CONSUMERS' PERCEPTION TOWARDS ORGANIC FOOD IN SOME SELECTED AREAS OF BANGLADESH

TAHMINA AKTER

DEPARTMENT OF AGRICULTURAL EXTENSION &

INFORMATION SYSTEM

SHER-E-BANGLA AGRICULTURAL UNIVERSITY

DHAKA-1207

DECEMBER, 2021

CONSUMERS' PERCEPTION TOWARDS ORGANIC FOOD IN SOME SELECTED AREAS OF BANGLADESH

BY

TAHMINA AKTER
Reg. No. 19-10377
Mobile: 01914962516
Email: tahmina23feb@gmail.com

A thesis
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 (MS)

IN

AGRICULTURAL EXTENSION

SEMESTER: JULY-DECEMBER, 2021

APPROVED BY:

(MD MASUM ABDULLAH) Supervisor Assistant Professor Dept. of Agril. Ext. and Info. System Sher-e-Bangla Agricultural University	**(TANUSHREE MONDAL)** Co-Supervisor Assistant Professor Dept. of Agril. Ext. and Info. System Sher-e-Bangla Agricultural University

Prof. Dr. Mohammad Zamshed Alam
Chairman
Examination Committee

Dept. of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207

CERTIFICATE

This is to certify that the thesis entitled **"CONSUMERS' PERCEPTION TOWARDS ORGANIC FOOD IN SOME SELECTED AREAS OF BANGLADESH"** submitted to the department of Agricultural Extension and Information System, Faculty of Agriculture, Sher-e-Bangla Agricultural University, Sher-e-Bangla Nagar, Dhaka in partial fulfillment of the requirements for the degree of Master of Science (M.S.) in Agricultural Extension, embodies the result of a piece of bona fide research work carried out by Tahmina Akter**, Registration No. 19-10377** 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, as has been availed of during the course of this investigation has been duly acknowledged by the Author.

Dated:
Dhaka, Bangladesh

Md Masum Abdullah
Supervisor
Department of Agricultural Extension
and Information System
Sher-e-Bangla Agricultural University

DEDICATED

TO

MY BELOVED

PARENTS

ACKNOWLEDGEMENT

At first the author expresses her gratefulness to The Almighty Allah who has helped her to pursue her higher education in agriculture and for giving the potency of successful completion of this research work.

With deepest emotion the author wish to express her pious gratitude, indebtedness, felicitation, sincere appreciation to her research ***Supervisor Assistant Prof. Md Masum Abdullah****, Department of Agricultural Extension and Information System, Sher-E-Bangla Agricultural University, Dhaka, Bangladesh for his discursive guidance, intense supervision and continuous encouragement during the entire period of research work.*

The author expresses her immense appreciation and gratitude to her ***Co-supervisor, Assistant Prof. Tanushree Mondal,*** *Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for her valuable advice and constructive criticism during the critic period of research work.*

The author expresses her sincere respect ***Prof. Dr. Mohammad Zamshed Alam****, Chairman, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for providing valuable advice and sympathetic consideration regarding to the research.*

The author would like to extend her appreciation to all teachers and staffs of the Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for their co-operation and support during the study period.

The author can never repay the debt of her heavenly grandfather, grandmother and beloved parents, husband, uncle, aunty, sisters, brothers and well-wishers for their inspiration, constant encouragement and sacrifice for her higher education.

The Author

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABBREVIATIONS

Ag. Ext. Ed.	Agricultural Extension Education
OA	Organic Agriculture
MORI	Market & Opinion Research International Limited
β	Multiple Regression
GM	Genetically Modified
et al.	All Others
FAO	Food and Agriculture Organization
UN	United Nation
GoB	Government of Bangladesh
WHO	World Health Organization
MoYS	Ministry of Youth and Sports
BARI	Bangladesh Agricultural Research Institute
SD	Standard Deviation
NGOs	Non-government Organizations
BARCIK	Bangladesh Resource Center for Indigenous Knowledge
UBINIG	Unnayan Bikalper Nitinirdharoni Gobeshona
UAO	Upazila Agriculture Officer
SAU	Sher-e-Bangla Agricultural University
SPSS	Statistical Package for Social Sciences
OF	Organic Food

