

KNOWLEDGE & ATTITUDE OF FARMERS OF SMALL SCALE DAIRY FARMING IN DHAKA DISTRICT

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DEDICATED TO

My Beloved Parents

**KNOWLEDGE & ATTITUDE OF FARMERS OF SMALL SCALE DAIRY
FARMING IN DHAKA DISTRICT**

BY

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A Thesis

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ACRONYMS AND ABBREVIATIONS

AIS	Agriculture Information Service
BAU	Bangladesh Agricultural University
BBS	Bangladesh Bureau of Statistics
BLRI	Bangladesh Livestock Research Institute
LRI	Livestock Research Institute
DLS	Department of Livestock Services
DAE	Department of Agriculture Extension
et. al	All Others
etc.	et cetera, and the other
FAO	Food and Agriculture Organization
SAU	Sher-e-Bangla Agricultural University

ABSTRACT

The major purpose of this research study was to determine dairy farmer's knowledge and attitude towards dairy farms and also to explore the relationships between each of 12 selected characteristics of the dairy farmers and their knowledge and attitude towards dairy farming. The study was conducted in 5 Thana's under Dhaka district. The populations of dairy farmers in five Thana's were 182 and sample size was 58 (random sampling method used). An interview schedule was used for data collection. The data were collected during 5 May to 5 August 2018. Scales were developed in order to measure the variables. Majority of the farmers (36.2%) had medium knowledge and 34.5% farmers had low and 29.3% had high knowledge on dairy farming. Regarding attitude, the study showed that about 50% of the respondents had high favorable attitude, 43.1% of the respondents had unfavorable attitude and 6.9% of the respondents had Neutral attitude towards dairy farming. Age, level of education, annual income, Organizational participation, training received, extension media contact, Cosmopolitaness, herd size and Annual recurring expenditure of the dairy farmers had significant positive relationship and problem faced by dairy farmer had negative significant relationship with their knowledge on dairy farming, while land holding and milk production had no significant relationship with their knowledge on dairy farming. In case of attitude age, level of education, land holding, annual income, organization participation, training received, extension media contact, cosmopolitaness, herd size and annual recurring expenditure of the farmers had significant positive relationship with their attitude towards dairy farming and problem faced by dairy farmer and milk production of the farmers had no significant relationship with their attitude towards dairy farming. The findings of the study revealed that vast majority of the farmers (70.7%) had low to medium knowledge on dairy farming. Attitude of the farmers is not up to mark. A proportion of 50 percent of the farmers had high favorable attitude towards various aspects of dairy farming.

CHAPTER 1

INTRODUCTION

In Bangladesh, livestock is one of the most potential sub-sectors of agriculture which plays an indispensable role in promoting human health and national economy of the country. Livestock plays an important role in the national economy of Bangladesh with a direct contribution of around 3 % percent to the agricultural GDP and providing 15 percent of total employment in the economy. According to Bangladesh Economic Review, (2006), the growth rate in GDP in 2004-05 for livestock was the highest of any sub-sector at 7.23%, compared to 0.15% for crops, and 3.65% for fisheries sub-sector. The dairy system in Bangladesh is characterized by small-scale operations, coupled with crops and other on-farm activities. Based on the dairy cattle population, Bangladesh has secured 15th position among the top dairy cattle populated countries in the world (FAO, 2012).

Bangladesh suffers from an acute shortage of livestock products like milk, meat and eggs. The domestic demand for milk has been rising faster than the domestic production of milk. Hence Bangladesh Government has given the priority on the development of dairying at farmer's level to increase the supply of milk from small dairy farms. Dairying is an integral component of agriculture and it holds an important place in economy. In Bangladesh, the dairy sector is important for various reasons. Among these its complementarity with agriculture for example and has capability to enrich the protein diet of the vegetarian population is well documented. Dairying and agriculture are bandaged together by a set of reciprocal input-output relationships. Rural inequity can be balanced at a large extent which is not a very well-known contribution of dairying. Dairy sector provides to nearly the triple benefits of nutritive food, supplementary income and productive labor to farm families. Rearing dairy animals is a part of our ancient rural culture and is the most prevalent occupation established in the rural setting of our country even though adoption of scientific practices is minimum. This sector also provides insurance

against crop failures and helps directly to increase the farm production by making available the draught power, organic manure and cash income on a regular and day to day basis to meet daily requirement of their family (Singh R.V 2002).

Livestock production systems in our country have been mostly primitive and unorganized. Over 70% of the milk produced in our country is by landless small and marginal farmers who own one or two animals. The first three systems though quite meaningful to small, marginal and landless farming community and keep millions of farmers occupied but this limits the productivity to meet only the domestic demands in a small way and enable sale of the surplus to nearby markets. This Low input-low output production system may be sustainable for the poor farmers but not efficient biologically or on economic terms. With food crops production reaching a plateau in terms of production and productivity, there is a need for commercially viable diversification within and outside the crop production alternatives. Dairying definitely offers itself as a prospective farm diversification means with immense commercial potential (Balaraman, 2004).

The dairy farming has not only been an integral part of our economy but is also equally engrossed in our culture. The major product of livestock farming is milk and the other dairy products. These products have a special place in the national economy. Firstly, the dependency of people who make their living out of this dairy farming i.e. selling milk and other dairy products (vendors) are concerned with this enterprise. The secondly, major check of population of our country who find milk and its allied products as the major source of nourishment i.e. the consumers. Livestock production and dairy development have been viewed by planners and policy makers as an effective instrument of social and economic change in the rural areas, as they provide employment to the weaker sections and thereby help them in augmenting their income. In modernizing process of agricultural sectors of our economy, development of dairying and livestock has been given considerable importance as

complimentary, supplementary and separate instruments for social and economic change. To adjust the balance between demand and supply of milk in welfare of consumers and producers, it needs to increase in quantity of milk production as per the increase in milk production need; the application of the known scientific dairy innovations by the farmers should be verified to enhance the adoptability of improved dairy practices. It can be easily assumed that with the increase in the adoption of improved dairy practices the per capita availability of milk will increase. This undoubtedly requires change the attitude of farmers towards adopting improved dairy practices to get maximum profit. It is also required to speed of knowledge dissemination and adoption by dairy entrepreneurs (A.K. Singh, 2000).

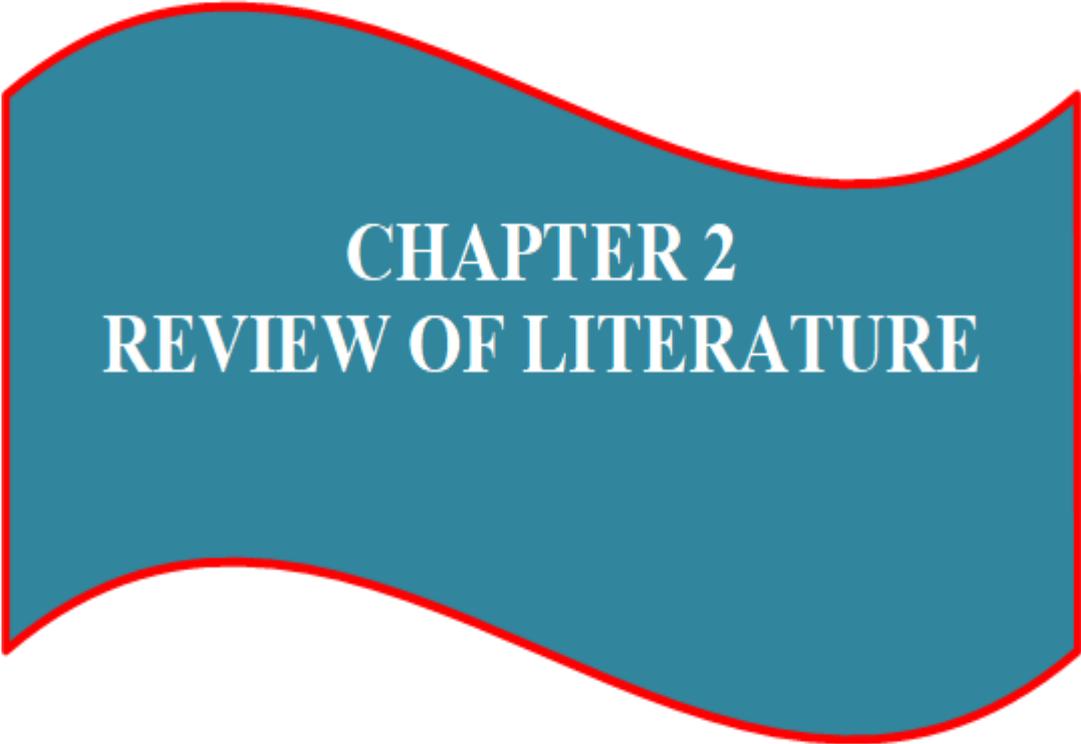
The foremost objective of dairy enterprise, like other enterprise, is to achieve maximum productivity and profitability. In this regard a vast networking of infrastructure for the development and dissemination of relevant dairy husbandry technologies/practices were designed since the very inception of our planned economic change. It is the hard fact that effective practices management and development of dairy owner specifically their abilities, knowledge and skill are of paramount importance for the mobilization and development of dairy farming. Dairy practices generally involve the integrated application of new technology about feeding, breeding, disease control and general management in a manner suitable for particular situation. 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 dairy farm refers to one's feeling towards the production of milk in various aspects. Today the dairy farmers are responsive to new ideas and are willing to take up improved practices. Even then the total milk production has always been for short of its requirement. For development of dairy programme various extension activities also importing to raise the level of knowledge, attitudinal changes and testing the transferring of improved dairy technology so as to bridge the gap between production and productivity from this enterprise. By and large attitude of dairy

farmer forms and essential end for the better implementation and success of dairy development programme. Keeping this in view an attempt was made to ascertain the level of attitude 'of farmers towards improved dairy practices (Suresh, 2004).

