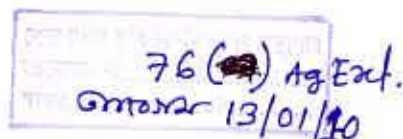


**EXPLORATION OF MARKETING PROBLEMS OF POTATO FARMERS
IN MUNSHIGONJ DISTRICT**

BY

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A thesis

*Submitted to the Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University, Dhaka
In partial fulfillment of the requirements
for the degree of*

**MASTER OF SCIENCE (MS)
IN
AGRICULTURAL EXTENSION AND INFORMATION SYSTEM**

SEMESTER: JANUARY-JUNE, 2008

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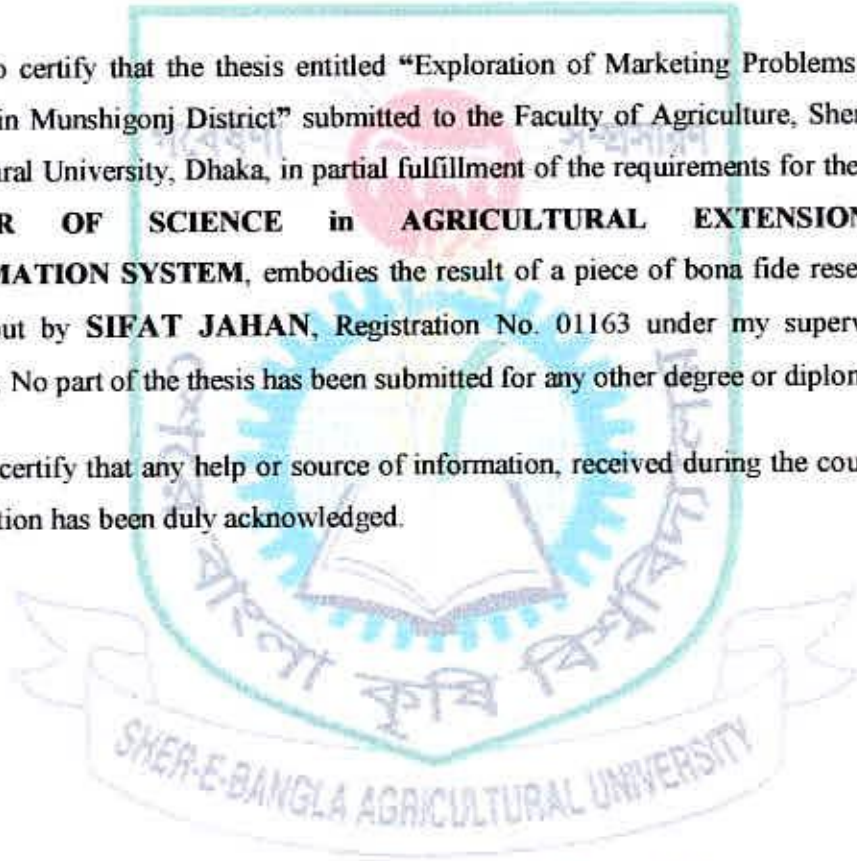
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CERTIFICATE

This is to certify that the thesis entitled "Exploration of Marketing Problems of Potato Farmers in Munshigonj District" submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE in AGRICULTURAL EXTENSION AND INFORMATION SYSTEM**, embodies the result of a piece of bona fide research work carried out by **SIFAT JAHAN**, Registration No. 01163 under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

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



Dated:
Dhaka, Bangladesh

A handwritten signature in black ink, appearing to read "Shadat Ulla", is written over a horizontal line.

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**DEDICATED
TO
MY BELOVED PARENTS**

ACKNOWLEDGEMENTS

All praises are due to Almighty Allah, the Great, Gracious and Merciful, Whose blessings enabled the author to complete this research work successfully.

The author deems it a proud privilege to express her deep sence of thankfulness, sincere appreciation and immense indebtedness to her supervisor Professor Sadat Ulla, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, for his continuous guidance, cooperation, constructive criticism and helpful suggestions, valuable opinion in carrying out the research work and preparation of this thesis, without his intense co-operation this work would not have been possible.

The author feels proud to express her deepest respect, sincere appreciation and immense indebtedness to her co-supervisor Professor Mohammad Hossain Bhuiyan, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka, for his scholastic and continuous guidance, constructive criticism and valuable suggestions during the entire period of course and research work and preparation of this thesis.

The author expresses her sincere respect to Professor M. Zahidul Haque, Chairman, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for valuable suggestions and cooperation during the study period. The author also expresses her heartfelt thanks to all the teachers of the Department of Agricultural Extension and Information System, SAU, for their valuable teaching, suggestions and encouragement during the period of the study.

Special and thankful appreciation is also due to the researche's friends Arif, Rubel, Alo, Poppy, Misty, Jessy for their fellow feeling and encouragement during the studying period. All thanks to the respondents of the study area for their all effort cooperation.

The author expresses her sincere appreciation to her husband, brother, sisters, relatives, and well wishers for their inspiration, help and encouragement throughout the study.

The Author

ABSTRACT

The study was conducted in the Lohajang upazilla under Munshigonj district. The main purposes of the study were i) to search the marketing problems of potato growers ii) to describe their personal characteristics and iii) to explore the relationships of marketing problems with farmers' personal characteristics. From the findings it was revealed that about one half of the respondents were middle aged and another half was young (41.9%) and old (8.6%). The highest proportion (73.3%) achieved education ranging from primary to above secondary. Rest of the respondents had no school education. All the respondents had organizational participation. More than two third had medium to high organizational participation. Potato growers of Lohajang were not so much financially sound as the result showed that only (6.7 %) had high capability and the overwhelming majority (58.1% & 35.2%) were under low to medium category. Regarding knowledge, one half of the respondents had low knowledge and the other half had medium to high knowledge. Distance of market place showed not much problems because (81%) of the respondents stayed within 2 km of market place. Among the respondents, the highest (52.4%) proportion had medium storage facilities, while (23.8 %) potato growers had low and high storage facilities. Among the respondents the highest (49.5 %) potato growers faced medium problem in potato marketing. Regarding the relationship between the selected dependent and independent variable, it was observed that age and distance of market place had significant positive relationships with marketing problems of potato growers. Educational level, financial capabilities, extent of use of quality control, availability of marketing information and storage facilities had significant negative relationships with marketing problems of potato growers. On the other hand, organizational participation had no relationship with marketing problems of potato growers.



TABLE OF CONTENTS

CHAPTER	Page
ACKNOWLEDGEMENTS	i
ABSTRACT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	v
LIST OF APPENDICES	vi
ABBREVIATION AND ACRONYMS	vii
1. INTRODUCTION	01
1.1 General Background	01
1.2 Statement of the problem	05
1.3 Specific objectives of the study	06
1.4 Justification of the study	07
1.5 Scope of the study	07
1.6 Limitations of the study	08
1.7 Assumptions of the study	08
1.8 Definition of terms	09
2. REVIEW OF LITERATURE	13
2.1 Problem faced by the farmers in different aspects of marketing	13
2.2 Relationship between selected characteristics of the farmers and their problem faced of marketing	17
2.3 The conceptual framework of the study	23
3. METHODOLOGY	25
3.1 Location of the study	25
3.2 Sample size	25
3.3 The research instrument	28
3.4 Data collection procedure	28

CHAPTER	Page
3.5 Measurement of variables	29
3.6 Measurements of independent variables	29
3.7 Measurements of dependent variables	33
3.8 Hypothesis of the study	33
3.9 Collection of data	34
3.10 Data processing	34
3.11 Data analysis	34
4. RESULTS AND DISCUSSION	36
4.1 Characteristics of the respondents	36
4.1.1 Age	36
4.1.2 Education level	37
4.1.3 Organizational participation	39
4.1.4 Financial capabilities	40
4.1.5 Knowledge on quality control	40
4.1.6 Distance of the market place	42
4.1.7 Availability of marketing information	42
4.1.8 Storage facility	43
4.2 Dependent variable	44
4.3 Relationship of the selected characteristics of potato growers with their marketing problems	45
5. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	55
5.1 Summary of findings	55
5.2 Conclusions	58
5.3 Recommendations	60
BIBLIOGRAPHY	62
APPENDIX	71

LIST OF TABLES

	Title	Page
Table 4.1.	Distribution of the potato growers according to their age	37
Table 4.2.	Distribution of the potato growers according to their education	38
Table 4.3.	Distribution of the potato growers according to their organizational participation	39
Table 4.4.	Distribution of the potato growers according to their financial capabilities	40
Table 4.5.	Distribution of the potato growers according to their knowledge on quality control	41
Table 4.6.	Distribution of the potato growers according to their distance of the market place	42
Table 4.7.	Distribution of the potato growers according to their availability of marketing information	43
Table 4.8.	Distribution of the potato growers according to their storage facility	43
Table 4.9.	Distribution of the potato growers according to their marketing problems	44
Table 4.10	Pearson's Product moment co-efficient of correlation showing relationship between dependent and independent variables	47

LIST OF FIGURE

	Title	Page
Figure 2.1.	The conceptual framework of the study	24
Figure 3.1.	A map of Munshigonj District	26
Figure 3.2.	A map of Lohajang Upazilla showing the study area	27

LIST OF APPENDIX

	Title	Page
Appendix I.	An interview schedule for the study	71
Appendix II	Correlation matrix	75

ABBREVIATIONS AND ACRONYMS

FAO	=	Food and Agricultural Organization
BARI	=	Bangladesh Agricultural Research Institute
BBS	=	Bangladesh Bureau of Statistics
MT	=	Metric Ton
df	=	Degrees of Freedom
IADP	=	Indo-German Intensive Agricultural Development



Chapter I

Introduction

CHAPTER I

INTRODUCTION

1.1 General Background

Potato (*Solanum tuberosum*) is considered as a vegetable as well as substitute of rice, wheat and maize. It is rich in carbohydrate and used as the staple food in more than 40 countries of the world especially in East and West Europe and in North and South America. In Bangladesh, however potato is consumed almost absolutely as vegetable. It occupies third position among food crops in Bangladesh following rice and wheat, respectively. The Dutch introduced the cultivation of potato in Indo-Pak subcontinent in the early 17th century (Ahmed, 1977). However, potato production in Bangladesh began in the later part of the 19th century. In 2008, Bangladesh produced about 8 million MT of potato.