CONSUMERS' PERCEPTION TOWARDS ORGANIC FOOD IN SOME SELECTED AREAS OF BANGLADESH

TAHMINA AKTER

ABSTRACT

The present development in the food market indicates that organic food became one of the important parts of the market. The purposes of the study were thus to describe the selected characteristics of the consumers perception towards organic food; to determine the extent of consumers perception towards organic food and to explore the relationship between each of the selected characteristics of consumers with their perception towards organic food. The study was purposively conducted at Narsingdi and Dhaka district. Validated and well-structured interview schedule was used to collect data from 105 consumers during 15th February, 2022 to 15th March, 2022. Descriptive statistics and Pearson's Product Moment Correlation was used. The majority (79.05 percent) of the respondents had favorable perception towards organic food compared to having 14.28 percent unfavorable perception towards organic food and only 6.67 percent had neutral perception towards organic food, respectively. Among seven selected characteristics of the consumer five characteristics namely; education, source of weekly food shopping, extent of information received about organic food and availability of organic food had significant positive relationship with their perception towards organic food but barriers to purchasing organic food had negatively significant relationship with their perception towards organic food. The rest two characteristics namely age and annual family income had no significant relationship with their perception towards organic food.

CHAPTER-I
INTRODUCTION

1.1 General Background of the Study

Organic Food (OF) is becoming popular throughout the world day by day. In general, Organic Food (OF) includes the growing of crops by a set of guidelines that prohibit synthetic products or chemicals such as fertilizers, pesticides, and plant growth promoters like hormones. This concept evolved in the first half of the 20th century to respond to incremental chemical practices. The Codex Committee of the Food and Agriculture Organization of the United Nations defined, "Organic Food is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system" (FAO, 2019). Organic farming facilitates the usage of eco-friendly technologies and materials that enhances well-balanced agro-ecosystems. The other primary principle is the prohibition of artificial chemical use to ensure safe food production. It is noteworthy to mention that organic farming's primary goal is to balance soil health and productivity (FAO, 2019).

At present, this system seems to be an ideal and valid solution to produce safe food and pure foods that minimize the negative consequences to human health and the environment resulted from chemical agriculture. Consumers are currently becoming conscious and critical about the quality of food products and by-products for a healthy life (Mottalib et al., 2018). OF has the potential to produce safe food in addition to environmental sustainability and preserving cultural heritage (Mottalib et al., 2018). Consequently, the demand for organic products has been growing significantly throughout the world, especially in developed

countries, which indirectly control developing countries' export markets. Studies in Africa, Asia, and Latin America indicate that farmers grow organic food generally earn higher incomes than their conventional counterparts (UN, 2008). By realizing this fact, agricultural development in many countries has shifted from conventional agriculture to organic farming systems and introduced the organic agriculture policy. Though Bangladesh is an agro-based country, most farmers are poor and equipped with traditional agricultural practices and systems. Conventional agricultural practices could not keep pace with the ongoing demands of the burgeoning population.

Consequently, the government introduced the chemical-intensive farming system to meet increased needs. However, chemical agriculture contributed to achieving self-sufficiency in grain food production but created many negative consequences to human health and the environment. Agrochemicals have been linked to a wide range of human health hazards (Rahman et al., 2015), ranging from short-term impacts such as headaches and nausea to chronic effects like cancer, reproductive harm, and endocrine disruption. More than 03 million people are affected by pesticides, and about 370,000 deaths occur per year (WHO, 2018). In Bangladesh, every year, a noticeable number of people are affected by agrochemicals and suffering from diseases (Shammi et al., 2020). Furthermore, depletion of soil organic matter is another concern of chemical agriculture (Biswas & Naher, 2019). As a result, overall crop productivity has been declining in Bangladesh. Even a lack of organic foods is considered one of the significant challenges for developing inbound tourism in Bangladesh (Rahman, 2021). In addition, the food safety issue is one of the major concerns for expanding international trade in agro-products. Buyers in the mainstream markets are increasingly enforcing stringent conditions on the suppliers to comply with various standards. OA has become an alternative tool to have safe food, sustain crop productivity, and increase soil fertility under such situations. However, many growers have come forward to

produce organic products and are being sold in different super shops, especially in Dhaka city at a higher price. Consumers are interested in buying such organic products. In most cases, they are confused about whether the products are organic due to a lack of certification. Although the Bangladesh government adopted Organic Agriculture Policy -2106', its implementation has not yet formally started. People's perceptions of organic foods have rarely been studied (Rahman & Noor, 2016). The study aimed to assess the awareness level of consumers about organic products in Bangladesh. The study also strived to determine the current status of organic farming and explore the problems related to the extension of organic farming in Bangladesh.