It is as above context, study was planned to investigate the exiting level of knowledge and attitude of dairy farmers towards improved of dairy practices of these milk producers will help to planner and dairy development agencies which can make positive effort in the development of dairy enterprise.

The present study was, therefore, designed with the following objectives:-\

- I) To study the socio-economic and psychological attributes of the selected dairy farmers.
- II) To determine the level of knowledge towards improved dairy practices of selected dairy farmers.
- III) To determine the attitude towards improved dairy practices of selected dairy farmers.
- IV) To study the relationship between selected characteristics with the knowledge and attitude of respondents towards improved dairy practices.



CHAPTER 2
REVIEW OF LITERATURE

CHAPTER 2

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 dairy farming.

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. Various 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”

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.

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

2.1.3 Past related research on knowledge

Prakash and Singh (2005) concluded that dairy farmers need easy financing system, close veterinary and AI services, cost production oriented price of milk and regular flow of technology for enhancing the dairy farming enterprise.

Singh et al. (2003) in his study concluded that the knowledge and adoption level of members toward recommended dairy management practices were moderate.

Vyas and Patel (2001) reported that inadequate or non-availability of timely veterinary services as an important constraint as perceived by the dairy farmers.

Ghosh and Chand (2000) conducted a study on adoption gap of recommended dairy husbandry technology. Finding showed that adoption gap were maximum in the area of breeding followed by healthcare, feeding and management.

Shinde et al. (1998) concluded from the present study that large numbers of respondents were illiterate; the number of adopters was much more from the group of illiterates.

Mote et al. (1997) found that majority of the dairy farmers belonged to middle age group (36 to 55 years). They also observed that the large number of the dairy farmers (40-50%) were having high school and above education.

Shinde et al. (1997) concluded from the findings that the personal, social economic and psychological characteristics were found to be correlated with the benefit of dairy development programme availed by dairy farmers.

Thomas and Sastry (1991) reported that the best method of dairying of the cow is by cutting down the concentrates in the ration, which was followed by only 17.50 percent households in the present study.

Prabhakaran and Siva (1986) reported the increased milk consumption with the relative increase in milk production and positive correlation of the milk consumption with land holding and social status.

Pawar and Kherde (1983) reported the areas in which knowledge gap was found were fodder production management, health care, feeding and breeding practices.

Halyan and Patel (1983) reported that membership in village organization was found to be significantly associated with the adoption of dairy farming.

2.2 Past related research on Attitude

Prakash (2005) found that attitude of the dairy farmers was found to be highly significant related with knowledge at 1% level of significance respectively.

Veeranna and Singh (2004) reported that 58 per cent had more favorable and 30 per cent had favorable attitude score towards dairy farming, respectively, while 12 per cent of them had less favorable attitude score towards dairy farming.

Kannan (2002) found that 63.00 per cent of the respondents had favorable attitude towards scientific dairy farming. Also observed that 24.15 per cent had neutral and 12.86 per cent had unfavorable attitude towards scientific dairy farming, respectively.

Singh and Singh (1988) statistically showed that there was positive trend in the attitude of farmers who have large land holding and high level of education.

Grade (1980) had earlier reported that a large number of farmers do not have a favorable attitude towards dairy farming as such.

Sharma (1980) reported highly significant positive relationship between the farmer's attitude towards dairying and adoption of dairy innovations in farmer.

2.2 Relationship between selected characteristics of the Farmers and their knowledge

2.1.1 Age

Prakash (2005) found that majority (64.00%) of dairy farmers were in middle age group i.e. 35 to 57 years.

Sah (2005) reported that majority of the respondents belong to the medium age groups (37 – 48 years) which was followed by the respondents of the young age groups.

Hossain (2003) observed in his study that the age of farmers had no noteworthy relationship on modern dairy farm practices

Kannan (2002) found that respondents were almost equally distributed among three categories of age i.e. young aged (34.29%), middle aged (35.71%) and old aged (30.00%).

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

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

2.1.2 Education

Azad (2014) in his study concluded that level of education of the farmers had significant relationship with their knowledge on dairy practices.

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.

Prakash (2005) observed that most of the respondents had medium level of education i.e. studied either up to middle or matric level (44.00%) while, 33.00 per cent had education above matric.

Chauhan et al. (2004) found that 30.00 per cent of dairy farmers were educated up to high school level followed by primary level (27.50%), middle school level (19.00%) and college level (13.50%), whereas 10.00 per cent of dairy farmers were illiterate.

Hossain (2003) found that education of the farmers had significant relationship with modern Dairy farm practices.

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

2.1.3 Land-holding

Babu (2007) observed that majority of the respondents (63.33%) having marginal land holding, followed by small (16.66%), medium (12.50%) and large (7.50%) land holding, respectively.

Sah (2005) in his study among the dairy entrepreneurs observed that majority of the respondents were in the small and marginal category i.e., having land holding up to 5 acres.

Kannan (2002) in their study reported that majority of the respondents were having medium size of land holding.

Kumar (1995) in his study found that majority of respondents were marginal farmers (42.50%) having land holding up to 2.5 acre.

2.1.4 Total annual income

Babu (2007) also revealed in his study at Andhra Pradesh that majority of the respondents.

Prakash (2005) reported that majority of the farmers are earning medium level of annual gross income ranging from Rs.75000-100000 per year followed by high level of income earning group.

Prakash (2005) reported that majority of the farmers are earning medium level of annual gross income ranging from Rs.75000-100000 per year followed by high level of income earning group received medium level of income from dairying.

Suresh (2004) reported that majority of milk producers were in medium income group (80.33%), followed by high and low income groups i.e. 15.00 per cent and 4.17 per cent, respectively.

2.1.5 Organizational Participation

Raut (2010) observed that majority (72.92%) of the respondents were having medium level of organizational participation, while 14.16 per cent were in high level followed by 12.92 per cent showed low level of social participation.

Prakash (2005) observed that most (62.50%) had medium level of organizational participation followed by low and high.

2.1.6 Training received

Baindha (2011) found out that majority (78.50%) of dairy farmers had not received any training, followed by 17.07 per cent of farmers who had received medium training (1-2 times) and 04.88% had received high training (more than 3 times).

Gaikwad (2010) observed that most of the respondents i.e. 73.00 per cent had medium level of training received. It was followed by high level of training (14.00%) and low level of training received (13.00%).

2.1.7 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 dairy farm practices.

Gaikwad (2010) denoted that maximum (61.00%) of the respondents had medium level of contact with extension agencies, followed by 27.00 per cent had low level contact and 12.00 per cent farmers had high extension contact.

Sah (2005) and Mohammad (2006) reported medium level of extension contact among their respondents.

Kannan (2002) in his study in Tamil Nadu concluded that majority of dairy farmers had low level of extension contact.

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

2.2.8 Herd size and knowledge

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

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

Prakash (2005) found that majority of farmers (68.75%) had maintained medium size of herd from 2 to 4 animals. 17.96 per cent of dairy farmers were maintaining small herd size.

Kannan (2002) in his study found that majority of the respondents (45.71%) were having small herd size.

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

2.1.9 Milk production & Knowledge

Lokhande (2009) in the study reported that 63.33 per cent of respondents had medium (11.34-32.20 litres/day) level of milk production, 17.50 per cent had high (>32.20 litres/day) milk production and 19.16 per cent had the low (<11.34 litres/day) level of milk production.

Prakash (2005) reported that majority (57.81%) of farmers fall in medium level of milk production category i.e. 12 to 28 litres per day.

Sah (2005) in his work revealed medium level of milk production i.e., between 8.3 to 26.38 litres / day among majority of the respondents (66.11%).

Kannan (2002) reported that 38.57 per cent of the dairy farmers had low level of milk production of 18.5 – 28 litres / day.

2.3. Relationship between selected characteristics of the Farmers and their Attitude

3.3.1 Age and attitude

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

Bhuiyan (2008), Zahan (2008), Islam (2007) and Chowdhury (2003) found similar result in their study.

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

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

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

3.3.2 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.

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

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

3.3.3 Herd size and attitude

Tarannum (2013) revealed in his study that herd size of the farmers had no relationship with their attitude towards improved agricultural implements.

