOBACCO CULTIVATION IN SELECTED AREA OF RANGPUR DISTRICT"

Serial no.

Name of the respondent…….Father's name: ….……

Village: …….Union…….Upazila……..

District…….

Please answer the following questions

1. Age

How old are you? ……years

2. Level of education

(Please mention your level of education)

a)cannot read and write _____

b) Can sign only _____

c) I have studied up to class _____

I. class five
II. class six to ten
III. above class ten
IV. Above higher secondary

3. Farm size

(Please mention the area of your land according to use)

Sl. no.	Types of land use	Area of land(ha)
F1	Homestead land (including pond and orchard)	
F2	Land under own cultivation	
F3	Land given to others	
F4	Land taken from others	
F5	Land taken from others on lease	
F6	Others	
Total farm size = F1+F2+1/2(F3+F4)+F5+F6		

4. Annual family income

(Please mention the amount of annual income from the following sources)

a) Agricultural sources

SL. No.	Crop Name	Amount of income (in TK.)
1	Rice	
2	Tobacco	
3	Jute	
4	Potato	
5	Maize	
6	Pulse crop	
7	Oil crop	
8	Spice crop	
9	Vegetables	
10	Fruits	
11	Cow,goat,ram,bafellow	
12	Fish resources	
13	Poultry	
Total		

b) Non-Agricultural sources

SL. No.	Income resources	Amount of income (in TK.)
1	Service	
2	Business	
3	Day labor	
4	Other family members	
5	Others income source	
Total		

5. Income from tobacco

What is your annual income from tobacco (product or by product) during last year?
.....TK

6. Organizational participation

please mentions the nature and duration of your participation.

Sl. no.	Name of Organizations	Nature of Participation (year)			
		Not involved(0)	Ordinary member (1)	Executive member(2)	Executive officer(3)
1	Religious committee				
2	School committee				
3	Irrigation committee				
4	Mass literacy samity				
5	Local samity of NGO's (BRAC, ASA, GB)				
6	Union parishad				
7	IPM club				
8	Others				

7. Cosmopoliteness

(Please mention the extent of your visit the following place)

Sl no	Places of visit	Extent of Visits				
		Regularly (4)	Frequently (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1	Visit of market near your own village	10 or more times/month	5-9 times / month	2-4 times /month	Once / month	Not even once
2	Visit of relatives/ friends	6 or more time /month	4-5 times / month	2-3 times / month	Once/month	Not even once
3	Visit to upazila sadar	6 or more time / month	4-5 times / month	2-3times / month	Once / month	Not even once
4	Visit to other upazila sadar	4 or more time / month	2-3 times / 2 month	1-2 times/ 3month( )	Once / 6 month	Not even once
5	Visit to upazila agriculture office	1 or more time / month	2-3 times / 4 month	1-2 times/ 6 month	Once/ 6 month	Not even once
6	Visit to upazila/district agricultural fair	1 or more time / year	1-2 times / 3 year	2-3 times/ 6 year	Once / 6 year	Not even once

8. Extension contact

(Please mention the extent of your extension contact)

SL No	Contact with the persons	Extent of contact				
		Regularly (4)	Frequently (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1	Contact with AEO/AO	6 or more times/ year	4-5 times/ year	2-3 times /year	Once /year	Not even once
2	Contact with SAAO	2 or more times/month	1-2 times/ 2 month	1-2 times / 3 month	Once /6 month	Not even once
3	Contact with NGO officer	3 times or more /month	1-2 times/month	1-2 times /3 month	1 time / 6 month	Not even once
4	Participation in agricultural training	2 or more times/year	1 time/year	1 time/2 year	1time /4 year	Not even once
5	Contact with seed dealers	3 or more times/year	2 times / year	1 times / year	1 times / 2 year	Not even once
6	Conducted result demonstration	6 or more time in life	4-5 time in life	2-3 time in life	Once in life	Not even once
7	Listening krishi radio programme	4 or more times/ month	3 times/ month	2 times / month	Once / month	Not even once
8.	Watching Mati-O-Manush TV programme	4 or more times/ month	3 times/ month	2 times / month	Once / month	Not even once
9.	Attend agricultural group meeting	4 or more times/ year	3 times/ year	1-2 times /year	Once /year	Not even once
10.	Read krishi katha, krishi magazine, leaflet, booklet etc.	10 or more times/ year	6-9 times/ year	3-5 times/ year	1-2 times/ year	Not even once