1.2 Emergence of Organic Food Products in Recent Decades

In the early 1990s, organic farming was started in Bangladesh on a minor scale. In Bangladesh, few Non-government Organizations (NGOs) started organic farming at first. These NGOs organize interested farmers, provide training, technical advice, financial support, and help market organic products. Organic farmers formed groups and co-operated with each other towards a sustainable farming system. Currently, 75 NGOs and some conscious farmers are working towards organic farming (Sharma, 2006). Among the NGOs, 47 are directly involved in the production, where few works for awareness building (Sarker & Itohara, 2008). Among the NGO's Proshika, Unnayan Bikalper Nitinirdharoni Gobeshona (UBINIG), Bangladesh Resource Center for Indigenous Knowledge (BARCIK), and Research Initiatives, Bangladesh (RIB) ranked in the topmost position. Simultaneously, some private entrepreneurs like Kazi and Kazi Ltd, Shams Enterprise, Shabajpur Tea Estate Ltd are in the top place to invest in organic farming. Some entrepreneurs have already started exports their organic products to different developed countries. Today, horticultural crops, cotton, aromatic rice, and organic shrimp farming are being practiced on a small scale in Bangladesh to mainly export and target higher-income urban people. Currently, organic products

are being sold through different super shops such as Agora, Meenabazar, Nandan, etc., yet they do not ensure fair prices for the producing farmers (Mottalib et al., 2018). Bangladesh Agricultural Research Institute (BARI) also took the initiative to conduct the necessary research regarding organic farming and established an Organic Block in its Experimental field at Joydebpur, Gazipur. Considering the global organic market trend and the expansion of by a private organization and NGO's in the country, Bangladesh government adopted 'National Organic Agricultural Policy –2016,' but the action plan has not yet started.

1.3 Statement of the Problem

The demand for organic food products is increasing rapidly but the perception of purchasing and consuming of organic product has always been the concern around the globe. An understanding of perception and attitudinal behaviour towards purchasing of organic food products will be of great importance to producers (farmers) and retailer (business owner) to understand and fulfill the demand for the organic food products. From last many years several studies had been conducted on organic products, the major concern and need of the present study is to provide complete overview of consumer perceptions regarding organic food products.

Analyzing the issues on perspective, this study was specially designed to find out the answers on the following questions:

- What is the consumers' perception towards organic food?
- What are the characteristics of respondents with their perception towards organic food?
- What are the relationship between selected characteristics of the respondent their perception towards organic food?

1.4 Specific Objective of the Study

1. To describe the selected characteristics of the consumers in relation to their perception towards organic food;
2. To determine the extent of the consumers perception towards organic food; and
3. To explore the relationship between each of the selected characteristics of the consumers to their perception towards organic food.

1.5 Justification of the Study

Generally, in considering purchasing organic food products, consumers pass through five step of consumer decision making process which is need recognition, information search, evaluation of alternatives, purchase decision, and post purchase behavior (Armstrong and Kotler, 2010). The buyers usually will recognize a problem or need when they sense a difference between his or her actual state and some desired state. For example, a person who has been ill for some time, may realized a need and look or be motivated for a healthier choice of product such as an organic product. In this stage, they will search information related to the organic food products and this process is linked to the perception in term of selecting the information and assigned a meaning to them. Subsequently, this will lead to how they perceived the products. Perception is one of the psychological factors that can influence consumer purchase behavior, and it is the process by which an individual selects, organizes and interprets the information he or she receives from the environment (Sheth et al., 2004). What consumer thinks will affect their action, buying habits, and so forth, thus, perception has strategic implications for marketers because consumers build decisions based on what they perceive rather than on the basic of objective reality (Schiffman and Kanuk, 2010). After acquiring sufficient information, consumers will identify a set of determinant attributes to use to compare between others alternatives. For instance, a consumer may look for attributes such as cost, features and values before purchasing an organic product and use these product attributes or others factors to