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

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

3.3.4 Total annual income and attitude

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

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

3.3.5 Extension contact and attitude

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 dairy farms 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 dairy farming.

3.3.6 Problem faced on dairy farming 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 dairy production. Thus the knowledge and attitude were the main focus of the study and twelve (12) selected characteristics of the farmers' were considered as those might have relationship with knowledge and attitude. Farmers' knowledge and attitude towards dairy farming 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, Land holding, Annual income, Organizational participation, Training received, Extension contact, Cosmopolitaness, Herd size, Annual recurring expenditure, Milk production, Problem faced for dairy farming. The conceptual framework of the study has been presented in Fig. 2.1

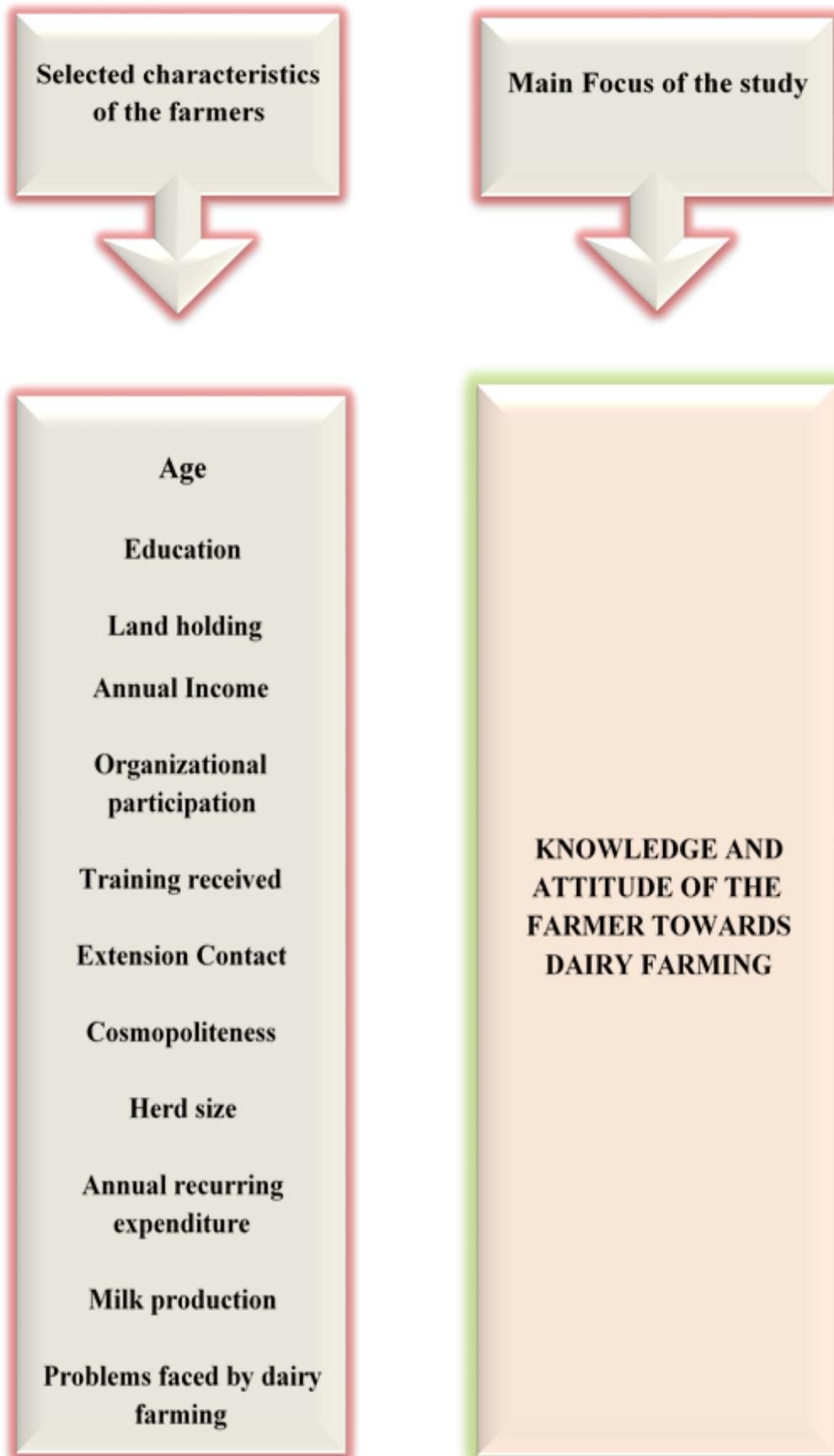
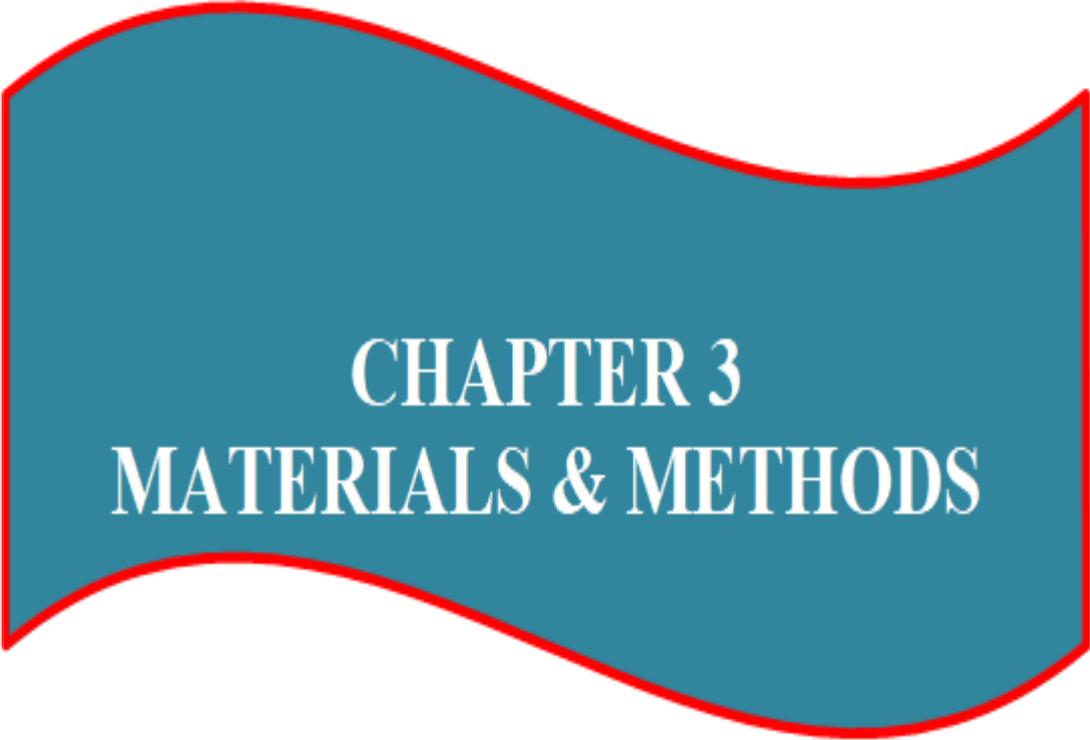


Figure 2.1 Conceptual Framework of the Study



CHAPTER 3
MATERIALS & METHODS

CHAPTER 3

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 Locale of the Study area

The research was led at Mohammadpur, keraniganj, Jatrabari, Mirpur & Savar Thana under Dhaka district. These Thana's were purposively selected. This was because Dairy farmers more in this area than other area. Sample of The dairy farmers under selected five Thana's were considered as the population of the study. The total sample size stood at 58. Moreover, a reserved list of 7 dairy farmers was prepared for use when the dairy farmers under sample were not available during data collection. In Dhaka district Mohammadpur, Keraniganj, Jatrabari, Mirpur & Savar Thana appearing the study area are presented in Fig.3.1.



Fig. 3.1 Map of the study area of Dhaka City

3.2 Selection of zone

Dhaka is divided into two city corporation viz. North zone and South zone. The two zones of Dhaka district was purposively selected for the present study for the following reasons.

- ✓ Presence of large number of commercial dairy farms.
- ✓ Well-developed infrastructure for dairy development.
- ✓ Northern region comprises of 58.30 percent of total cows and contributing 52.00 percent of total milk production in the Dhaka district.

3.3 Population and Sample

The dairy farmers under selected five Thana's were considered as the population of the study. A list of dairy farmers who are currently producing milk was prepared with the help of Department of livestock services and its field staffs. The number of dairy farmers of the selected five Thana's was 182 which constituted the population of the study. About 30 percent of the population was selected proportionally from the selected Thana's as the sample by following random sampling method. Thus, the total sample size stood at 58. Moreover, a reserved list of 7 dairy farmers was prepared for use when the dairy farmers under sample were not available during data collection. The distribution of the selected dairy farmers with reserve (10%) list of the selected Thana's is shown in the table 3.1.