The quality of carbohydrate in potato is higher than other vegetables. Potato is the major contributor of the required calories for the people of Bangladesh. Rice and wheat, the two leading staple food, do not contain vitamin A and vitamin C. On the other hand, potato contains some vitamin A and large amount of vitamin C. Usually 100 g boiled potatoe with its skin can provide half of the daily requirement of vitamin C of an adult. One pair of potatoes can supply the same amount of vitamin C that supplied by 3 apples, 1 tomato, 1 mango and 1 orange (Hussain, 2000). Besides these, the same amount of rice and boiled potato contain almost the same amount of carbohydrate and protein. Biological food value of potato protein is higher than the rice and wheat protein and similar to boiled potato contain almost the same amount of carbohydrate and protein. Biological food value of potato protein is higher than the rice and wheat protein similar to beef and milk protein (FAO, 1999). The quantity of fat in potato is lesser than rice and

wheat. Potato is also an important source of fiber. Boiled potato contains more fiber than rice and wheat.

There are many varieties of potato developed by BARI such as Diamont, Multa, Cardinal, Granola etc. Potato is cultivated in every district of the country. Bangladesh made a remarkable progress in the production of potato during last decades from 1998-99 to 2005-2006. Area under potato has increased to double and production has increased the same period. In recent years, potato has occupied an important position because of its highest yield among major food and vegetable crops of Bangladesh. The present potato growing area in Bangladesh with its production and yield (1998-2006) are presented below-

Year	Production ('000 metric ton)
1998-1999	2,762
1999-2000	2,933
2000-2001	3,216
2001-2002	2,994
2002-2003	3,386
2003-2004	3,907
2004-2005	4,856
2005-2006	4,161

Source: BBS, 2006

However, the policy makers and planners were emphasizing further to increase the coverage and production of potato for long years. To increase the production and quality of potato an amount of effort is being made through research and extension delivery system in the country. But a large amount of potato deteriorated its quality due to the lack of marketing and storage facilities. The findings of this study can be a key indicator to highlight the exploration of marketing problems of the potato growers in the country. The characteristics of potato farmers on their marketing problems are essential to plan and execute program for increasing the yield of potato. With this end in view, the author was keenly interested to undertake the present study.

According to the geographic distribution of the country's vegetable producers as well as the informal organizations of the trade, vegetables pass from farmer to final user in different ways. Three principal types of marketing channels for vegetables exist: local, regional and inter-regional. Local marketing channels are characterized by the intervention of fewer middlemen between vegetable producers and consumers. Vegetables are sold to consumers, local traders, rural assemblers, wholesaler/commission agents or cold storage operators or in a nearby urban area by the growers under local marketing channels. Regional marketing channels consist of an extended chain of intermediaries between producer and consumer. Inter-regional marketing channels are the most lengthy, because a number of traders are involved in the system (BARI, 1992).

Market intelligence provides information relating to some market forces such as demand, supply, prices, transportation, storage etc. Dissemination of market information is a useful tool for making competition among producers and traders. In the developing economics, greater specialization, diversification and commercialization depends upon the timely movement of agricultural inputs and finished products. Storage is necessary to reduce the seasonal and regional fluctuations of prices. The storage facilities are very inadequate and insufficient in Bangladesh, which is also perceived as an important marketing problem at the grass root level (Ibid, 1973).

The major constraints to the development of marketing in Bangladesh are production shortage, high domestic price, non-availability of export quality produce, seasonality of domestic supply, lack of proper sorting and grading facilities, absence of improved packaging materials, absence of an efficient transportation system, inadequate cargo space and high air freights (BARI, 1992). There are three principal markets: 1. shipping point market; 2. wholesale markets, and 3) retail markets. This marketing system is

undergoing change as a result of vertical integration, decentralization, new handling and transportation methods, and the growth of the away-from-home and direct farmer consumer markets. The principle according to which farm produce and farm income are distributed is followed by a look into the problems of agricultural marketing. Surplus cropping operations necessitate the emergence of marketing problems in the agricultural sphere (Alam, 2002).

Marketing system is essential for any farm products. In consideration of potato it is also most important. Because potato mainly used year round, but easily deteriorated its quality. There is no way of government control of potato marketing. Mainly its marketing depends on consumers demand and supply of traders. All the problems for marketing of potato may not be addressed timely. But it is necessary to acquire knowledge on different problems of potato marketing process (Mizanur, 1992).

Potatoes grown in the nearby homestead land are usually sold by the growers at the local markets to itinerant traders. In most cases the growers do not have proper market information. In the absence of information on price and supply prevailing at the big consuming centers, they cannot bargain with the traders and are compelled to sell at the prices dictated to them. Many remote growing villages do not have proper link roads with nearby markets. Thus, the growers face problems of carrying potato to the assembling markets. Proper packing and handling systems have not been adequately developed in the country. Munshigonj district is an intensively potato growing area, compared to other areas of Bangladesh. Therefore, the study was conducted for exploration of marketing problems of potato farmers in Munshigonj district.

1.2 Statement of the Problem

The purpose of the study was have an understanding of the marketing problems of potato growers. Moreover, since various characteristics of an individual are likely to have an influence on the marketing problems of potato growers, it would be necessary to ascertain the associations and contributions of such factors with respect to problem. Therefore, examining the associations and contributions of a set of personal, socio-economic and socio-psychological characteristics of the potato growers with their marketing problems would be considered pertinent to the study. In view of the above background and facts, the present study was undertaken with the title “Exploration of Marketing Problems of Potato Farmers in Munshigonj District”. In the light of the above discussion and the background information, the present study has been undertaken with the following research questions:

- i. What are the problems being confronted by the farmers in potato marketing?
- ii. What are the farmer characteristics (personal, social, economic and psychological) that are directly related to their problems faced in potato marketing?
- iii. What relationships exist between selected characteristics of the potato growers and their marketing problems?

An understanding to these queries is likely to be helpful for the extension organizations to take strategies for market development of the potato growers through designing marketing system.

1.3 Specific Objectives of the Study

In view of the problem as stated above, the following specific objectives were formulated for giving proper direction to the study:

1. To explore the extent of marketing problems of the potato farmers;
2. To determine how problems are faced by the farmers;
3. To determine and describe the influential characteristics of potato growers in respect of marketing. The selected characteristics are:
 - a. Age
 - b. Education
 - c. Organizational participation
 - d. Financial capabilities
 - e. Extent of use of quality control
 - f. Distance of the market place
 - g. Availability of marketing information
 - h. Storage facilities
4. To explore relationship between selected characteristics of the farmers and their extent of marketing problems.

1.4 Justification of the Study

Bangladesh made a remarkable progress in the production of potato during last decades from 1994-95 to 2003-2004. Area under potato has increased to double and production has increased during the same period. The total potato coverage 730000 acres and production amounts of 4706000 tons in Bangladesh in the year 2004-2005 (BBS, 2006) respectively. Besides these, potato growers face some problems in potato marketing. But there was no conclusive research work on the problems of potato marketing. Therefore, the researcher felt necessity to conduct a research work on “Exploration of Marketing Problems of Potato Farmers in Munshigonj District”.

It is expected that the findings of the study would be of great value to researchers extension service providers, students, policy makers and planners in formulating and designing marketing policy of potato in a more befitting manner.

1.5 Scope of the Study

The present study was designed to have an understanding of the problems confronted by the farmers in potato marketing and to explore its relationship with their selected characteristics.

The findings of the study will be applicable to Munshigonj District. However, the findings may also be applicable to other areas of Bangladesh where socio-cultural, psychological, and economic situation do not differ much than those of the study area. The findings may be also helpful to the field works of agricultural marketing service providers to improve strategies of action for adopting potato marketing. Lastly, it is assumed that the recommendation of this study will be helpful in formulating necessary action for improving the marketing status of potato.

1.6 Limitations of the Study

In order to make the study manageable and meaningful, it was necessary to impose some limitations as stated below:

- i) The study was confined in the area of Munshigonj district.
- ii) Characteristics of the farmers are many and varied, but time, money and other resources did not permit the researcher to include all of them in the study. Hence, only 8 characteristics of the farmers and their problem faced in potato marketing were selected for investigation in this study.
- iii) Various problems in adopting potato marketing were likely to be faced by the farmers. However, only 9 problems have been considered for investigation.

1.7 Assumptions of the Study

An assumption is the supposition that an apparent fact or principle is true in the light of the available evidence (Goode and Hatt, 1952). The researcher had the following assumption in mind while undertaking this study.

- i) The respondents selected for the study were capable to provide proper responses to the questions included in the interview schedule.
- ii) The responses furnished by the respondents were reliable. They expressed the truth about their convictions and awareness.
- iii) Views and opinions furnished by the respondents included in the sample were the representative of the whole population of the study area.
- iv) The researcher who acted as interviewer was well adjusted to the social and cultural environment of the study area. Hence the respondents furnished their correct opinions without hesitation.

1.8 Definition of Terms

Some terms which have been frequently used throughout the thesis are defined and interpreted below:

Age

Age of a respondent is defined as the span of his/her life and is operationally measured by the number of years from his/her birth to the time of interviewing. Age of a respondent was measured by the period of time from their birth to the time of interview and it was measured in terms of complete years on the basis of their response.

Education

Education refers to the development of desirable knowledge, skill, attitudes, etc. of an individual through the experiences of reading, writing, observation and related matters. Education was measured in terms of grades (class) passed by respondent. If a respondent received education outside the school, their education was assessed in terms of education of the school.

Organizational participation

Organizational participation of an individual referred to his participation in various organizations as ordinary member, executive committee member, and president/secretary. Organizational participation of a respondent was measured on the basis of the nature and duration of their participation in different organizations.

Technology

A technology is a device being generated through the combination of knowledge, inputs and management practices, which are used together with productive resources to gain a desired output.

Problems

Problems are the elements which hinder/resist/oppose in doing some activities or operations in a certain field. The problems in technology transfer are those, which act as the barriers to the adoption of technologies by the potential users (Kashem and Halim, 1991).

Innovation

An innovation is an idea or practice perceived as new by the individual. It is the newness of the idea to the individual that determines his reaction to it.

Adoption

According to Rogers (1995) "Adoption is a decision to make full use of an innovation as the best course of action available." When an individual takes up a new idea as the best course of action and practices at the phenomenon is known as adoption (Ray, 1999). However, adoption of aquaculture technologies refers to one's use of different practices of aquaculture technologies and the decision to continue their use in future. It is an individual decision making process.