evaluate the criteria. Hence, their perception and believe on the relative importance of organic food products attributes as compared to those of non-organic may influence them to purchase the organic products. In general, consumers during their decision-making process rely on different product attributes before deciding whether to buy or consume the organic food products. After purchasing the product, the consumer will be satisfied or dissatisfied with their purchase and will engage in post purchase behavior. The findings of this research will be useful to those who are concerned with planning, implementation and evaluation of agricultural, rural development and environmental programs. Various pesticides companies and firms also can make use of the findings of this research in determining policies and practices for the marketing of their products. The knowledge and skills gained by the researcher in conducting this research will enable him to conduct other similar studies in this field.

Considering the above findings, the researcher became interested to undertake a study to an analysis of consumers' perception of organic food: a survey study in some selected areas of Bangladesh. The investigator believes that the findings are likely to be helpful to develop at sound policy for the agricultural research and extension system of the country.

1.6 Scope and Importance of the Study

With rising concern of health issues and food safety, many consumers have turned their site to organic products. The increased consumers' interest in organic food has been attributed among others to the growing demand for food free from pesticides and chemical residues. Organic food promotes a balance of human, other living organisms and the nature. It also promotes no artificial preservatives and best maintain the originality of food. This prevents excess use harmful ingredients and thereby ensures health. This study attempted to gain knowledge about consumer attitude towards organic food product consumption and to see

whether there is any potential this might have for changing their behaviour. The rationale for carrying out this study is that consideration for the environment could come only from well-informed citizens who are aware of, and fully committed to their rights to a quality health and environment. Nevertheless, before any behaviour can be changed, it is necessary to evaluate the current state of consumers' awareness and knowledge. Therefore consumer's attitude, perception towards organic food products, willingness to pay for organic food product and intention to purchase organic food will be the main agenda of this study.

1.7 Limitation of the Study

The present study was undertaken with a view to have an understanding of the consumers' perception towards organic food. Considering the time, money and other necessary resources available to the researcher and also to make the study meaningful and manageable the researcher had to impose certain limitations as follows:

The study was confined to seven super shops of Narsingdi sadar upazilla and Dhaka district. The study was confined mainly to consumers' perception towards organic food.

i. Major information, facts and figures supplied by the respondents were applicable to the situation prevailing in the locality during the year 2022.
ii. Out of many characteristics of respondent only seven characteristics of respondent were selected for investigation in this study.
iii. For information about the study, the researcher was depended on the data furnished by the selected respondents during data collection.
iv. The respondents for data collection were kept limited within the heads of farm families.

1.8 Assumption of the Study

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

1. The respondents included in the sample for this study were competent enough to furnish proper responses to the queries included in the interview schedule.
2. The researcher who acted as interviewer was adjusted to social and environmental conditions of the study area. Hence, the data collected by her from the respondents were free from bias and the respondents furnished their opinion without hesitation.
3. The responses furnished by the respondents were valid and reliable.
4. Views and opinions furnished by the organic food users included in the sample were the representative views and opinions of the whole population of the study area.
5. The findings of the study might have general application to other parts of the country with similar personal, socio-economic and cultural condition.
6. The information sought by the researcher revealed the real situation to satisfy the objectives of the study.
7. The findings were useful in choosing the clients as well as for planning execution and evaluation the extension programme.

1.9 Definition of Terms

A researcher needs to know the meaning and contents of every term that he uses. It should clarify the issue as well as explain the fact to the investigator and readers. However, for clarity of understanding, a number of key concepts/terms frequently used throughout the study defined are interpreted as follows:

Age: Age of a respondent 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.

Education: Education referred to the development of desirable knowledge, skill, attitudes, etc. of an individual through the experiences of reading, writing, observation and related matters.

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

Extent of information received about organic food: It referred to an individual's consumers to or contact with different communication media, source and personalities being used for dissemination of new technologies.

Barriers to purchasing organic food: Barriers to purchasing organic food refers to different barriers faced by the consumers during purchasing organic food.