Table 3.1 Distribution of the sampled farmers in the study area

Name of Thana	Distribution of farmers	Reserve List (10%)
Mohammadpur	12	2
Keraniganj	10	1
Jatrabari	11	1
Mirpur	12	1
Savar	13	2
Total	58	7

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 Dependent and Independent Variables

The successful selection of variables results in 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 & attitude regarding dairy practices were the main focus of this study and it was considered as the predicted variables. The researcher selected twelve (12) causal variables. Characteristics of the farmers like age, education, land holding, annual income, Organizational participation, Training received, Extension contact, Cosmopolitaness, Herd size, Annual recurring expenditure, Milk production, problem faced for dairy farming were selected as the causal variables.

3.5 Data Collecting Procedure

For the purpose of data collection, a semi-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 herself through face to face interview. The study was purposively conducted in the Dhaka district of Bangladesh. Before starting collection of data, the researchers met with department of livestock services (DLS) in order to explain the objectives of the study and requested them to provide necessary help and co-operation in collection of data. 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 90 days from 5 May to 5 August 2018.

3.6 Measurement of Variables

The different characteristics of the dairy farmers might have impact on their knowledge and attitude towards dairy farm practices. These characteristics were like age, education, land holding, annual income, Organizational participation, Training received, Extension contact, Cosmopolitaness, Herd size, Annual recurring expenditure, Milk production, problem faced for dairy farming were the main center of the study. Measurement of all the factors of the dairy farmers and their knowledge and attitude towards dairy farming are discussed in the following sub sections:

3.6.1 Age

It refers to the chronological age of the respondents (in years) rounded to the nearest whole number at the time of interview. It was ascertained by direct

questioning and a unit score was given to each year. 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

It refers to the formal education of the respondents obtained from any institution. Education was measured by direct questioning and categorized into illiterate (no schooling), primary (up to 5 years of schooling), middle (up to 8 years of schooling), secondary (up to 10 years of schooling), higher secondary (up to 12 years of schooling) and college education (graduation and above) by using Somasundaram scale (1995).

3.6.3 Land holding

The land holding 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:

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

Where,

A1 = 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

3.6.4 Annual income

Annual income of dairy farmers was measured in Thousand Taka. The total yearly earning from agricultural (field crops, vegetables, 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 dairy farmers. A score of one was given for each Tk. 1,000 to compute the annual income scores of the respondents.

3.6.5 Organizational participation

Social participation was conceptualized as respondents' participation in social institutions as a member or as an office bearer. It is referred as the degree of involvement of the respondents in any formal or informal social organization as a member or office bearer.

Organizational participation of a respondent was measured by the nature of his involvement and duration 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.

3.6.6 Training received

This variable can be measured by asking respondents, how many training they have gone through? It is the total number of trainings they have received for improved dairy farming practices in general as well as related with rearing of cross-bred cows, in particular, arranged either by Milk Co-operative, State Animal Husbandry Department or NGO etc.

3.6.7 Extension contact

This variable was measured by computing an extension contact score on the basis of a dairy 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.

3.6.8 Cosmopolitaness

Cosmopolitaness of a respondent referred to frequency of visit to different places outside from her own village. The following scale was used for computing cosmopolitaness score of a respondent. Each respondent was asked to indicate the extent of his Cosmopolitaness. 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 cosmopolitaness score of a respondent. The range of cosmopolitaness score could be from ‘0’ to ‘24’, where ‘0’ indicates ‘no cosmopolitaness’ and ‘24’ indicates ‘very high cosmopolitaness’.

3.6.9 Herd size

In present study, herd size refers to the total number of bovines of different age group, i.e. cattle (local and cross bred) owned by the respondent at the time of investigation. It was ascertained by direct questioning/measured with the help of a schedule and then the respondents were categorized into small, medium and large by using the mean and standard deviation.

3.6.10 Annual recurring expenditure

Recurrent expenditure on goods and services is expenditure, which does not result in the creation or acquisition of fixed assets (new or second-hand). It consists mainly of expenditure on wages, salaries and supplements, purchases of goods and services and consumption of fixed capital (depreciation). With five (5) alternative responses as “Very high”, “High”, Medium” “low” and “Very low” basis and weights were assigned as 4, 3, 2, 1 and 0 respectively.

3.6.11 Total milk production

It refers to the average total quantity of milk in liters per day produced by household on previous day of data collection. It was measured with the help of schedule or the information was collected by directly asking to the respondent.

3.6.12 Problem faced in dairy farming

Dairy farmer's knowledge and attitude in regard with improved dairy practices plays an important role for dairy development and increase the milk productivity per unit of milch animal in rural areas where dairy farmer's mostly used tradition system of dairy farming. In rural India there exit wide gap between demand and supply of milk on per capita basis. Dairy planners suggested that milk production in the country needs to be changed from traditional milk production to commercialized production and is only possible when milk producer adopted improved milk production technology. Improved milk production dairy technology has tremendous potential for high production of milk and other dairy product. There are various factors, which are

responsible for low adoption of these available improved dairy technologies, knowledge and attitude of farmers towards improved dairy technology, found to most important amongst other factors.

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.

3.6.13 Knowledge on dairy farming

After through consultation with relevant experts and reviewing of related literature, 16 questions regarding dairy farm were selected and those were asked to the respondents to determine their knowledge on dairy farm practices. 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 dairy farm score of the respondent could range from 0 to 32, where zero (0) indicating very poor knowledge and 32 indicate the very high knowledge on dairy farming.

3.6.14 Attitude towards dairy farming

An attitude may be defined as predisposition to act towards an object in a certain manner. Attitude of a farmer towards Small scale dairy farming was used to refer to his belief, feelings and action towards the various aspects dairy farming .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 dairy farming. 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 0 to 70 where “0” indicating highest unfavorable and “70” for highest favorable attitude towards dairy farming.

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 of 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 dairy farmers and their i) knowledge and ii) attitude towards small scale dairy farming. Each of the 9 selected characteristics of the dairy farmers will have significant relationship with their i) knowledge and ii) attitude towards dairy farming.”

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 dairy farmers

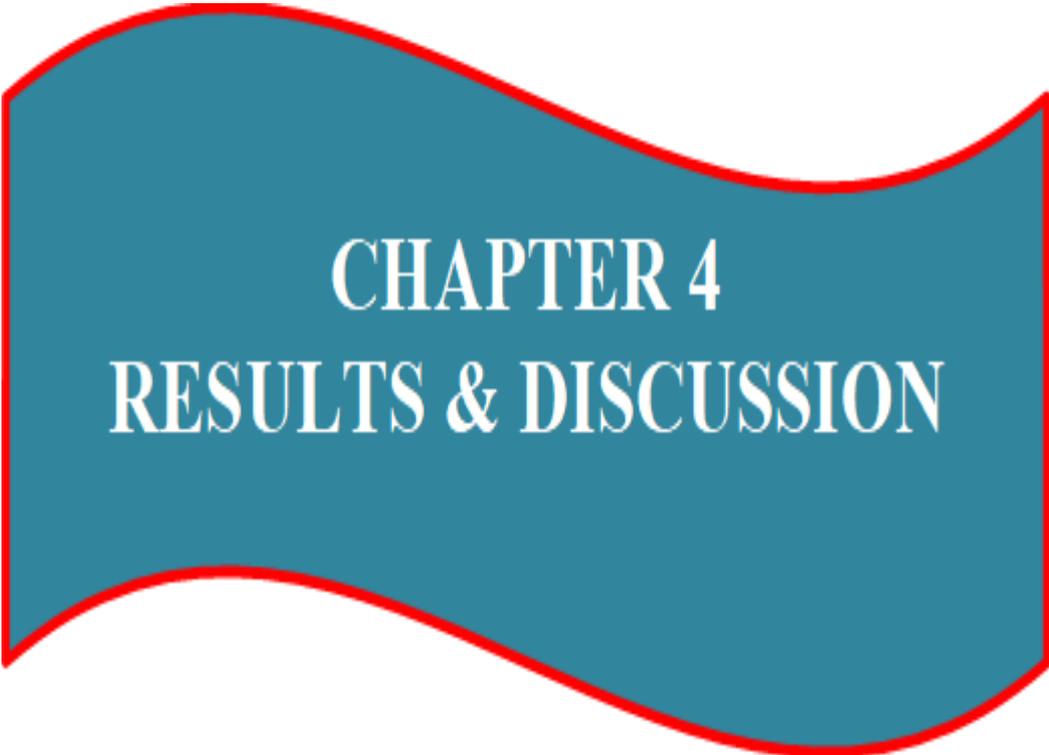
and their i) knowledge and ii) attitude towards dairy farming “The selected characteristics were age, education, farm size, Total annual income , Organizational participation Cosmopolitaness, Extension contact, problem faced for dairy farming .

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 master 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 Analysis

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. Initially, 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 4
RESULTS & DISCUSSION

CHAPTER 4

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 dairy farming

- ✓ Third section: Relationships between the selected characteristics of the dairy farmers on their knowledge & attitude regarding dairy farming

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 reactivity, expressing capacity, experience and individual modes of adjustment. It was therefore, assumed that attitude towards dairy farming would be influenced by various characteristics of the farmers. Twelve characteristics of the respondents were selected to find out their relationship with knowledge & attitude towards dairy farming. This has been discussed in the final section of this chapter. The selected characteristics included Age, Education, Land holding, Annual income, Organizational participation, Training received, Extension contact, Cosmopolitaness, Herd size, Annual recurring expenditure, Milk production, Problem faced for dairy farming. The salient features of the twelve (12) characteristics of the farmers are presented in Table 4.1.