Problem faced

Problem faced indicates the argument, altercation or conflict that acts as barrier in potato marketing.

Marketing

Marketing is the process of handover goods or products from growers to consumers either directly or through some channel.

Potato marketing

The participants in potato marketing activities include large scale local buyers, itinerant traders, commission agents, wholesalers, cold storage operators and retailers including the groups themselves.

Quality control

Quality control refers to maintain the actual superiority in relation to production, packaging, storing, transportation, storing and also marketing.

Knowledge about quality control

Different known strategy that helps to attain actual superiority during the period of production, packaging, storing, transportation, storing and also marketing is known as knowledge about quality control. Quality control knowledge of a respondent was measured by computing a score on the basis of potato growers' responses to 7 questions. The score obtained by a respondent for responses of the entire 7 questions were added together to compute their quality control knowledge score. Each question was assigned 3 score.

Marketing information

Marketing information means the different information like as demand, supply and marketing price of specific products. Availability of marketing information of the respondent was measured by computing a score on the basis of potato growers reply to 6 questions. The score obtained by a respondent for responses of the entire 6 questions were added together to compute their availability of marketing information scores. Each question had assigned 3, 2, 0 score for regularly, occasionally and not at all, respectively.

Financial capabilities

Financial capabilities mean the availability of finance near to the users in time and in appropriate amount. Financial capabilities of the potato growers were measured by adding 1. financial capabilities from crop 2. financial capabilities from domestic animals and fisheries and 3. financial capabilities from non-agricultural sources. Financial capabilities from crop was measured by adding all of the total value of their field crops including cereals, vegetable fruits etc. On the other hand, financial capabilities from domestic animals and fisheries was measured by adding return from livestock and fisheries product and byproduct.

Perception

Perception refers to the process through which the organism becomes aware of the environment. It would be more accurate to say that perception is the process whereby the individual makes her unique experiences with environment. In this study potato growers' perception is used to refer to the knowledge, understanding and feeling of them regarding the marketing problems.

Distance of market place

Distance of market place means how far away the markets are situated from the residence of potato growers.

Storage facilities

Storage facilities refers to convenient places to keep the potato for different periods before marketing. Storage facilities may be for short term, medium term and long term.



Chapter II

Review of literature

CHAPTER II

REVIEW OF LITERATURE

This chapter deals with a brief review of previous research studies relating to the problem related to marketing. The relevant information regarding this problem is limited in number. However, the researcher has tried her best to collect needful information through searching relevant studies. Unfortunately, few research works were found directly related to the problem faced in potato marketing. However, research works related to problem faced by the farmers in different aspects of marketing of some important crops are presented below.

2.1 Problem faced by the farmers in different aspects of marketing

Marothia (1983) conducted a research to find out the constraints in the adoption of paddy technologies and marketing in two villages in Raipur Block, Madhya Pradesh, India. The findings revealed that the majority of farmers still adopt a partial package of recommendations, mainly due to the high cost of inputs, financial limitations and risk of crop failure and marketing. Inadequate supportive input-facilities were found to be responsible for the slow adoption a paddy technology and marketing.

Raha *et al.* (1986) identified some common problems of cotton cultivation and marketing as perceived by the farmers in Bangladesh. Those were: lack of suitable land, lack of irrigation facilities, shortage of labour, shortage of cash money, lack of technical knowledge, lower price of cotton, and non-availability of seed, insecticides and fertilizers.

Rahman (1995) in his study identified that farmer faced severed problems in cotton cultivation. Non-availability of quality seed in time, unfavorable and high cost of

fertilizer and insecticides, lack of operating capital, not getting fair weight and reasonable price according to grade, affects of cattle in cotton field, lack of technical knowledge, lack of storage facility, stealing from field at maturity stage, and late buying of raw cotton by Cotton Development Board were identified as major problems of cotton farmers in Mymensingh district.

Thakur *et al.* (1997) conducted a study to (1) calculate the marketable and marketed surplus of principal food grain and vegetable crops of small and large farms in the hills of Himachal Pradesh, India; (2) examine market supply response and factors affecting marketed surplus; and (3) investigate the problems of agricultural marketing in the hills. The study was carried out in Kangra and Mandi districts during the agricultural year 1992/93. Both districts were covered under the Indo-German Intensive Agricultural Development Project (IADP). A total of 145 farmers were selected from Kangra and Nurpur block (Kangra district) and Mandi-Sardar and Sundernagar blocks (Mandi district). Eight crops were covered: maize, wheat, rice, tomatoes, cauliflower, cabbage, peas and radish. The study showed that the farmers were market-oriented with sufficient marketable and marketed surplus. The supply response is positive for all crops. The small farmers are more responsive in increasing marketed surplus with increased production than the large farmers. Farmers encounter many agricultural marketing problems.

Faroque (1997) found that female rural youth in Bhaluka (Mymensingh) lacked cash for buying seeds, seedling and fisheries and devoid of necessary knowledge in improved vegetable cultivation. He further added that the majority of female rural youth faced very high (54%) problems related to marketing.

Yadev *et al.* (2000) conducted a survey during 1996-97 in the Basti district of Uttar Pradesh, India, among farmers of 6 selected villages who were classified based on the size of their farmland: below 1 ha (38 farmers), 1-2 ha (33) and 2 ha and above (19). Three potato disposal channels (I: producer-consumer, II: producer-retailer-consumer and III: producer-wholesaler-retailer-consumer) were used. Under channel III, 3 storage systems were used: without storage, storage by producer and storage by wholesaler. Tabulated data were presented on (1) the pattern of potato disposal by size of farmland, (2) potato price spread in Basti vegetable markets for the 3 channels and (3) inter-channel comparisons as a whole. Potato marketing problems can be overcome by cooperative marketing.

Ismail (2001) conducted a study on farm youth of haor area of Mohangonj upazila. Study revealed that there were six top problems in rank order such as (i) no arrangement of loan for the farm youth for fishery cultivation, (ii) lack of government programs in agriculture for the farm youth and (iii) absence of loan giving agencies for establishing farm.

Pramanik (2001) made an extensive study on the twenty-four problems of farm youth in Mymensingh villages relating to different problems in crop cultivation and marketing. Out of twenty-four problems top five problems in rank order were; i) local NGO take high rate of interest against a loan, ii) lack of agricultural machinery and tools, iii) lack of cash iv) financial inability to procure improved seeds, fertilizers and irrigation v) marketing facilities.

Erbe and Neubauer (2002) reported that potato production area in Germany increased by 2.1% to 288000 ha in 2002 compared to production area in 2001. The area reduced in 2001 because of marketing problems. The greatest reduction (14%) was in Sachsen-Anhalt. The main varieties are Agria (7.3% of total area), Kuras (5.4%), Cilena (4.1%),

Marabel (3.9%) and 20 other varieties. Seventeen new varieties were approved for 2002, including 1 very early, 3 early, 10 semi-early (5 for consumption and 5 for processing), and 3 semi-late and late ripening, while 5 varieties were removed from the German national list.

Salam (2003) in his study identified constraints in adopting environmentally friendly farming practices. Top six identified constraints according to their rank order were : i) low production due to limited use o fertilizer (ii) lack of organic matter in soil, (iii) lack of Government support for environmentally friendly farming practices, (iv) lack of capital and natural resources for integrated farming practices, (v) lack of knowledge on integrated farm management and (vi) marketing facilities.

Chander and Singh (2003) in their study identified four aspects of constraints in adoption of IMP practices viz. technological constraints, economical constraints, services, supply and marketing constraints and transfer of technology constraints. They also opined that economical constraints faced by the farmers at “most serious” level.

Uddin (2004) in his study identified five aspects of constraints in commercial cultivation of vegetables viz. seed constraints, disease and insect infestation constraints, field management constraints, marketing of vegetable constraints and extension work constraints. Among these aspects of constraints they revealed marketing problem severely faced by the farmers.

Yulafci and Cinemre (2007) conducted a study to explore marketing structures of fresh fruits and vegetables, which are produced in Carsamba plain (Turkey), to determine marketing problems and to put forward solution suggestions. According to brokers, the most important problem of fresh vegetable and fruit marketing was not being able to find

quality crops. Producers had only limited power in setting the prices of vegetables and fruits which in the market was estimated around 6-7 percent. The most important problem in the market was said to be not having enough standard size. In addition to this, there were some deficiencies related with infrastructure of the market area.

2.2 Relationship between selected characteristics of the farmers and their problem faced of marketing

2.2.1 Age and problem faced

Rahman (1995) conducted a study to identify the relationship between the personal characteristics and constraints facing in cotton marketing of Muktagacha Thana under Mymensingh district. He found that there was no significant relationship between the age of the farmers and their faced constraints in cotton cultivation and marketing. Similar findings were obtained by Ali (1999), Rashid (1999), Pramanik (2001), Ahmed (2002), Hossain (2002), Salam (2003) and Halim (2003) in their respective studies.

Bhuiyan (2002) in his study found a positive and significant relationship between age of the farmers and their constraints in banana cultivation and marketing. A similar finding was obtained by Rahman (1996) in his respective study.

Rashid (2003) found that age of the rural youth had significant negative relationship with problem faced in selected agricultural production activities and marketing.

2.2.2 Education and problem faced

Mansur (1989) found that education of the farmers had significant negative effect on their problem faced in marketing. Similar findings were obtained by Rahman (1995), Haque (1995), Rahman (1996), Karim (1996), Faruque (1997), Pramanik (2001), Ahmad(2002), Hossain (2002) Bhuiyan (2002) and Salam (2003) in their respective study.

Hoque (2001) found a significant negative relationship between education and problem faced of the FFS farmers in product marketing.

The study of Ismail (2001) revealed that there was no significant relationship between education and problem faced of farm youth in product marketing.

2.2.3 Organization participation and problem faced

Rashid (1975) concluded in his study that organizational participation of the farmers had no significant relationship with their problem faced.

Kashem (1977) found that there was a negative relationship between organizational participation of the landless labours and their constraints faced. There was however, a negative trend between the two variables.

Ali (1978), Saha (1983), Sarker (1983) and Mansur (1989) found in their studies that organizational participation of the farmers had a significant negative relationship with the agricultural constraints faced. On the other hand Islam (1987) and Raha (1989) found no significant relationship with their agricultural constraints faced.

Rahman (1995) found in his study that there was no relationship between the organizational participation of the farmers and their faced constraints in cotton cultivation.