Organic food: Organic produce and other ingredients are grown without the use of pesticides, synthetic fertilizers, sewage sludge, genetically modified organisms, or ionizing radiation. Animals that produce meat, poultry, eggs and dairy products do not take antibiotics or growth hormones.

Consumer: An individual who buys products or services for personal use and not for manufacture or resale. A consumer is someone who can make the decision whether or not to purchase an item at the store and someone goes to store and purchases toy, shirt, beverage or anything else, they are making that decision as a consumer.

CHAPTER 2
REVIEW OF LITERATURE

An exertion was made in this Chapter to represent a brief review of related research information which gives a very clear direction to the researcher for selection research issue by identifying research gap. Review of literature forms a linkage between a past and present research works related to problem that helps an investigator to draw a satisfactory conclusion. However, no study was found systematic and directly related to the present study. Therefore, an attempt has been made to review and document closely related literatures in this Chapter available from books, journals, review papers, concept note, daily newspapers, magazines, etc. Relevant literatures have been reviewed and illustrated in different sections as stated below:

2.1 Reviews on Consumer Perceptions towards Organic Food

Sustainable products are always seen as the expensive option (Market & Opinion Research International Limited (MORI, 2003).

Being environmentally friendly is expressed to be accessible only to the middle classes. The consumers want to have a choice among the sustainable products rather than choosing products that are sustainable and those that are not. Consumers combine information about product attributes and consequences to evaluate a product and make their choices. They rely on their felt involvement which is influenced by their experience. The importance placed on each parameter is based on the consumers' priorities and values. Experience develops personal relevance, importance, interest which together derives the motivational state (Shroeder, 2003).

Kutnohorská and Tomšík (2013) this paper presents the results of a quantitative survey in the Czech organic food market. By using the factor analysis, it showed that the consumer perception of the health benefits of organic food can be viewed from several different angles. There were found three factors that explain 58.42% of variability, which are, based on their relationship with the original items, interpreted as the "knowledge and responsibility", "being aware, but lax" and "health is important, but not related to food". The first factor contains enough knowledge related to the health care, the conviction of the importance of food choice regarding health and the active interest and effort to do something for one's health. The second factor contains enough knowledge related to health care, but is lacking the interest to apply the knowledge and to do something for one's health, and the third factor contains the conviction that health is an important asset, but the perception of the connection between one's health and food is absent.

Demographic variables as well as lifestyle and environmental attitudes define the organic consumer profile. Regular consumers of organic food tend to be educated, affluent and of higher social class (Padel and Foster, 2005 and Stobelaar et al., 2006).

Awareness of food hazards and knowledge of food hazards were higher among females and individuals with more education and income (McIntosh et al, 1994; Torjusen et al., 2001 and Stobelaar et al., 2006).

Lockie et al. (2002) also found strong correlation between increasing consumption of organic food and levels of formal education. Organic consumers are willing to pay approximately 10% premium for organic food with an average of 9.5% by women and 11.4% by men (Urena et al., 2008). Regular consumers would pay a slightly higher premium around 15%, an average of 12/6% by women and 18% by men (Urena et al., 2008).

Generally, organic foods do not use pesticides or synthetic fertilizers. Presumably organic food contains fewer chemical residues and veterinary drugs compared to conventional food. Environmental contaminants however are likely to be found in food of both productions. Organic food contains only onethird of pesticides that conventional food does (Baker et al., 2002). It can be said that lower exposure translates into lower risk. In conventional food, almost all produce will have pesticide residue below the statutory maximum limits. Consumers express anxiety on agrochemicals, hormones and medicine in animal production and GMO and artificial additives in fruits and vegetables (Naspetti and Zanoli, 2006).

With respect to absence of pesticides and fertilizers in organic production, organic fruits and vegetables have more biochemical energy to synthesise beneficial secondary plant metabolites such as polyphenolic antioxidants as well as naturally occurring toxins (Whitehead and Nicholson, 2001).

Nutritional content is a quality aspect that consumers link to personal health. High content of vitamins, more nourishing meals and a healthy diet were reported as reasons for purchasing organic food by 4%-7% of regular organic food consumers (Naspetti and Zanoli, 2006).

Consumers who are concerned about natural foods, the sensory and emotional appeal of food and more likely to engage in green consumption practices are more likely to have greater consumption of organic food (Lockie et al., 2004).