Table 4.1 Salient features of the selected characteristics of the farmers

Sl. No	Characteristics	Unit of measurement	Possible range	Observed range	Mean	SD
1	Age	Year	unknown	24-60	39.52	9.17
2	Level of education	Level of schooling	unknown	0-15	5.47	5.12
3	Land holding	Hectare	unknown	0.2-3.10	1.00	0.72
4	Annual income	“000” Taka	unknown	200-940	422.24	200.77
5	Organizational participation	“000” Taka	0-21	7-21	14.26	3.79
6	Training received	Year	1-5	1-5	3.01	1.08
7	Extension contact	Score’s	0-28	7-28	15.77	6.47
8	Cosmopolitaness	Score’s	0-24	6-24	15.48	3.89
9	Herd size	Score’s	1-5	1-5	2.70	1.15
10	Annual recurring expenditure	Score’s	0-24	7-24	16.76	4.27
11	Milk production	Litre	1-5	1-5	2.88	1.09
12	Dairy farming problems	Score’s	0-45	15-40	29.27	6.55

4.1.1 Age

Age of the respondents ranged from 29 to 58 years, the average being 39.52 years and the standard deviation was 9.17. 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 dairy farmers according to their age

Categories	Basis of categorization (year)	Respondents	
		Numbers	Percent
Young	Up to 35	20	34.5
Middle	36-50	30	51.7
Old	Above 50	8	13.8
Total		58	100

4.1.2 Level of Education

The education score of the dairy farmers ranged from 0-15, with an average of 5.47 and standard deviation 5.12. Based on their education scores, dairy 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 dairy farmers according to their education is shown in Table 4.3.

Table.4.3. Distribution of the dairy farmers according to their education

Categories	Basis of categorization (Level of schooling)	Respondents	
		Numbers	Percent
Illiterate	0	9	15.5
Can sign only	0.5	10	17.2
Primary level	1-5	15	25.9
Secondary level	6-10	11	19.0
Higher Secondary level	Above 10	13	22.4
Total		58	100

Data presented in table 4.3 indicated the most of the farmers (25.9%) belong to the primary level category, 15.5% of the farmers had no education, 17.2% of them can sign only, 19% of them belong to the secondary level and 22.4% of the farmers had higher secondary qualification.

4.4.3 Land holding

Farm size varied from 0.20 to 3.10 hectares with an average of 1.0 hectares and standard deviation of 0.72. 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 land holding

Categories	Basis of categorization (Hectare)	Respondents	
		Numbers	Percent
Small	0.2 - <1	34	58.6
Medium	1 - <3	23	39.7
Large	Above 3	1	1.7
Total		58	100

The data in the Table 4.4 revealed that majority of the respondents (58.6 percent) had Small land while 39.7 percent had medium land and 1.7 percent had large land.

4.1.4 Annual income

Income from dairy farming of the dairy farmers ranged from Taka 200-940 thousand, the mean being 422.24 and standard deviation 200.77. On the basis of their annual income scores, the dairy farmers were divided three categories- “low income” “medium income” and “high income”. The distribution of the dairy farmers according to their income from dairy farming is shown in Table 4.5.

Table 4.5 Distribution of the farmers according to their income from dairy farming

Categories	Basis of categorization (“000” Taka)	Respondents	
		Numbers	Percent
Low income	300-600	48	82.8
Medium income	601-900	6	10.3
High income	Above 900	4	6.9
Total		58	100

Data presented in table 4.6 , the majority (82.8 percent) of the dairy farmers had low income compared to 10.3 percent medium income and 6.9 percent high income from dairy farming. Thus, the overwhelming majority (93.1 percent) of the farmers had low to medium annual income from dairy farming.

4.1.5 Organizational participation

Organizational participation observed scores ranged from 7 to 21 with the mean of 14.26 and standard deviation of 3.79. The respondents were classified into three categories which are shown in Table 4.6.

Table 4.6 Distribution of the farmers according to their organizational Participation

Categories	Basis of categorization (year)	Respondents	
		Numbers	Percent
Low	Up to 12	24	41.4
Medium	12-16	14	24.1
High	Above 16	20	34.5
Total		58	100

Data furnished in Table 4.6 indicate that the highest proportion (41.4%) of the respondents felt in the “low” category and 24.1% felt in “medium” category and 34.5% felt in high category

4.1.6 Training received

Training keeps the mind ready to transfer the know-how available to a wider area. It is important in development of skill & competency in doing a particular job.

Table 4.7 Distribution of the farmers according to their exposure to training

Categories	Basis of categorization (Year)	Respondents	
		Numbers	Percent
Low	Below 2	19	32.8
Medium	2-4	35	60.3
High	Above 4	4	6.9
Total		58	100

Data presented in table 4.7 indicated the most of the farmers (60.3%) had medium exposure to training followed by low (32.8%) and high (6.9%) farmers had low exposure to training respectively.

4.1.7 Extension media contact

The observed extension contact scores of the dairy farmers ranged from 7 to 28 against the possible range from 0 to 28, the mean and standard deviation were 15.77 and 6.47 respectively. According to this score, the dairy farmers were classified into three categories:

Table 4.8 Distribution of the farmers according to their Extension contact

Categories	Basis of categorization (Score's)	Respondents	
		Numbers	Percent
Low	Below 12	23	39.7
Medium	12-18	14	24.1
High	Above 18	21	36.2
Total		58	100

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

4.1.8 Cosmopolitaness

The observed cosmopolitaness scores of the dairy farmers ranged from 6 to 24 with an average of 15.48 and a standard deviation of 3.89 against the possible range of 0 to 24. On the basis of their cosmopolitaness scores, the dairy farmers were classified into three categories: “low cosmopolitaness”, “medium

cosmopolitanism” and “high cosmopolitanism”. The distribution of the dairy farmer according to their cosmopolitanism is shown in Table 4.9

Table 4.9 Distribution of dairy farmers according to cosmopolitanism

Categories	Basis of categorization (Score's)	Respondents	
		Numbers	Percent
Low cosmopolitanism	Below 13	16	27.6
Medium cosmopolitanism	13-17	22	37.9
High cosmopolitanism	Above 17	20	34.5
Total		58	100

Table 4.1.9 Herd size

Development in the field of dairy, directly or indirectly may be concerned with the size of their enterprise.

Table 4.10 Distribution of farmers according to their herd size

Categories	Basis of categorization (Number)	Respondents	
		Numbers	Percent
Low	Below 1	29	50.0
Medium	1-3	13	22.4
High	Above 3	16	27.6
Total		58	100

Data presented in table 4.10 indicated the most of the farmers (50%) had small herd size followed by large (27.6%) and (22.4%) had medium herd size respectively.

4.1.10. Annual recurring expenditure

Table 4.11 Distribution of the farmers according to their recurring expenditure

Categories	Basis of categorization(Score's)	Respondents	
		Numbers	Percent
Low	Below 14	16	27.6
Medium	14-18	21	36.2
High	Above 18	21	36.2
Total		58	100

4.1.11 Milk production

The quantity and economics of milk production directly affects the respective return and simultaneously causes economic status of farmers.

Table 4.12 Distribution of farmers according to the milk production per day

Categories	Basis of categorization (Litre)	Respondents	
		Numbers	Percent
Low	Below 1	22	37.9
Medium	1-3	30	51.7
High	Above 3	6	10.3
Total		58	100

Data shows that out of the 58 respondent the maximum of (51.7%) received medium quantity of milk followed by (37.9%) high and (10.3%) low group of milk production respectively. Thus, it may be concluded that the majority of

farmers received medium milk production category followed by high and low respectively.

4.1.12. Problem faced in dairy farmers

The problem faced score of the dairy farmers ranged observed from 15-40 against the possible score of 0-45 with a mean of 29.27 and standard deviation of 6.55 Based on the problem faced scores, the dairy farmers were classified into three categories: “low problem”, “medium problem” and “high problem” The distribution of the dairy farmers according to their problem faced is presented in Table 4.13

Table 4.13 Distribution of the dairy farmers according to their problem faced in dairy farming

Categories	Basis of categorization (Score's)	Respondents	
		Numbers	Percent
Low	Below 26	18	31.0
Medium	26-32	21	36.2
High	Above 32	19	32.8
Total		58	100

In table 4.13 about 32.8 percent of the dairy farmers had high problem compared to 36.2 percent of them having medium problem and 31 percent having low problem.

4.1.13 Knowledge on dairy farming

Dairy farmers' knowledge scores could theoretically range from 0 to 32. But their observed knowledge scores ranged from 15 to 30, the mean being 23.00 and standard deviation 3.89. 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 4.14.