Rashid (1999) in his study revealed that the organizational participation of the rural youth had no relationship with their willingness for undertaking selected agricultural entrepreneurships in their self-employment and their problem perceived for undertaking selected agricultural entrepreneurships in their self-employment. Similar finding was obtained by Hossain (1989) in his respective study. Similar findings were obtained by

Rahman (1996), Faroque (1997), Pramanik (2001), Hossain (2002), Bhuiyan (2002) Ahmed (2002), Salam (2003) and Halim (2003) in their respective studies.

2.2.4 Financial capabilities of farmers and problem faced

Saha (1983) found a significant positive relationship between income of farmers and their poultry problem faced in his study.

Hossain (1989) in his study found a significant positive relationship between income and constraints faced by the landless laborers.

Rahman (1995) found that a negative and substantially significant relationship between annual income of the farmers and their faced constraints in cotton cultivation and marketing.

2.2.5 Extent of use of quality control and problem faced

Rodriguez and Bermudez (1997) identify a major constraint facing farming and food production in the Boyaca region of Colombia is the small size of holdings. The region is characterized by small fields producing potatoes: the prevailing minifundio (small plots) have resulted in a low level of technical innovation. Boyaca has several regions well suited to potato growing. Central Boyaca represents a major demographic region where peasantry is dedicated to potato growing but where the average standard of living is low as a consequence of low production levels and marketing problems.

Raha (1989) reported from his study that farmers' knowledge in irrigated modern boro paddy had no significant relationship with their irrigation problem faced. Anwar (1994), Karim (1996), Rashid (1999), Islam (2001), Salam (2003) and Rashid (2003) found similar in their respective studies.

2.2.6 Distance of the market place and problem faced

Rahman (1993) conducted a study in Munshigonj and Narayangonj to investigate the comparative cost and return as well as loss arising from storing potato under traditional as well as in cold storage and marketing channel. A fact that emerged is gross return as well as net return was higher under nearer distance to the long distance. Although total cost of storing potato in cold storage plants was higher than the traditional method, the former is more profitable than the other method.

Faroque (1997) found that female rural youth in Bhaluka (Mymensingh) lacked cash for buying seeds, seedling and fisheries and deprived of necessary knowledge in improved vegetable cultivation. He further added that the majority of female rural youth faced very high (54 percent) problems related to marketing due to distance.

2.2.7 Availability of marketing information and problem faced

A study conducted by Panday (1995) examined the onion and garlic export problems and prospects. Following a description of onion and garlic production in India, a review of the problems and opportunities facing the export sector was presented, trends in exportation of the two products were described and the principal export markets were identified. The constraints to increasing exports included the differing quality requirements of world market, storage and packaging, inadequate market information, poor transport infrastructure and pricing structure strategies to overcome these problems were discussed.

2.2.8 Facilities of storage and problem faced

Sabur and Molla (1993) conducted a study on constraints to production and marketing of spices in Bangladesh. The study revealed that the real prices of garlic, onion and turmeric increased significantly by 3.83 percent, 3.58 percent and 3.17 percent, respectively

during the study period. They examined that the storage facilities for spices particularly cold storage were limited and the seasonal price variation largely dependent on the perishability of spices.

Alauddin (1979) and Ahmad (1980) in their separate studies on the preservation of potato opined that potato production is directly proportional to its preservation space. Therefore, if the storage facilities are not increased the production of potato could not be increased considerably.

Elias and Hossain (1981) conducted a study on storage and utilization of potato in some selected areas with the objectives of knowing the existing utilization and consumption pattern of potato by the potato growers. They found that about 77 percent of growers stored their potato at home and 7 percent in cold storage plants. Only 16 percent of growers were found to store potato both home and in the cold storage. The duration of potato storage was 4 to 5 months.

Islam (1987) made a study on potato preservation in cold storage plants in selected area of Bangladesh. His sample size was 117, among the sample 27 were cold storage plants, 60 were farmers, and 30 were traders. The major findings of his study were that the prevailing cold storage charge was too high. Growers could not avail storage facilities due to their financial insolvency. As a consequence, growers were compelled to sell a major portion of their produce during harvesting period at lower prices. Growers stored potato at their home under room temperature and humidity and a substantial portion of it was lost due to shrinking, rotting and sprouting and disease-pest attack. He suggested that cold storage charge should be reduced to a desirable level safe guarding the interest of both growers and the plant owners.

Rahman (1993) conducted a study in Munshigonj and Narayangonj to investigate the comparative cost and return as well as loss arising from storing potato under traditional as well as in cold storage. A fact that emerged is that gross return as well as net return was higher under cold storage system compared to traditional storage system. Although total cost of storing potato in cold storage plants was higher than the traditional method, the former is more profitable than the latter.

Huq (2003) conducted a study on potato marketing system in Bangladesh. He stated that cold storage performed significantly better. Farmer's rustic storage method causes of storage losses for month during mid August to mid December. Another advantage of cold storage is that they may extend the time of farmer which can not maintain in on farm storage. He described that farm storage for only one to four months and cold storage is the primary source of potato arriving in the market after that date.

2.3 The conceptual framework of the study

The scientific research, selection and measurement of variables constitute an important task. The hypothesis of a research while constructed properly consists at least two important elements i.e.: a dependent variable” and “an independent variable.” A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variables (Townsend, 1953). An independent variable is that factor which is manipulated by the researcher in her attempt to ascertain its relationship to an observed phenomenon. Variables together are the causes and the phenomenon is effect and thus, there is cause effect relationship everywhere in the universe.

The conceptual framework of Rosenberg and Hovland (1960) was kept in mind while making structural arrangements for the dependent and independent variables. This study is concerned with the marketing problems confronted by the potato growers. Thus, the problems faced was the dependent variable and 8 selected characteristics of the potato growers were considered as the independent variables. Problems of an individual may be affected through interacting forces of many independent variables. It is not possible to deal with all independent variables in a single study. It was therefore, necessary to limit the independent variables, which include age, education, organizational participation, financial capabilities, extent of use of quality control, distance of the market place, availability of marketing information and storage facilities.

In the light of the foregoing discussion, a conceptual framework has been developed for this study, which is diagrammatically presented in the Figure 2.1.

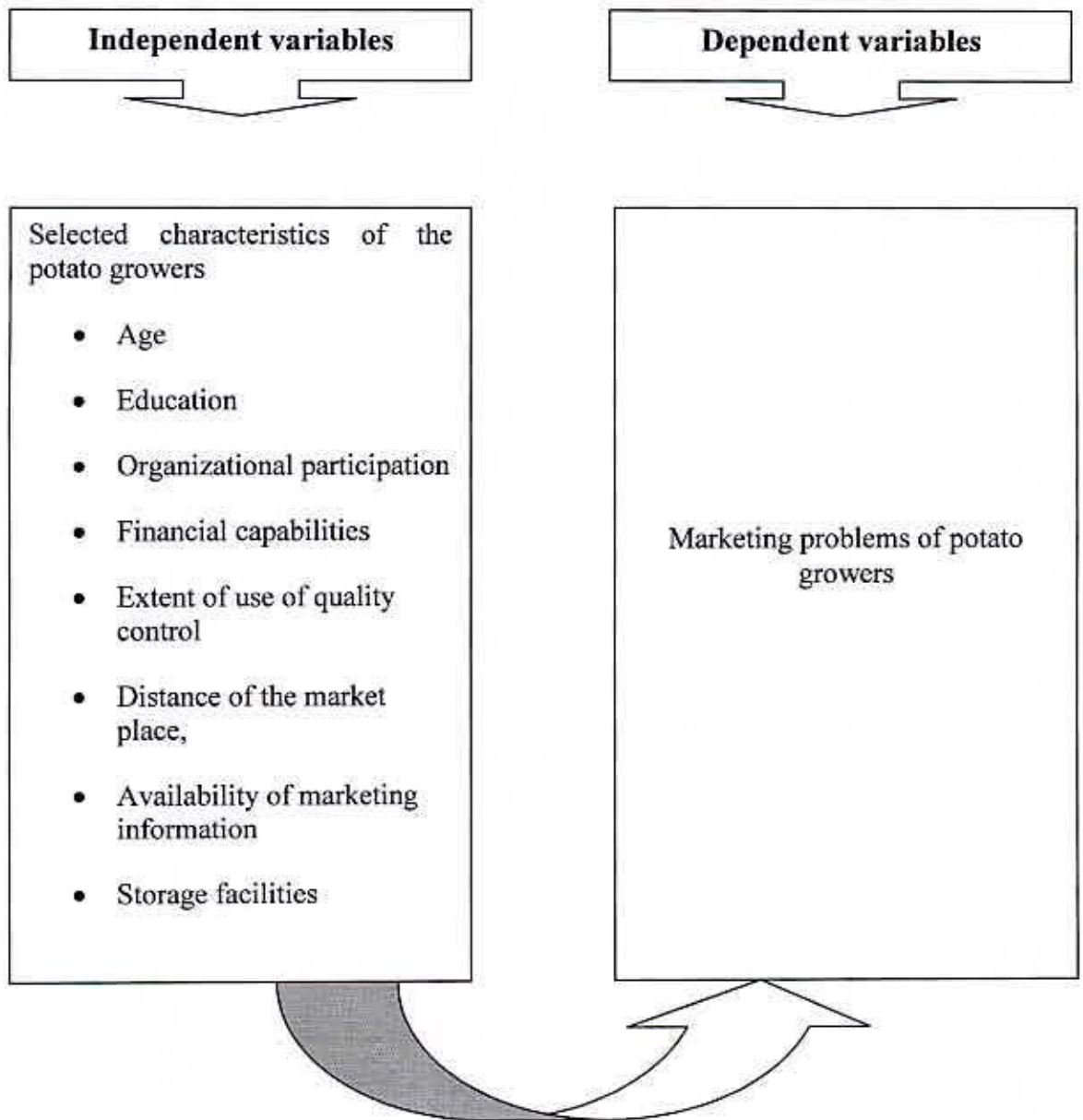


Figure 2.1 The conceptual framework of the study



Chapter III
Methodology

CHAPTER III

METHODOLOGY

Methodology deals with the methods and procedures would enable the researcher to conduct the study. Without proper methodology, it is impossible to conduct research work smoothly and it is very difficult to address the objectives with a scientific manner. It requires a very careful consideration on the part of the researcher to collect valid and reliable data and to analyze the same for meaningful conclusion. A sequential description of the methodologies followed in conducting this research work has been presented in this Chapter.