9. Please mention the extent of problem faced for tobacco cultivation:

Sl No	Problems	Extent of Problem			
		High	Medium	Low	Not at all
1	Shortage of quality seeds				
2	High Price of seed				
3	High price of Chemical fertilizer				
4	Non-availability of credit in time				
5	Lack of training on tobacco cultivation				
6	Lack of marketing facilities				
7	Lack of proper knowledge in seed storage at farmers' level				
8	Lack of advice in proper time				
9	Unavailability of pesticides in time				
10	Low market price of tobacco product				
11	High cost of irrigation				
12	lack of co-operation from extension providers				
13	lack of knowledge on using balanced fertilizers for Tobacco cultivation				
14	Shortage of tobacco cultivation land				
15	Lack of proper storage capacity				

10. Tobacco Cultivation Knowledge

Please answer the following questions

SL. No.	Questions	Assigned score	Obtained marks
01	Name of tow high yielding varieties of Tobacco that you cultivated	2	
02	Mention two major insects of Tobacco	2	
03	What are the qualities of good Tobacco seeds?	2	
04	What type of soil is suitable for Tobacco cultivation?	2	
05	Name two major diseases of Tobacco	2	
06	Mention two harmful weeds of Tobacco	2	
07	What precautions should be followed at the time of pesticide application?	2	
08	Mention at least one insecticide, one fungicide and one herbicide of Tobacco.	2	
09	How much farmyard manure is required for Tobacco cultivation per bigha?	2	
10	Mention the intercultural operations in Tobacco seedbed	2	
11	Mention fertilizer doses in Tobacco cultivation(Urea, TSP and MP)	2	
12	Mention two important machineries used in Tobacco cultivation	2	
13	Mention the optimum age of seedlings for transplanting	2	
14	Mention seedling age for transplanting main field	2	
15	Mention the duration of Tobacco plant	2	
16	Mention the proper doses of fertilizer in tobacco cultivation	2	
Total		**32**	

11. Attitude towards Tobacco

Indicate the degree of agreement against the following statements

SL No	Statement	Nature of opinion				
		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
01	High price than other crops					
02	Less life duration compare to other crops					
03	Tobacco requires less amount chemical fertilizers					
04	Tobacco is more disease resistance than other crops					
05	Most of the pest can be controlled by clean cultivation.					
06	Less irrigation is required					
07	Less insect attack					
08	Tobacco has market safety					
09	Tobacco is less labor intensive					
10	No serious insect infestation was found in tobacco					
11	Tobacco cultivation is health hazards for men, women and children					
12	Tobacco cultivation is increasing in Bangladesh to a lack of effective tobacco farming control policy					
13	Marketing of tobacco a relatively safer than other crops					
14	Tobacco cultivated land is depleted at a much faster than traditional crops					

Thanks for your co-operation.

(…….)

APPENDIX – B

Correlation matrix of the dependent and independent variables (N= 109)

	A	B	C	D	E	F	G	H	I	J	K
A	1										
B	.025	1									
C	.065	.121	1								
D	.175	.227*	-.010	1							
E	.138	.121	.534*	.488**	1						
F	-.183	.312**	.018	-.215*	-.087	1					
G	-.135	.494**	-.006	.118	-.002	.682**	1				
H	-.194*	.467**	.155	-.065	-.022	.563**	.703**	1			
I	-.047	-.031	-.148	-.286**	-.326**	.333**	.183	.281**	1		
J	-.018	.199*	.222*	-.038	.154	.011	.084	.202*	-.197*	1	
K	.050	.555**	.193*	.194*	.188*	.334**	.570**	.523**	-.054	.263**	1

* Significant at 0.05 level

** Significant at 0.01 level

A= Age
B= Education
C= Farm Size
D= Annual Farm Income
E= Income from Tobacco
F= Organization Participation
G= Cosmopoliteness
H= Extension Contact
I = Problem
J= Knowledge
K= Attitude