Table 4.14 Distribution of the dairy farmers according to their knowledge on dairy farming

Categories	Basis of categorization (Score's)	Respondents	
		Numbers	Percent
Low	Up to 22	20	34.5
Medium	23 – 27	21	36.2
High	Above 27	17	29.3
Total		58	100

Majority (36.2%) of the farmers possessed medium knowledge and 34.5% and 29.3% of the farmers possessed low and high knowledge on dairy farming respectively. It means that overwhelming majority (65.5%) of the farmers had medium to high knowledge.

4.1.14 Attitude towards dairy farming

Farmers’ attitude towards dairy farms 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 4.15

Table 4.15 Distribution of the farmers' according to their attitude towards Dairy farming

Categories	Basis of categorization (Score's)	Respondent	
		Numbers	Percent
Unfavorable attitude	Below 35	25	43.1
Neutral attitude	exactly 35	4	6.9
Favorable attitude	Above 35	29	50
Total		58	100

Data contained in Table 4.15 indicated that majority (50 percent) of the respondent had favorable attitude towards dairy farming compared to 43.1 percent had unfavorable attitude and 6.9 percent had neutral attitude towards dairy farming.

4.2 Relationship between the selected characteristics of the respondents and their knowledge towards dairy farming

The purpose of this section is to explore the relationships of the selected characteristics of the dairy farmers with their knowledge on dairy farming. 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 (0.01) 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 4.16.

4.16 The Pearson's correlation showing relationship between dependent (Knowledge of the farmers towards Dairy farm) and independent variables

Dependent Variable	Independent Variable	Value of Co-efficient Correlation	Table Value Significant at 56 df	
			0.05% level	0.01% level
Knowledge of the farmers towards dairy farming	Age	.309*	0.218	0.335
	Education	.683**		
	Land holding	-.057		
	Annual Income	.535**		
	Organizational Participation	.687**		
	Training received	.814**		
	Extension Media Contact	.898**		
	Cosmopolitaness	.523**		
	Herd Size	.530**		
	Annual Recurring Expenditure	.539**		
	Milk Production	.177		
	Problem Faced for Dairy farm	-.299*		

* Significant at 0.05 level

** Significant at 0.01 level

4.2.1 Relation between age and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between age of the farmers and their knowledge on dairy farm was found to be .309 (table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (.218) was found smaller than that of the tabulated value (0.309) with 56 df 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 dairy farmers was insignificant. So, there is no relationship of age of the farmers with their knowledge on dairy farming. Roy (2006) found that age of the farmer had no significant relationship with their knowledge on dairy farming. Similar result was observed by Anu (2016), Monalesa (2014), Khan (2005), Islam (2005) and Rahman (2004) in their respective studies.

4.2.2 Relation between education level and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between education level of the farmers and their knowledge on dairy farming was found to be 0.683** (table 4.16). The following observation was recorded on the basis of correlation coefficient:

- The computed value of “r” (0.683**) was found larger than that of the tabulated value (0.218) with 56 df at 0.01 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 dairy farmers was positively significant. So, there is a positive relationship of education of the farmers with their knowledge on dairy farming. Similar result was observed by Rahman (2015) and Monalesa (2014) in their respective studies.

4.2.3 Relation between land holding and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between farm size of the farmers and their knowledge on dairy farming was found to be $-.057$ (table 4.16). The following observation was recorded on the basis of correlation coefficient:

- The computed value of “ r ” ($-.057$) was found smaller than that of the tabulated value (0.218) with 56 df 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 of the dairy farmers was negatively insignificant. So, there is no relationship of land holding of the farmers with their knowledge on dairy farming. Similar result was observed by Monalesa (2014) & Chowdhury (2014) in their respective studies.

4.2.4 Relation between annual income and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between annual income of the farmers and their knowledge on dairy farming was found to be $.535^{**}$ (table 4.16). The following observation was recorded on the basis of correlation coefficient:

- The computed value of “ r ” ($.535^{**}$) was found larger than that of the tabulated value (0.335) with 56 df 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 annual income of the dairy farmers was positively significant. So, there is positive relationship of annual income of the farmers with their knowledge towards dairy farming. Similar result was observed by Rabby (2014) & Amin (2006) in their respective studies.

4.2.5 Relation between organizational participation and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between organization participation of the farmers and their knowledge on dairy farming was found to be 0.687** (table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.687) was found larger than that of the tabulated value (0.335) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was significant\
- .The null hypothesis was rejected.

The findings indicated that the organization participation of the dairy farmers was significant. So, there is positive relationship of organizational participation of the farmers with their knowledge on dairy farming.

4.2.6 Relation between Training received and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between Training received of the farmers and their knowledge on dairy farming was found to be 0.814** (table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.814**) was found larger than that of the tabulated value (0.335) with 56 df at 0.01 level of probability.

- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the Training received of the dairy farmers was significant. So, there is positive relationship of organization participation of the farmers with their knowledge on dairy farming.

4.2.7 Relation between extension media contact and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between extension media contact of the farmers and their knowledge on dairy farming was found to be 0.898** (table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.898**) was found larger than that of the tabulated value (0.335) with 56 df 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 dairy farmers was positively significant. So, there is positive relationship of extension media contact of the farmers with their knowledge on dairy farming. Similar result was observed by Anu (2016), Rahman (2015), Monalesa (2014) and Chowdhury (2014) in their respective studies.

4.2.8 Relation between cosmopolitaness and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between cosmopolitaness of the farmers and their knowledge on dairy farming was found to be 0.523** (table 4.16). 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 (0.335) with 56 df at 0.01 level of probability.
- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the cosmopolitaness of the dairy farmers was significant. So, there is positive relationship of cosmopolitaness of the farmers with their knowledge on dairy farming.

4.2.9 Relation between Herd size and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between herd size of the farmers and their knowledge on dairy farming was found to be 0.530** (table 4.16). The following observation was recorded on the basis of correlation coefficient:

- The computed value of “r” (0.530**) was found larger than that of the tabulated value (0.335) with 56 df 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 herd size of the dairy farmers was positively significant. So, there is a positive relationship of herd size of the farmers with their knowledge on dairy farming. Similar result was observed by Monalesa (2014) & Chowdhury (2014) in their respective studies.

4.2.10 Relation between Annual recurring expenditure and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between Annual recurring expenditure of the farmers and their knowledge on dairy farming was found to be 0.539** (table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.539**) was found larger than that of the tabulated value (0.335) with 56 df at 0.01 level of probability.
- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the Annual recurring expenditure of the dairy farmers was significant. So, there is positive relationship of Annual recurring expenditure of the farmers with their knowledge on dairy farming.

4.2.11 Relation between Milk production and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation between Milk production of the farmers and their knowledge on dairy farming was found to be 0.177 (table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.177) was found smaller than that of the tabulated value (0.218) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant
- . The null hypothesis was accepted.

The findings indicated that the Milk production of the dairy farmers was insignificant. So, there is no relationship of Milk production of the farmers with their knowledge on dairy farming.

4.2.12 Relation between problems faced for dairy farming and knowledge of the farmers towards dairy farming

Computed value of the co-efficient of correlation problem faced for dairy farming of the farmers and their knowledge on dairy farming was found to be - 0.299*(table 4.16). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (-0.299*) was found smaller than that of the tabulated value (0.218) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was negatively significant.
- The null hypothesis was accepted.

The findings indicated that problem faced for dairy farming of the dairy farmers was negatively significant. So, there is negative relationship of problem faced for dairy farming of the farmers with their knowledge on dairy farming. 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 dairy farming

To examine the relationship of the nine selected characteristics of the respondents with their attitude towards dairy farming was the purpose of this section. The twelve selected characteristics were: age, education, land holding, annual income, Organizational participation, Training received, Extension contact, Cosmopolitaness, Herd size, Annual recurring expenditure, Milk production, and problem faced for dairy farming. 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 dairy farming. Five percent (0.05%) and one percent (0.01%) 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 dairy farming are shown in table 4.17.

4.17 The Pearson’s correlation showing relationship between dependent (attitude towards dairy farming) and independent variable

Dependent Variable	Independent Variable	Value of Co-efficient Correlation	Table Value Significant at 56 df	
			0.05%	0.01%
Attitude towards dairy farming	Age	.328*	0.218	0.335
	Education	.545**		
	Land holding	-.065		
	Annual Income	.639**		
	Organizational Participation	.700**		
	Training received	.702**		
	Extension Media Contact	.802**		
	Cosmopolitaness	.493**		
	Herd Size	.464**		
	Annual Recurring Expenditure	.523**		
	Milk Production	.124		
	Problem Faced for Dairy farm	-.222		

* Significant at 0.05 level

** Significant at 0.01 level

4.3.1 Relation between age and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between age of the farmers and their attitude towards dairy farming was found to be .328* (table 4.17). The

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

- The computed value of “r” (0.328*) was found larger than that of the tabulated value (0.218) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the age of the dairy farmers was significant. So, there is positive relationship of age of the farmers with their attitude towards dairy farming. Similar result was observed by Monalesa (2014) and Amin (2006) in their respective studies.