3.1 Location of the study

The study was conducted in the Lohajang upazilla under Munshigonj district. This upazilla is situated 50 km east/west from Munshigonj districts head quarters. Among the 9 union of Lohajang upazilla Kalma union was selected purposively as the locale of the study area. Then three (3) villages namely Douhuri, Gorakandha and Noapara from Kalma Union have been selected purposively as study area.

3.2 Sample size

All potato growers of Kalma union under Lohajang upazilla constituted the population of the study. An update list of 525 potato growers from the selected villages was prepared with the help of Sub-Assistant Agriculture officer. Twenty (20%) percent of the population were randomly selected as the sample of the study by using random number table. Thus, 105 farmers constituted the sample of the study. A reserve list of ten farmers was also prepared by the same method so that the respondents of this list could be used for interview if the respondents included in the original sample were not available at the time of data collection.

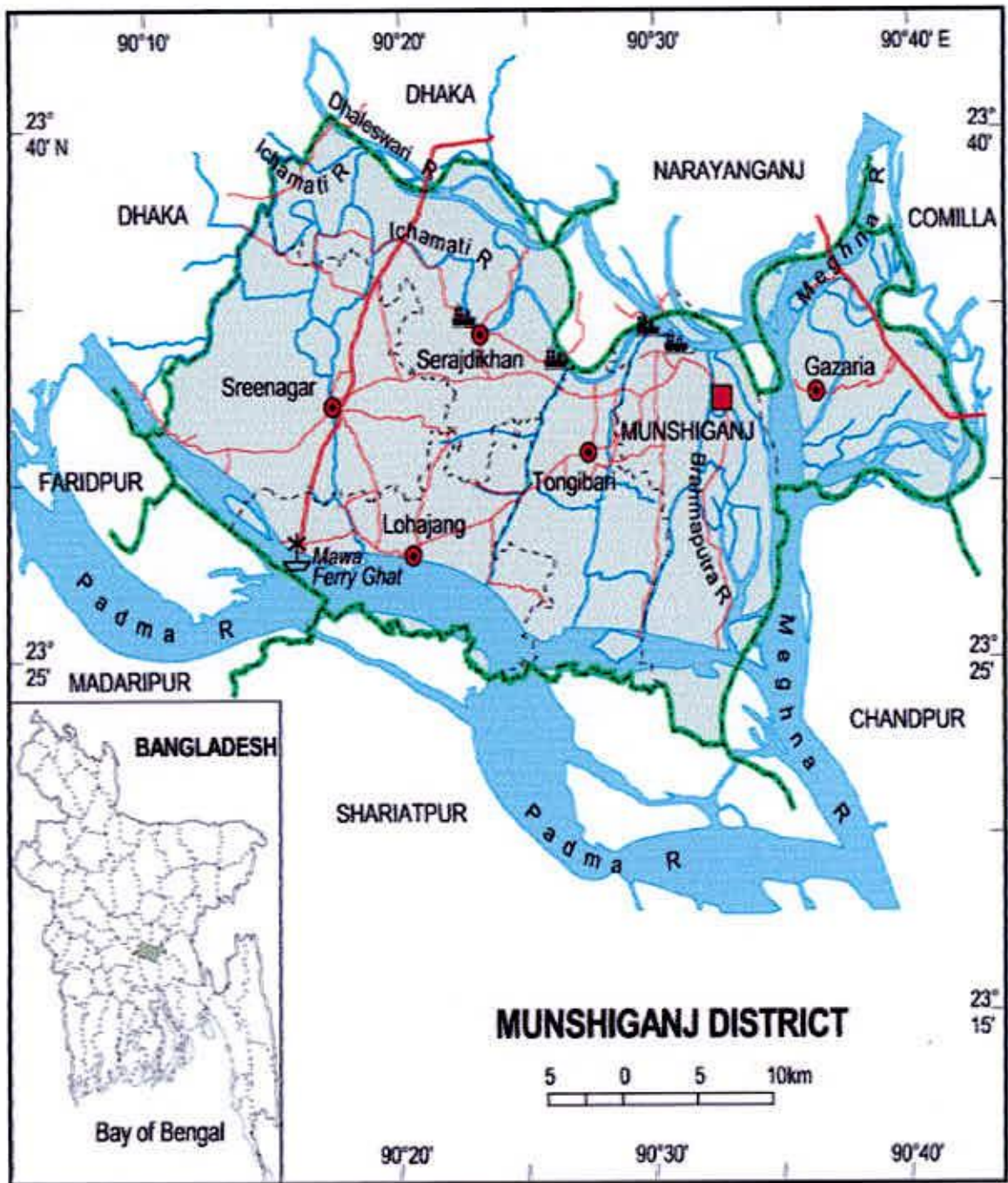


Figure 3.1. A map of Munshiganj District





Figure 3.2. A map of Lohajang Upazilla showing the study area

The distribution of the population sample and number of farmers in the reserve list are shown below-

Name of the unions	Name of the of villages	No. of potato growers	No. of potato growers included in the sample	No. of potato growers in the reserve list
Kalma	Douhuri	200	40	5
	Gorakandha	140	28	3
	Noapara	185	37	5
Total		525	105	13

3.3 The Research Instrument

A well structured interview schedule was developed based on objectives of the study for collecting information. The interview schedule was constructed containing direct and simple questions in open form and close form keeping in view the dependent and independent variables. Appropriate scales were developed to measure both independent and dependent variables.

The schedule was pre-tested with ten potato growers in actual situation before finalizing it for collection of data. Necessary corrections, additions, alternations, rearrangements and adjustments were made in the interview schedule based on pretest experience. It was then multiplied by printing in its final form. A copy of the interview schedule is presented in Appendix-I.

3.4 Data Collection Procedure

The researcher herself collected data from the sample respondents through personal contact. Whenever any respondent faced difficulty in understanding questions, more attention was given to explain the same with a view to enabling them to answer properly. No serious problem was faced by the investigator during data collection as she obtained

cooperation from the respondents. Data collection was started on 12 April, 2008 and completed on 20 May, 2008.

3.5 Measurement of variables

The variable is any characteristic, which can assume varying, or different values in successive individual cases (Ezekiel and Fox, 1959). A research work usually contains at least two important variables viz. independent and dependent variable. An independent variable is that factor which is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. A dependent variable is that factor which appears, disappears or varies as the researcher introduces, removes or varies the independent variable (Townsend, 1953). In the scientific research, the selection and measurement of variable constitute a significant task. In this conception, the researcher reviewed literature to widen this understanding about the natures and scopes of the variables relevant in this research. He also discussed with Departmental teachers and concerned researchers of the related fields. At last she had selected 8 independent variables and one dependent variable. The independent variables were: age, education, organizational participation, financial capabilities, extent of use of quality control , distance of the market place, availability of marketing information and storage facilities. The dependent variable of this study was marketing problems of potato growers. The methods and procedures in measuring these variables are presented below:

3.6 Measurement of independent variables

The 8 characteristics of the respondents potato growers mentioned above constituted the independent variables of this study. The following procedures were followed for measuring the independent variables.

3.6.1 Age

Age of a respondent was measured by the period of time from his/her birth to the time of interview and it was measured in terms of complete years on the basis of his/her response. A score of one (1) was assigned for each year age.

3.6.2 Education

Education was measured in terms of grades (class) passed by respondent. If a respondent received education outside the school, their education was assessed in terms of education of the school, i. e. one (1) score was given for one year of schooling. For example, if the respondent passed the final examination of class V, their education score was taken as 5. If the respondent had education outside school and the level of education was equivalent to that of class V of the school than her education score was taken as 5. Each illiterate person was given a score of zero. The respondent who did not know how to read or write but able to sign only was given a score of "0.5"

3.6.3 Organizational participation

Organizational participation of a respondent was measured on the basis of the nature of their participation in different organizations. Following scores were assigned for nature of participation:

Nature of participation	Scores assigned
No participation	0
Participation as ordinary member	1
Participation as executive committee member	2
Participation as president/secretary	3

The organizational participation seems ranged from 0-27.

3.6.4 Financial capabilities

Financial capabilities of the potato growers were measured by adding a. financial capabilities from crop, b. financial capabilities from domestic animals and fisheries and c. financial capabilities from non-agricultural sources. Financial capabilities from crop were measured by adding all of the total value of their field crops including cereals, vegetables fruits etc. On the other hand, financial capabilities from domestic animals and fisheries were measured by adding return from livestock and fisheries product and byproduct. Financial capabilities from other sources were measured by adding return from service, business, day labour and others if any. By adding all of the sources income financial capabilities of the respondents were measured and it was expressed in thousand taka. A score of one was assigned for each thousand taka.

3.6.5 Extent of use of quality control

Extent of use of quality control of a respondent was measured by computing a score on the basis of potato growers' responses to seven questions. The score obtained by a respondent for responses to all the seven questions were added together to compute total score of extent of use of quality control. Each question was assigned score of three. Therefore, seven questions carried a total score of 21. For correct responses to a question, a respondent could get a score of three. While for wrong response to a question she could get a score of zero (0). For partial correct responses, scores were assigned accordingly. The sum of total scores for all the 7 questions made quality control knowledge score of a respondent. Thus quality control knowledge score of the respondent could range from 0 to 21, where 0 indicates no knowledge and 21 indicates high knowledge. Respondents obtained upto score of 10 indicated poor knowledge, 10-15 indicated fair knowledge and above 15 indicated satisfactory extent of use of quality control of potato.

3.6.6 Distance of the market place

Distance of the market place was measured by asking the question “what is the distance of market place from your farm or home”. The respondents replied based on their idea. From their responses as the distance of the market place was categorized as short, medium and high distance. Upto 1.5 km was expressed as low distance; 1.6 to 2.0 km was expressed as medium distance and above 2.0 km was expressed as high distance.

3.6.7 Availability of marketing information

Availability of marketing information of the respondent was measured by computing a score on the basis of potato growers' reply to six questions. The score obtained by a respondent for responses of the entire six questions were added together to compute their availability of marketing information scores. Each question had assigned 3, 2, 0 score for regularly, occasionally and not at all, respectively. Therefore, six questions carried a total score of 18 for regular marketing information and zero for no marketing information and others score for other combinations. The sum of total scores for all the six questions made marketing information score of a respondent. Thus marketing information score of the respondent could range from zero to 18, where respondent obtained score upto 10 indicated low level of marketing information, 10-15 indicating medium level market information and above 15 indicating high level market information of potato growers.