Women were identified to have higher health consciousness and were seen as innovators for change towards healthier diets with their important roles in shaping a family diet (Fagerli and Wandel, 1999).

They are also more health-conscious about the implications of chemical residues and preservatives (Yiridoe et al., 2005).

Inconsistent findings were recorded on the comparison of sensory qualities of organic food to conventional food (Bourn and Prescott, 2002). Consumers described that organic orange juice tasted better than conventional orange juice and no difference was described between organic and conventional milk (Fillion and Arazi, 2002).

In recent years, organic food has been attaining a growing consumer demand. A number of reasons have driven this organic food market trend. The British consumers perceived organic food as a means of achieving individual and social values for themselves and their families. The most significant motive for choosing organic food is the health factor followed by the environmental and animal welfare factors. Some consumers buy organic food as they perceive a difference in food quality. Few specific parameters expressed are sensory parameters, followed by safety and nutrients (Bordeleau et al., 2002).

Animals' biological function and performance improve slightly when they are fed with organically produced feed (Magkos et al., 2003). The interpretation of this finding must be made with caution and any extrapolation to human should consider metabolic and physiological difference between animals and humans.

Opposing attitude and value towards GM food implies a positive view on the organic, especially when they are mentioned together. GM food is seen as manipulative and altering the nature while organic food is seen to preserve the 'naturalness' of the environment (Dreezen et al., 2005).

Composting food wastes and consumption of locally produced food are among the most commonly food-related environmental behaviour specified by consumers compared to consumption of organic food. Awareness on the organic food consumption needs to be raised and the barriers need to be overcome. The link between health and environmental benefits should be strengthened to increase interest among consumers (Magnusson et al., 2003).

2.2 Consumer Perception of Organic Food Quality

It is apparent that most consumers emphasised traditional quality aspects such as freshness and taste in their food choice (Torjusen et al., 2001; Dimara et al., 2003).

In fruits and vegetables, for example, freshness is generally the important criterion to look for. Consumers in Thailand were more likely to buy organic fruits and vegetables if they meet the criterion (Roitner-Schobesberger et al., 2008).

Quality, however is not a well-defined attribute but comprises many other properties such as sensory attributes (appearance, texture, taste and aroma), nutritive values, safety determinants, chemical constituents, mechanical properties, functional properties and defects (Abbott, 1999; Mizrach, 2007).

Sensory analysis becomes primary for consumers in determining their choice followed by their awareness of invisible qualities such as microbial and toxicological safety and nutritional value (Thierman, 2000).

Taste will continue to become a prime consideration in consumer food choice especially after the experience of consuming the food (Fillion and Arazi, 2002).

Although sensory evaluations on whether organic food tastes better than conventional food have yielded inconsistent results (McEahern and McClean,

2002), many buyers believe that organic food tastes better (Roitner-Schobesberger et al., 2008). It was suggested that it is necessary to treat each product type separately rather than putting a broad claim on certain product.

Woese et al. (1997) examined more than 150 comparative studies on foods including cereals, potatoes, vegetables, fruit, wine, beer, bread, milk, eggs as well as food products made from them. The studies investigated the concentrations of pesticides residues and environmental contaminants as well as sensory tests and feeding experiments in animals. It was found that conventional food which are fertilised with minerals seems to have higher nitrate content that organically fertilised vegetables and potatoes. In relation to pesticides, lower residue level was found in vegetables and fruit from organic production.

A six-European countries consumer attitude survey on the GM food revealed that one-third of the sixcountry population (France, Germany, Great Britain, Italy, Poland and Portugal) would not choose any form of GM foods (Almeida et al, 2006). They pointed out that they are willing to accept GM foods only if these food provided 'health benefits' and if there were food production benefits. Other reasons to accept GM foods were also related to cost, taste, labelling and nutritional improvements. It can be said that GM food acceptance will be greater if they provide either health or other welfare benefits.

When GM food and organic food are compared, studies have found that consumers have very positive attitude towards organic food (Magnusson 2004 and Arvola et al., 2008) while they are quite negative to GM foods (Dreezens et al, 2005).