4.3.2 Relation between education and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between education of the farmers and their attitude towards dairy farming was found to be 0.545** (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.545**) was found larger than that of the tabulated value (0.335) with 56 df 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 dairy farmers was positively significant. So, there is positive relationship of education of the farmers with their attitude towards dairy farming. Similar result was observed by Rahman (2015) in his study.

4.3.3 Relation between land holding and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between farm size of the farmers and their attitude towards dairy farming was found to be -0.065 (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “ r ” (-0.065) was found smaller than that of the tabulated value (0.218) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was negatively significant.
- The null hypothesis was accepted.

The findings indicated that the farm size of the dairy farmers was negatively significant. So, there is no relationship of land size of the farmers with their attitude towards dairy farming. Similar result was observed by Monalesa (2014), Rabby (2014) and Amin (2006) in their respective studies.

4.3.4 Relation between annual income and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between annual income of the farmers and their attitude towards dairy farming was found to be $.639^{**}$ (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “ r ” ($.639^{**}$) was found larger than that of the tabulated value (0.335) with 56 df 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 dairy farmers was positively significant. So, there is positive relationship of annual income of the farmers with their attitude towards dairy farming. Similar result was observed by Rabby (2014) & Amin (2006) in their respective studies.

4.2.5 Relation between organizational participation and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between organization participation of the farmers and their attitude on dairy farming was found to be 0.700** (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.700**) was found larger than that of the tabulated value (0.335) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the organization participation of the dairy farmers was significant. So, there is positive relationship of organization participation of the farmers with their attitude on dairy farming.

4.2.6 Relation between Training received and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between organization participation of the farmers and their attitude on dairy farming was found to be 0.702** (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.702**) was found larger than that of the tabulated value (0.335) with 56 df at 0.01 level of probability.
- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the organization participation of the dairy farmers was significant. So, there is positive relationship of organization participation of the farmers with their attitude on dairy farming.

4.2.7 Relation between extension media contact and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between extension media contact of the farmers and their attitude on dairy farming was found to be 0.802** (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.802**) was found larger than that of the tabulated value (0.335) with 56 df 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 dairy farmers was positively significant. So, there is positive relationship of extension media contact of the farmers with their attitude on dairy farming. Similar result was observed by Anu (2016), Rahman (2015), Monalesa (2014) and Chowdhury (2014) in their respective studies.

4.2.8 Relation between cosmopolitaness and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between cosmopolitaness of the farmers and their attitude on dairy farming was found to be 0.493** (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.493**) was found larger than that of the tabulated value (0.335) with 56 df at 0.01 level of probability.
- The relationship between the concerned variables was significant.

- The null hypothesis was rejected.

The findings indicated that the cosmopolitanism of the dairy farmers was significant. So, there is positive relationship of cosmopolitanism of the farmers with their attitude on dairy farming.

4.2.9 Relation between Herd size and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between farm size of the farmers and their attitude on dairy farming was found to be 0.464** (table 4.17). The following observation was recorded on the basis of correlation coefficient:

- The computed value of “r” (0.464**) was found larger than that of the tabulated value (0.335) with 56 df at 0.01 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 dairy farmers was positively significant. So, there is a positive relationship of herd size of the farmers with their attitude on dairy farming. Similar result was observed by Monalesa (2014) & Chowdhury (2014) in their respective studies.

4.2.10 Relation between Annual recurring expenditure and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between Annual recurring expenditure of the farmers and their attitude on dairy farming was found to be 0.523* (table 4.17). 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 (0.335) with 56 df at 0.01 level of probability.

- The relationship between the concerned variables was significant.
- The null hypothesis was rejected.

The findings indicated that the Annual recurring expenditure of the dairy farmers was significant. So, there is positive relationship of Annual recurring expenditure of the farmers with their attitude on dairy farming.

4.2.11 Relation between Milk production and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation between Milk production of the farmers and their attitude on dairy farming was found to be 0.124 (table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (0.124) was found smaller than that of the tabulated value (0.218) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was insignificant.
- The null hypothesis was accepted.

The findings indicated that the Milk production of the dairy farmers was insignificant. So, there is no relationship of Milk production of the farmers with their attitude on dairy farming.

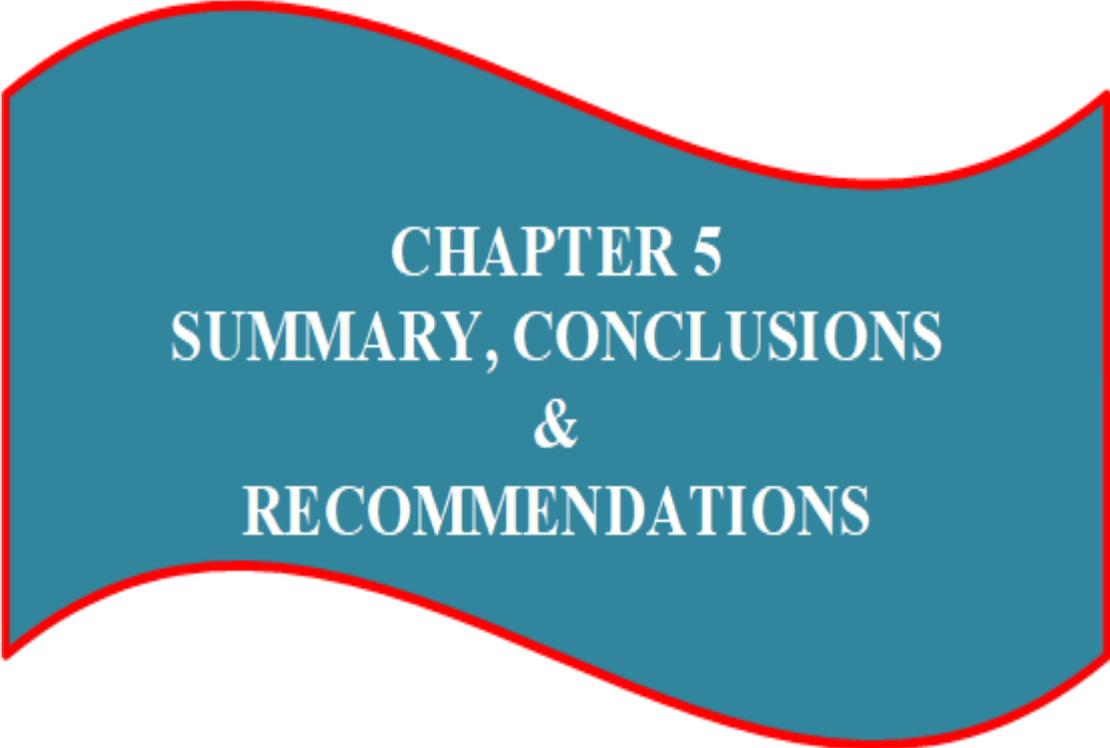
4.2.12 Relation between problems faced for dairy farming and attitude of the farmers towards dairy farming

Computed value of the co-efficient of correlation problem faced for dairy farming of the farmers and their attitude on dairy farming was found to be - 0.222(table 4.17). The following observations were recorded regarding the relationship between the two variables under consideration:

- The computed value of “r” (-0.222) was found smaller than that of the tabulated value (0.218) with 56 df at 0.05 level of probability.
- The relationship between the concerned variables was negatively significant.

- The null hypothesis was accepted.

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



CHAPTER 5
SUMMARY, CONCLUSIONS
&
RECOMMENDATIONS

CHAPTER 5

SUMMARY, CONCLUSION & RECOMMENDATION

“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).

The findings of the study revealed that vast majority of the farmers (65.5%) had medium to high knowledge on dairy farming. Knowledge of the farmers had significant positive relationship with their education, annual income, organization participation, training received, cosmopolitaness, herd size, annual recurring expenditure. While knowledge of the farmers had negatively significant with their dairy farming problem. Therefore, it may be concluded that it would be a wishful thinking to improve the overall situation of knowledge by taking care of the factors related to the increase of knowledge among the farmers. Attitude of the farmers is not up to mark. A proportion of 50 percent of the farmers had high favorable attitude towards various aspects of dairy farming. It may be concluded that the production of milk will not be possible to improve to a significant extent unless the concerned authorities take proper steps to improve farmer’s attitude towards dairy farming. Education of the farmers had significant positive relationship with their knowledge and attitude towards dairy farming.