3.6.8 Storage facilities

Storage facilities of potato growers were identified as field store, at home, and cold store. It was measured on the basis of time period i.e. long potato growers kept their potato in those storage facilities. The time period was categorized into three short time period, medium time period and long time period and in some cases no time period which was assigned score as 1, 2 and 3, respectively. However, for no time period zero score was

assigned. The score of storage facilities could range from 0 to 9. Score obtained upto 4 was treated as low storage facilities, 5-6 treated as medium storage facilities and above 6 treated as high storage facilities.

3.7 Measurement of dependent variable

Marketing problems of the potato growers was the only dependent variable of this study.

The procedure for measuring the dependent variable was as follows:

Marketing problems of potato growers

Marketing problems of the potato growers was measured on the basis of nine problems. Each problem was categorized into severe, medium, and low and score assigned against each of them was 3, 2 and 1, respectively. However, no problem was assigned score of zero.

Marketing problems of potato growers score of a respondent was determined by summing up the weights of their responses to all the 9 statements. Thus marketing problems score of the respondents could range from 0 to 36, where zero (0) indicating no problem, upto 15 indicate low problem, 15-30 indicate medium problem and above 30 indicate high problems of potato marketing.

3.8 Hypothesis of the study

Good and Hatt (1952) defined hypothesis as “proposition which can be put to a test to determine its validity”. It may prove to be correct or incorrect in any event, however, it leads to empirical test. In the present study the following null hypotheses were formulated:

“There are no relationships between 8 selected characteristics of the potato growers and their marketing problems”.

3.9 Collection of data

The investigator herself collected data on the basis of objectives to test the hypothesis.

3.10 Data processing

For data processing and analysis the following steps were followed:

3.10.1 Compilation of data

After completion of field survey all the interview schedules were compiled, tabulated and analyzed according to the objectives of the study. In this process all the responses in the interview schedule were given numerical coded values. The responses to the question in the interview schedule were transferred to a master sheet to facilitate tabulation. Tabulation was done on the basis of categories developed by the investigator herself.

3.10.2 Categorization of respondents

For describing the various independent and dependent variables the respondents were classified into various categories. In developing categories the researcher was guided by the nature of data and general consideration prevailing in the social system. The procedures have been discussed while describing the variable in the subsequent sections of next Chapter.

3.11 Data analysis

Data collected from the respondents were compiled, coded, tabulated and analyzed in accordance with the objectives of the study. Various statistical measures such as frequency counts, percentage distribution, average, and standard deviation were used in describing data. SPSS (version 11.5) computer program were used for analyzing the data. The categories and tables were used in describing data. The categories and tables were also used in presenting data for better understanding.

For determining the association of the selected characteristics of the potato growers with the marketing problem, Pearson Product Moment Correlation was used. Five percent (0.05) level of probability was used as the basis for rejecting any null hypothesis. In order to find out the relationship between the selected dependent and independent variables correlation co-efficient was calculated.



Chapter IV

Results and Discussion

CHAPTER IV

RESULTS AND DISCUSSION

This Chapter deals with the findings that were recorded in accordance with the objective of the study along with their logical interpretation. The Chapter content is divided in three (3) sections. The first section deals with the characteristics of the respondents potato growers. The second section deals with the marketing problems of potato growers. The third section deals with the relationship between individual characteristics of the potato growers with their marketing problems.

4.1 Characteristics of the respondents

An individual possesses various interrelated characteristics of the respondents of potato growers were collected under the present study. It was therefore, hypothesized that the characteristics of the potato growers would have an effect on marketing problems. The 8 selected silent features of the respondent's potato growers such as age, education, organizational participation, financial capabilities, extent of use of quality control , distance of the market place, availability of marketing information and storage facilities that might influence on marketing problems of potato growers are presented below-

4.1.1 Age

The age of the potato growers ranged from 25 to 55 with a mean and standard deviation of 38.27 and 8.523 respectively. Considering the observed age of the respondents they were classified into three categories namely 'young', 'middle' and 'old' aged. The distribution on accordance of their age the respondents potato growers are presented in Table 4.1.



Table 4.1 Distribution of the potato growers according to their age

Categories	Number of respondents	Percent	Mean	Standard deviation
Young aged (below 35 years)	44	41.9	38.27	8.523
Middle aged (35-50 years)	52	49.5		
Old aged (above 50 years)	9	8.6		
Total	105	100		

Table 4.1 indicates that the middle aged potato growers constitute the highest proportion (49.5 percent) followed by young aged category (41.9 percent) and the lowest proportion were made by the old aged category (8.6 percent). Data also indicates that the young and middle aged potato growers constitute about 91.2 of the respondents.

The younger and middle aged farmers generally tend to involved in potato marketing than the older. Generally, it could be said, Munshigonj area is one of the potato growing area of Bangladesh. The age distribution of this area influences the production trend. Because young and middle age group people are innovative and risk bearing. As the younger seems to more energetic, innovative and consider all things in economical point of view. Generally young and middle aged people completed all the task of production effectively and timely in order to attained with more and appropriate production.

4.1.2 Education level

The educational scores of the respondent's farmer ranged from 0 to 16 with a mean and standard deviation of 3.36 and 4.764 respectively. Based on their educational scores, the potato growers were classified into five categories such as 'illiterate' (0), 'can sign name only' (0.5), 'primary education' (1 to 5), 'secondary education' (6 to 10), higher secondary and above (above 11). The distribution of the potato growers according to their level of education has been presented in Table 4.2.

Table 4.2 Distribution of the potato growers according to their education

Categories	Number of respondents	Percent	Mean	Standard deviation
Illiterate (0)	7	6.7	3.82	3.230
Can sign only (0.05)	21	20.0		
Primary education (1-5)	48	45.7		
Secondary education (6-10)	19	18.1		
Above secondary (above 10)	10	9.5		
Total	105	100		

Table 4.2 shows that potato growers under 'can sign only' category constitute the lowest proportion (6.7 percent) compared to 9.5 percent above 'secondary level category. On the other hand the highest 45.7 percent under the group of primary education, 20.0 percent can sign only and 18.1% under secondary level education. Education broadens the horizon of outlook of potato growers and expands their capability to analyze any situation related to production and marketing. It was found that appreciable proportions (63.8 percent) of the potato growers were under primary to secondary level educated. The situation might appear to be quite normal in a usual background of Bangladesh.

An educated potato grower is likely to be more responsive to the modern facts, ideas, technology and information of cultivation. To adjust with the same, they would be vulnerable to adopt as well as involve with modern cultural, processing and storage facilities. About 90 percent respondents were educated in Munshigonj upazilla. This is the exceptional situation in Bangladesh. This is why the production rate is higher in Munshigonj district than the other district of Bangladesh. The educated farmers can face the problems positively and they are able to adjust the problem.

4.1.3 Organizational participation

Organizational participation score of the potato growers ranged from 6 to 32 with a mean and standard deviation of 14.65 and 5.982, respectively. According to contact with service providers the respondents were classified into three categories viz. 'Low level participation, 'medium level participation and 'high level participation' on the basis of their observed scores. The distribution of the potato growers according to organizational participation has been presented in Table 4.3.

Table 4.3 Distribution of the potato growers according to their organizational participation

Categories	Number of respondents	Percent	Mean	Standard deviation
Low organizational participation (upto 10)	31	29.5	14.65	5.982
Medium organizational participation (11-20)	59	56.2		
High organizational participation (above 20)	15	14.3		
Total	105	100		

Data in Table 4.3 indicates that the medium levels organizational participation constitutes the highest proportion (56.2 percent) followed by low level participation (29.5 percent) and high level participation (14.3 percent). Table 4.3 showed that the maximum percentage of respondents is the category of the group of low to medium level organizational participation. More organizational participation could create opportunity for receiving improved technology and information. The potato growers with more organizational participation lead to use more sources of information and facilities of potato marketing. The farmers who have low and medium organizational participation might face marketing problems negatively, but those who have high organizational participation could face marketing problems positively.

4.1.4 Financial capabilities

Financial capabilities expressed the economical condition of the potato growers. Financial capabilities of the respondents potato growers ranged from 100 to 539 thousand taka with a mean and standard deviation of 213.10 and 112.80, respectively. On the basis of their financial capabilities of the potato grower was generally classified into three categories, such as low, medium and high financial capabilities. The distribution of the potato growers according of to the financial capabilities categories has been presented in Table 4.4.

Table 4.4 Distribution of the potato growers according to their financial capabilities

Categories	Number of respondents	Percent	Mean	Standard deviation
Low financial capabilities (Upto 200)	61	58.1	213.10	112.80
Medium financial capabilities (201-400)	37	35.2		
High financial capabilities (above 400)	7	6.7		
Total	105	100		

Data in table 4.4 revealed that the potato growers family having low financial capabilities constitute the highest proportion (58.1 percent) followed by the potato growers family having medium financial capabilities (35.2 percent) and high financial capabilities (6.7 percent). Financial capabilities of an individual allows him to invest more in potato production and storage as well as in taking risks for storage of potato.

4.1.5 Extent of use of quality control

Extent of use of quality control were measured on the basis of cleanness, grading, weight, colour, smooth/rough, fresh and rotten and number of buds in potato. The level of quality control was determined regularly, occasionally, rarely basis. In order to ascertain the potato growers extent of use of quality control, they were asked (7)

questions, with equal value marking 3 for each question. So each respondent was supposed to get 21 marks for correct answers and zero for wrong answer. Distribution of the potato growers on the basis of their extent of use of quality control has been presented in Table 4.5 which depicts a clear picture on potato growers' extent of use of quality control.

The extent of use of quality control score of the potato growers ranged from 3-17 against the possible range of 0 to 21, with an average of 10.30 and standard deviation 4.222. Analysis of the data presented in Table 4.5 revealed that over 50.5 percent of the respondents fell under low extent of use of quality control category and 35.2 percent fell medium category, however only about 14.3 percent fell under high extent of use of quality control category. The combined score of low and medium extent of use of quality control constituted the highest proportion (85.7 percent) of the potato growers.

Table 4.5 Distribution of the potato growers according to their extent of use of quality control

Categories	Number of respondents	Percent	Mean	Standard deviation
Low knowledge (upto 10)	53	50.5	10.30	4.222
Medium knowledge (11-15)	37	35.2		
High knowledge (above 15)	15	14.3		
Total	105	100		

Extent of use of quality control of potato growers plays an important role in marketing of potato. The information provided in Table 4.5 reveals that majority (85.7 percent) of the potato growers had low to medium extent of use of quality control which might not help them to create a satisfactory situation for quality control of potato.

4.1.6 Distance of the market place

Distance of market place expressed in the distance in kilometer from the farmer farm and also home and has been presented in Table 4.6. The average distance was 1.69 km with standard deviation 0.534 and the range was 1.0 to 2.5 km. The findings at Table 4.6 indicate that about 56.2% potato growers stayed in short distance and 24.8% respondents were stayed in medium distance and 19.0% stayed in high distance.

Table 4.6 Distribution of the potato growers according to their distance of the market place

Categories	Number of respondents	Percent	Mean	Standard deviation
Short distance (upto 1.5 km)	59	56.2	1.69	0.534
Medium distance (1.6-2.0 Km)	26	24.8		
High distance (above 2.0 km)	20	19.0		
Total	105	100		

Distance of market place indicated how much time they spent for marketing their products. Long distance is not effective for marketing of any product. On the other hand, it is difficult to collect information from long distance place and it requires transportation. Short distance of marketing place is more effective in consideration of market information and transportation.

4.1.7 Availability of marketing information

The observed score of marketing information of the respondents potato growers ranged from 3-18, the mean being 9.66 and standard deviation 3.726. Based on their marketing information, the potato growers were classified into three categories: "low level market information" (upto 10), "medium level of market information" (10-15) and "high level market information" (above 15). The distribution of the farmers according to their marketing information is shown in Table 4.7.

Table 4.7 Distribution of the potato growers according to their availability of marketing information

Categories	Number of respondents	Percent	Mean	Standard deviation
Low level market information (upto 10)	66	62.9	9.66	3.726
Medium level market information (11-15)	29	27.6		
High level market information (above 15)	10	9.5		
Total	105	100		

Data contained in the table indicate that the highest portion (62.9 percent) of the potato growers' were in low level market information group, while 27.6 percent respondents were in medium level market information group and only 9.5 percent were in high level group. Most of potato growers of the study area were low to medium group but it is necessary to have available market information for attaining highest market price.

4.1.8 Storage facility

Storage facilities are an important factor for marketing problem of the potato growers. Scores obtained on storage facility varied from 3 to 8. An average storage facilities scores of the potato growers were 5.65 and standard deviation were 1.359 (Table 4.8).

Table 4.8 Distribution of the potato growers according to their storage facility

Categories	Number of respondents	Percent	Mean	Standard deviation
Low storage facility (upto 4)	25	23.8	5.65	1.359
Medium storage facility (5-6)	55	52.4		
High storage facility (above 6)	25	23.8		
Total	105	100		

Data in Table 4.8 revealed that highest (52.4 percent) proportion of potato growers had medium storage facilities, while 23.8%percent potato growers had both low and high storage facilities, respectively.

4.2 Dependent Variable

Marketing problems of the potato growers was measured on the basis of 9 statements. Marketing problems of potato growers score of a respondent was determined by adding all the 9 items. Thus marketing problems score could range from zero (0) indicating no problem, upto 10 indicate low problem, 11-20 indicate medium problem and above 20 indicating high problems of potato marketing. The findings are presented in Table 4.11.

The average marketing problems score was 24.56 with standard deviation 10.124 and range was 8-42 scores. Among the respondents the highest 49.5 percent potato belongs to the group of medium problem group followed by 28.6 percent in high problem group and 21.9 percent in low problem group. Among the respondent potato growers total 79.1 percent respondents' potato growers facing medium to high level problem in potato marketing. Uddin (2004) reported that marketing problem severely affected the farmers.

Table 4.9 Distribution of the potato growers according to their marketing problems

Categories	Number of respondents	Percent	Mean	Standard deviation
Low problem (upto 10)	23	21.9	24.56	10.124
Medium problem (11-20)	52	49.5		
High problem (above 20)	30	28.6		
Total	105	100		

4.3 Relationship of the selected characteristics of potato growers with their marketing problems

Pearson product moment correlation co-efficient was computed in order to find out the extent of relationship between the dependent variable and independent variables. To reject any the null hypothesis 0.05 was used. A statistically significant and non-significant relationship was observed when the computed value or “r” was greater or smaller than the tabulated value, respectively.

4.3.1 Relationship between age and marketing problems of potato growers

Relationship between age and marketing problems of potato growers was determined by the Pearson product moment correlation.

The coefficient of correlation between age and marketing problems of potato growers has been presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be 0.612. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables “r” (0.612) was found to be greater than the tabulated value ($r = 0.256$) with 103 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a positive trend between the concerned variables.*

Based on the above findings it was concluded that age had significant positive relationships with marketing problems of potato growers. This represents that age of the

potato growers was an important factor in marketing problems and with the increases of age of the respondent's potato marketing problem also increases. Age of the potato growers does influence potato marketing and aged potato growers face more problem than the younger.

Table 4.10. Pearson's product moment co-efficient of correlation showing relationship between dependent and independent variables

Dependent variable	Independent variable	Value of co-efficient of correlation	Table Value of 'r' with 103 df	
			0.05 level	0.01 level
Marketing problems of potato growers	Age	0.612**	0.196	0.254
	Education	-0.401**		
	Organizational participation	-0.171		
	Financial capabilities	-0.414**		
	Extent of use of quality control	-0.211*		
	Distance of the market place	0.679**		
	Availability of marketing information	-0.477**		
	Storage facilities	-0.503**		

** Correlation is significant at the 0.01 level;

* Correlation is significant at the 0.05 level

4.3.2 Relationship between education level and marketing problems of potato growers

Relationship between education level and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between education level and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found -0.401. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables "r" (-0.401) was found to be greater than the tabulated value ($r = 0.256$) with 103 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that education level had significant negative relationships with marketing problems of potato growers. This represent that education level of the potato growers was an important factor in marketing problems and with the increases of education level of the respondent potato marketing problem decreases. Education level of the potato growers does influence potato marketing and educated potato growers facing comparatively minimum problem than the non educated.

4.3.3 Relationship between organizational participation and marketing problems of potato growers

Relationship between organizational participation and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between organizational participation and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found -0.171. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables "r" (-0.171) was found to be smaller than the tabulated value ($r = 0.196$) with 103 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was accepted.*
- *The relationship between the concerned variables was statistically non significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that organizational participation had no significant relationships with marketing problems of potato growers. This represents that organizational participation of the potato growers was not so important factor in marketing problems.

4.3.4 Relationship between financial capabilities and marketing problems of potato growers

Relationship between financial capabilities and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between financial capabilities and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found -0.414. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables "r" (-0.414) was found to be greater than the tabulated value ($r = 0.256$) with 103 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that financial capabilities had significant negative relationships with marketing problems of potato growers. This represent that financial capabilities of the potato growers was an important factor in marketing problems and with the increases of financial capabilities of the respondent potato marketing problem also decreases. Financial capabilities of the potato growers do influence potato marketing and higher financial capabilities lead to fewer problems.

4.3.5 Relationship between extent of use of quality control and marketing problems of potato growers

Relationship between extent of use of quality control and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between extent of use of quality control and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found -0.211. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables "r" (-0.211) was found to be greater than the tabulated value ($r = 0.196$) with 103 degrees of freedom at 0.05 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.05 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that extent of use of quality control had significant negative relationships with marketing problems of potato growers. This represent that extent of use of quality control of the potato growers was an important factor in marketing problems and with the increases of marketing problems of the respondent potato growers marketing problem also decreases.

4.3.6 Relationship between distance of market place and marketing problems of potato growers

Relationship between distance of market place and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between distance of market place and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found 0.679. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables "r" (0.679) was found to be greater than the tabulated value ($r = 0.256$) with 103 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a positive trend between the concerned variables.*

Based on the above findings it was concluded that distance of market place had significant positive relationships with marketing problems of potato growers. This represents that distance of market place of the potato growers was an important factor in marketing problems and with the increase of distance of market place of the respondent's potato growers marketing problem also increases.

4.3.7 Relationship between availability of marketing information and marketing problems of potato growers

Relationship between availability of marketing information and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between availability of marketing information and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found -0.477. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables "r" (-0.477) was found to be greater than the tabulated value ($r = 0.256$) with 103 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that availability of marketing information had significant negative relationships with marketing problems of potato growers. This represents that availability of marketing information of the potato growers was an important factor in marketing problems and with the increases of marketing information the respondent potato growers marketing problem also decreases.

4.3.8 Relationship between storage facilities and marketing problems of potato growers

Relationship between storage facilities and marketing problems of potato growers was determined by the following Pearson product moment correlation coefficient.

The coefficient of correlation between storage facilities and marketing problems of potato growers presented in Table 4.10. The coefficient of correlation between the concerned variables was found -0.503. The following observations were made on the basis of the value of correlation coefficient between the two variables of the study.

- *The calculated value between the concerned variables “r” (-0.503) was found to be greater than the tabulated value ($r = 0.256$) with 103 degrees of freedom at 0.01 level of probability.*
- *The null hypothesis was rejected.*
- *The relationship between the concerned variables was statistically significant at 0.01 level of probability.*
- *The relationship showed a negative trend between the concerned variables.*

Based on the above findings it was concluded that storage facilities had significant negative relationships with marketing problems of potato growers. This represents that storage facilities of the potato growers was an important factor in marketing problems and with the increases of storage facilities of the respondent potato marketing problem also decreases. Storage facilities of the potato growers do influence potato marketing and lowest storage facilities of potato growers face more problems.



Chapter V

Summary and Conclusion

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The study was conducted in the Lohajang upazilla under Munshigonj district. Among the total potato growers of Kalma Union 105 were selected from 3 villages. A well structured interview schedule was developed based on objectives of the study for collecting information. The researcher herself collected data from the sample respondents through personal contact. The independent variables were: age, education, organizational participation, financial capabilities, extent of use of quality control, distance of the market place, availability of marketing information and storage facilities. The dependent variable of this study was marketing problems of potato growers.

Data collection was started on 12 April, 2008 and completed on 20 May, 2008. Data collected from the respondents were compiled, coded, tabulated and analyzed in accordance with the objectives of the study. Various statistical measures such as frequency counts, percentage distribution, average, and standard deviation were used in describing data. Co-efficient of correlation test was used to explore relationship between the concerned variables. The major findings of the study are summarized below:

5.1 Summary of findings

5.1.1 Characteristics of the respondents

Age

Among the respondents middle aged potato growers constitute the highest proportion (49.5 percent) followed by young aged category (41.9 percent) and the lowest proportion were made by the old aged category as 8.6 percent.