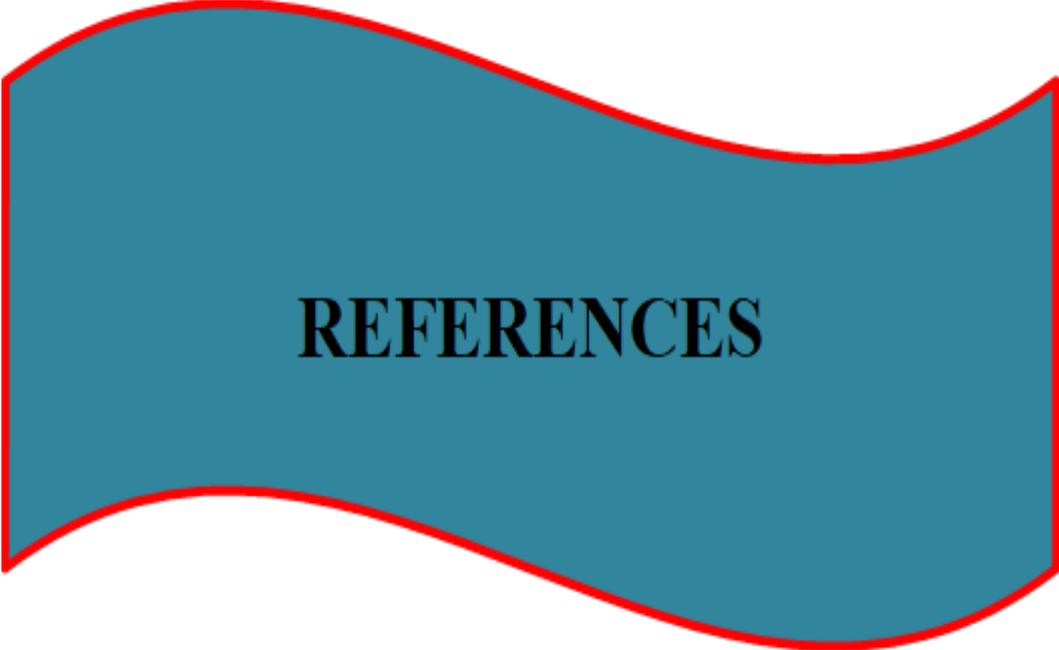
Therefore it may be concluded that the farmers having more education had more favorable knowledge and attitude towards dairy farming. Land holding had no positive relationship with their knowledge and attitude towards dairy farming. It was thus proved that farmers’ knowledge and attitude is dependent with their farm size. Annual income of the farmers had significant positive relationship with their attitude towards dairy farming. It was thus proved that farmers’ attitude is dependent with their annual income. And it indicates that

farmers having more income had more favorable attitude towards dairy farming.

It is observed that 70.7 percent of the farmers had low to medium knowledge on various aspects of dairy farming. So, it is strongly recommended that adequate technical support and training facilities should be extended to improve the knowledge of dairy farmers. It is observed that 50 percent farmers' showed unfavorable to neutral attitude towards dairy farming. So the concerned NGOs should take necessary steps to increase positive attitude towards dairy farming. Dairy farmers faced considerable amount of problems on dairy farming. It is therefore, recommended that concerned authorities should give due attention to the solution of the problems as soon as possible.

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:

Fourteen 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. Further research is necessary to find out the effective ways and means which would contribute in. This study was conducted knowledge and attitude towards dairy farming. Similar study may be undertaken on the knowledge and attitude towards other farms of Bangladesh. Further research is necessary to find out physical harmful aspects of the dairy farmers on the dairy farming.



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APPENDIX-A

Department of Animal Production & Management

Sher-e-Bangla Agricultural University

Dhaka-1207

An Interview Schedule for the Study Entitled

**“KNOWLEDGE AND ATTITUDE OF FARMERS OF SMALL SCALE
DAIRY FARMING IN DHAKA DISTRICT”**

Serial No:

Name of the respondent.....

Ward:

Thana:

District.....

1) **Age**

How old are you?years

2) **Level of education**

Tick (√) the appropriate subhead.

S. No	Qualification	Tick (√)
1	Illiterate	
2	Primary	
3	Secondary	
4	Higher secondary	
5	Graduate and above	

3) Land holding

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

SL. no.	Types of land use	Area of land (in ha.)
F1	Homestead land	
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 income

SL. No	Sources	Amount of income (in TK)
1	Agriculture	
2	Dairying	
3	Service	
4	Business	
5	Day labor	
6	Other family members	
7	Any other	
8	Total	

5) Organizational participation

SL. No.	Name of Organizations	Nature of Participation			
		Not involved (0)	Ordinary member (1)	Executive member (2)	Executive officer (3)
1	Religious committee				
2	School committee				
3	Farmer discussion group				
4	Agricultural cooperative society				
5	Milk cooperative society				
6	NGO				
7	Others				

6) Training received...

Do you receive any training- Yes/No?

If yes then:

Duration of training				
1 month	2 month	3 month	4 month	5 month or above

7) 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, bulletin etc.	10 or more times/ year ()	6-9 times/ year ()	3-5 times/ year ()	1-2 times/ year ()	Not even once ()

8) Cosmopolitaness

SL · No ·	Places of visit	Extent of Visits				
		Regularly (4)	Frequentl y (3)	Occasion ally (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 livestock officer	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 district livestock officer	1 or more time / month ()	2-3 times / 4 month ()	1-2 times/ 6 month()	Once/ 6 month()	Not even once ()

9) Herd size:

No. of dairy cows				
5-10	11-15	16-20	21-25	26-30

10) Annual recurring expenditure:

Particulars	Amount(Rs.) spent on				
	Very high (4)	High(3)	Medium (2)	Low(1)	Very low(0)
Vet. & Medicine					
A. I. & Breeding					
Dairy equipment's					
Building/shed repair					
Water & electricity					
Transport					

11) Total Milk Production:

Type of animals	Milk production (Lts/day)				
	10-15 Lt.	16-20 Lt.	21-25 Lt.	26-30 Lt.	31-35 Lt.
Dairy cows					

12) Please mention the extent of problem faced for dairy farming:

Sl. No.	Problems	Extent of Problem			
		High(3)	Medium(2)	Low(1)	Not at all (0)
1	Shortage of quality feeds				
2	High Price of feed				
3	Veterinarians are not available in the locality				
4	Lack of AI services in the veterinary hospitals				
5	Lack of training on livestock				
6	Service from ULO/VS/Specialist doctor expensive				
7	Lack of understanding by the owners on severity of problem in livestock				
8	Insufficient services				
9	Unavailability of semen				
10	Low market price of dairy product				
11	High cost of land				
12	Lack of co-operation from extension providers				
13	Lack of knowledge on using balanced diet for dairy rearing				

14	Shortage of land				
15	In emergency cases, no doorstep service provided by DLS				

13) Dairy farming Knowledge

Indicate the degree of agreement against the following statements:

SL. No.	Statement	Assigned score	Obtained marks
01	High yielding milk producing dairy breed	2	
02	Feeding elements	2	
03	Feeding of concentrates and roughage mixture	2	
04	Feed requirements for production purpose	2	
05	Quantity of minerals required per day per animal	2	
06	Animal breeding programme	2	
07	Artificial insemination	2	
08	Number of animals for artificial insemination	2	
09	Time of next insemination after parturition of animals	2	
10	Pregnancy diagnosis	2	
11	Milk producing capability of improved breeds	2	
12	Vaccination schedule	2	
13	Control of mastitis diseases	2	
14	Keeping the records of animals.	2	

15	Proper method of milking	2	
Total		30	

14) Attitude towards dairy farming

Indicate the degree of agreement against the following statements:

SL. No.	Statement	Nature of opinion				
		Strongly agree(2)	Agree (1)	Undecided (0)	Disagree (-1)	Strongly disagree (-2)
01	The milk problem of Bangladesh can be solved with the use of improved dairy technology					
02	The traditional method is better against the risk of improved dairy practices					
03	Improved dairy practices found higher for milk production					
04	The poor economic status of farmers did not allow adopting improved dairy technology					
05	The socio economic status is increasing due to adoption of improved dairy practices					
06	Improved dairy practices found very difficult					
07	Crossbreeding has improved the production capacity of our native breeds.					
08	Cross-breds are more valuable than the indigenous cow					

09	Cross-bred cow is not profitable to small farmers					
10	Demand and price of cross-breds are increasing day by day					

APPENDIX – B

Correlation matrix of the dependent and independent variables (N= 58)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
A	1													
B	.168	1												
C	-.301*	-.159	1											
D	.165	.463*	.076	1										
E	.107	.436*	-.137	.451*	1									
F	.363**	.486*	.022	.458*	.673*	1								
G	.233	.596*	-.101	.567*	.769*	.776*	1							
H	.316*	.320*	.136	.356*	.320*	.467*	.447*	1						
I	.005	.287*	.169	.460*	.290*	.495*	.510*	.125	1					
J	.330*	.387*	.059	.218.	.345*	.519*	.452*	.684	.138	1				
K	-.118	.035	.602**	.227	-.13	.105	.053	.360	.360**	-.055	1			
L	-.107	-.260*	.120	-.032	-.241	-.252	-.200	-.191	-.191	-.243	.152	1		
M	.309*	.683*	-.057	.535*	.687*	.814*	.898*	.530**	.530**	.539**	.177	-.299**	1	
N	.328*	.545*	-.065	.639*	.700*	.702*	.802*	.464**	.464**	.523**	.124	-.222	.803*	1

* Significant at 0.05 level

** Significant at 0.01 level

A= Age

B= Education

C= Land holding

D= Annual Income

E= Organizational participation

F= Training received

G= Extension media contact

G= Cosmopolitaness

H= Herd size

I = Annual expenditure

J= Milk production

K= Problem

L=Knowledge

M=Attitude