Education level

Potato growers under 'can sign only' category constitute the lowest proportion (6.7 percent) compared to 9.5 percent above 'secondary level category. On the other hand the highest 45.7 percent under the group of primary education, 20.0 percent can sign only and 18.1% under secondary level education.

Organizational participation

Among the total respondents medium levels organizational participation constitutes the highest proportion (56.2 percent) followed by low level participation (29.5 percent) and high level participation (14.3 percent).

Financial capabilities

Among the total potato growers having low financial capabilities constitute the highest proportion (58.1 percent) followed by the potato growers family having medium financial capabilities (35.2 percent) and high financial capabilities (6.7 percent).

Extent of use of quality control

In consideration the knowledge score of the potato growers over 50.5 percent of the respondents fell under low extent of use of quality control category and 35.2 percent fell medium category, however only about 14.3 percent fell under high extent of use of quality control category.

Distance of the market place

Among the respondents potato growers about 56.2% potato growers were stay in short distance and 24.8% respondents were stay in medium distance and 19.0% stay in high distance.

Availability of marketing information

The highest portion (62.9 percent) of the potato growers were low level market information group, while 27.6 percent respondents were medium level market information group and only 9.5 percent were high level market information group.

Storage facility

Among the respondents of potato growers the highest 52.4 percent potato growers had medium storage facilities, while 23.8%percent potato growers had low and high storage facilities.

5.1.2 Marketing problems of potato growers

Among the respondents the highest 49.5 percent potato growers belonged to the medium problem group followed by 28.6 percent in high problem group and 21.9 percent in low problem group. Among the respondent potato growers total 79.1 percent respondents potato growers were facing medium to high level problem in potato marketing.

5.1.3 Findings of hypothesis testing

- Age had significant positive relationships with marketing problems of potato growers.
- Education level had significant negative relationships with marketing problems of potato growers.
- Organizational participation had no relationships with marketing problems of potato growers.
- Financial capabilities had significant negative relationships with marketing problems of potato growers.

- Extent of use of quality control had significant negative relationships with marketing problems of potato growers.
- Distance of market place had significant positive relationships with marketing problems of potato growers.
- Availability of marketing information had significant negative relationships with marketing problems of potato growers.
- Storage facilities had significant negative relationships with marketing problems of potato growers.

5.2 Conclusions

Based on the findings of the study the following conclusions have been drawn:

1. Among the respondents middle aged potato growers constitute the highest proportion (49.5 percent). Therefore, it may be concluded that most of the potato growers of the study area were middle aged.
2. The highest (45.7 percent) of potato growers were under the group of primary education. Therefore, it may be concluded that the education level of the potato growers were not yet at satisfactory level.
3. Among the total respondents medium level organizational participation constitutes the highest proportion (56.2 percent). There is scope to increase the organizational participation in order to improve the overall orientation of the potato growers.

4. Among the potato growers low financial capabilities constituted the highest proportion (58.1 percent), Therefore, it may be concluded that the financial capabilities of the respondents' potato growers was not in satisfactory level.
5. The extent of use of quality control score of the potato growers was over 50.5 percent under low use category. Therefore, it may be concluded that the respondent farmers did not use the quality control measures on a high quality level.
6. Among the respondents potato growers about 56.2% stayed in short distance from market place. Therefore, it may be concluded that marketing system was readily available to most of the potato growers.
7. The highest portion (62.9 percent) of the potato growers were in low level market information group. Therefore, it may be concluded that adequate marketing information was not available to most of the potato growers.
8. Among the respondents of potato growers the highest (52.4 percent) proportion had medium storage facilities. Therefore, it may be concluded that storage facilities was more or less satisfactory to the respondents potato growers.
9. Age and distance of market place showed significant positive relationship between marketing problems. Therefore, it may be concluded that aged growers and farmers having high distance of market place face more problem.
10. Education level, financial capabilities, extent of use of quality control , availability of marketing information and storage facilities showed negative relationship between marketing problems of potato growers, Therefore, it may be concluded that these characteristics need to be improved for the potato growers so that they confront minimum marketing problems.

5.3 Recommendations

5.3.1 Recommendation for policy implication

Based on the findings and conclusions of the study, the following recommendation were made for policy implication:

1. The characteristics of the potato growers as education level, financial capabilities, extent of use of quality control , availability of marketing information and storage facilities showed negative relationship between marketing problems of potato growers. In view of the above facts it may be recommended that these characteristics need to be improved address marketing problems of the potato growers more carefully.
2. Age showed significant positive relationship with marketing problems. It is necessary to create scope for the younger farmers for potato cultivation. As well as proper support for the other aged potato growers is also necessary.
3. Distance of market place showed significant positive relationship between marketing problems. It is necessary to increase the marketing facilities near by the potato growers.
4. Proper steps should be taken for increasing the financial abilities of the potato growers. The concerned authorities should increase the availability of credit from any commercial bank or non government organization.
5. Availability of inputs in proper time might be helpful for maximum production. It is therefore, necessary to take care for ensuring the availability of inputs for potato cultivation as per as possible.

5.3.2 Recommendation for further study

The following suggestions are put forward for further research studies:

1. Further studies should be considered covering more dimensions of marketing problems as perceived by the farmers.
2. Relationship of eight characteristics of potato growers was investigated in this study. Further research should be conducted to explore relationship of other characteristics of the potato growers for identifying the problems of potato growers.
3. Training exposure of the potato growers may be intensively investigated for identify the potato growers problems.
4. Organizational participation of the farmers did not show any significant relationship with marketing problems of potato growers. Further research is necessary to verify such relationship.





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Appendices

APPENDIX

Appendix I. English version of the interview schedule

**DEPARTMENT OF AGRICULTURAL EXTENSION AND INFORMATION SYSTEM
SHER-E-BANGLA AGRICULTURAL UNIVERSITY
DHAKA 1207**

An interview schedule for a research study entitle

“Exploration of Marketing Problems of Potato Farmers in Munshigonj District”

Serial No :
Name of the respondent :
Village :
Upazilla :
District :

(Please answer the following questions. Secrecy will be strictly maintained)

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

2. Education

What is the level of your education?

a) Illiterate: b. Can sign only c. Have passed class.....

3. Organizational Participation: (Please furnished the following information)

Sl No.	Name of the organization	Nature of participation (year)			
		No participation	Ordinary member	Executive member	President/ Secretary
1.	Eidgah Committee				
2.	School Committee				
3.	Mosque/Temple committee				
4.	Bazar committee				
5.	Co-operative society				
6.	NGO organized society				
7.	Deep tube well committee				
8.	Union Parishad committee				
9.	Others, if any				

4. Financial capabilities

a. Financial capabilities from crop: Please mention the financial capabilities of your family from crop in the last season

Sl No.	Name of crops	Land area (ha)	Production (kg)	Value per unit (Taka)	Total value (Taka)
1.	Aus rice				
2.	Aman rice				
3.	Boro rice				
4.	Wheat				
5.	Maize				
6.	Jute				
7.	Pulse crops				
8.	Spices				
9.	Vegetables				
10.	Sugarcane				
11.	Potato				
12.	Fruits				
13.	Others (specify)				
Sub total (a) =					

b) Financial capabilities from domestic animals and fisheries in the last year

Sl No.	Sources of financial capability	Total unit of production	Value per unit (Taka)	Total value (Taka)
1.	Livestock			
2.	Poultry			
3.	Fisheries (area of pond)			
4.	Others (if any)			
Sub total (b) =				



c) Financial capabilities from non-agricultural sources in the last year

Sl. No.	Sources of financial capability	Type	Total Value (Taka)
1.	Services		
2.	Business		
3.	Day labour		
4.	Others (if any)		
Sub total (c) =			

Total financial capability = (a + b + c) =Tk.

5. Extent of use of quality control: How frequent you follow the methods of quality control of potato before marketing?

Sl. No.	Items of quality control	Degree of quality control			
		Regularly	Occasionally	Rarely	Not at all
1.	Cleanliness				
2.	Grading				
3.	Weight				
4.	Colour				
5.	Smooth/Rough				
6.	Fresh/Rotten				
7.	No of buds				

6. Distance of the market place: (Please mention the distance of market place from your farm or home)

Distance ----- Km

7. Availability of marketing information: (Please furnished the following information)

Sl. No.	Item	Regularly	Occasionally	Rarely	Not at all
1.	Information about market price				
2.	Information about ware housing				
3.	Information about quality product				
4.	Information related to production				
5.	Information about product demand				
6.	Information about marketing facilities				



8. Storage facilities: (Please mention the nature/items of your potato storage)

Sl. No.	Item/nature	Storage period			
		Short period	Medium period	Long period	Not at all
1.	Field store				
2.	At home				
3.	Cold storage				

9. Marketing problems of potato farmers: Mention the extent of the following problems you face during marketing?

Sl. No.	Problems	Severe	Medium	Low	No Problem
a.	Storage problem				
b.	Pricing problem				
c.	Presence of middleman				
d.	Financial problem				
e.	Lack of technical knowledge				
f.	Distance of the market from production area				
g.	Transportation problem				
h.	Holding capacity problem				
i.	Electricity problem				

Signature of the Interviewer

Date:

Appendix II. Correlation Matrix

Characters	Age	Education	Organizational participation	Financial capabilities	Knowledge on quality control	Distance of the market place	Availability of marketing information	Storage facilities	Marketing problems of potato growers
Age	1.00								
Education	0.215*	1.00							
Organizational participation	-0.458**	0.124	1.00						
Financial capabilities	0.369**	0.504**	-0.243*	1.00					
Knowledge on quality control	-0.681**	0.124	0.425**	-0.216*	1.00				
Distance of the market place	-0.121	0.228*	-0.426**	0.475**	0.021	1.00			
Availability of marketing information	0.045	-0.458**	0.335**	-0.111	-0.365**	0.121	1.00		
Storage facilities	-0.542**	0.241*	0.468**	0.012	0.345**	-0.654**	0.118	1.00	
Marketing problems of potato growers	0.612**	-0.401**	-0.171	-0.414**	-0.211*	0.679**	-0.477**	-0.503**	1.00

** Correlation is significant at the 0.01 level;

* Correlation is significant at the 0.05 level

76 ()
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