Consumers in Spain described GM food with attributes such as no benefit, tampering with nature and high risk while organic foods with attributes such as

serving good purpose, necessary and healthy (Koivisto-Hursti and Magnusson, 2003). Many other European consumers' studies also established negative attitudes towards genetic modification in food products (Frewer et al., 1995; Grunert et al., 2000; Gifford and Bernard, 2005). However, public attitudes are likely to change dramatically when the application is associated to a specific goal (Heijs et al., 1993).

Negative framing on certain type of production (i.e. conventional farming) increases influence on the alternative technology (i.e. organic farming) but positive framing was found to be more effective (Gifford and Bernard, 2005). Therefore, a message about the benefits of organic farming may have more meaning to consumers. Consumers tend to accept a somewhat risky technology if the application is seen to be useful to mankind and the environment. The same perception applies to organic food. Considerations about health and about the way the product is produced with regard to animal welfare and environmental care characterize the consumer perceptions on the health and safety aspect which could be another aspect of food quality.

2.3 Conceptual Framework of the Study

This study is concerned with an analysis of consumers' perception towards organic food. Thus, the perception towards organic food was the main focus of the study and seven selected characteristics of the respondents were considered as those might have relationship with perception towards organic food. Perception towards organic food may be influenced and affected through interacting forces of many independent factors. It is not possible to deal with all the factors in a single study. Therefore, it was necessary to limit the factors, which included age, education, annual family income, source of weekly food shopping, extent of information received about organic food, availability of organic food and barriers

to purchasing organic food. The conceptual framework of the study has been presented in Fig. 2.1.

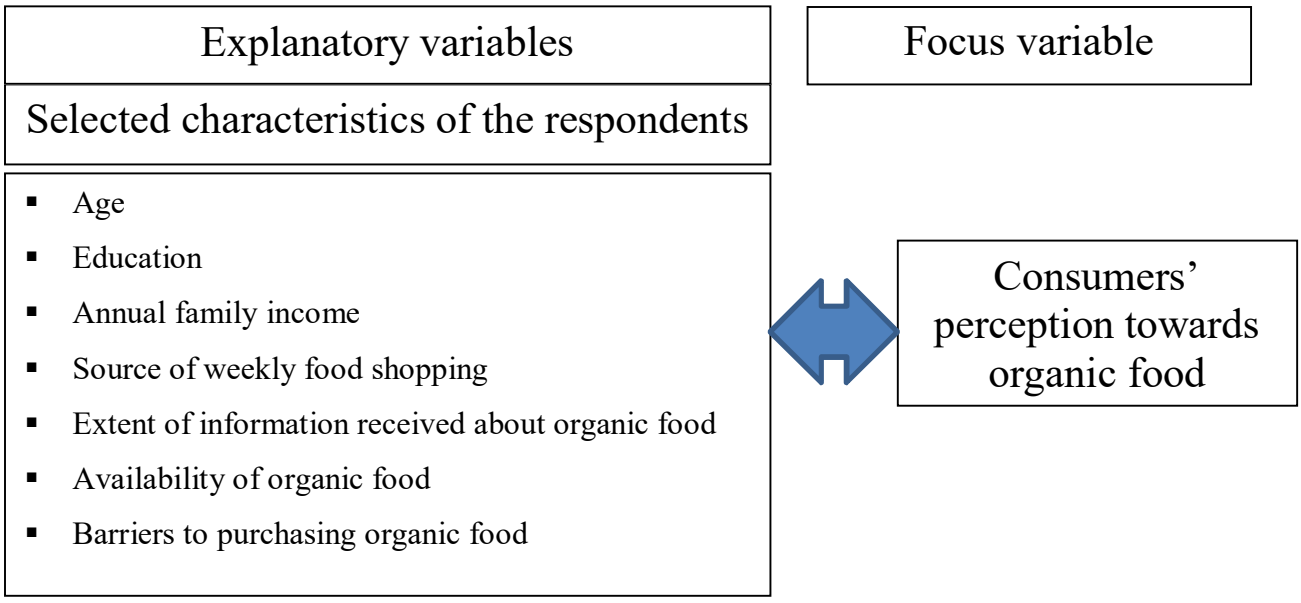

Figure 2.1 Conceptual framework of the study

CHAPTER III
METHODOLOGY

Methodology enables the researcher to collect valid information. It is impossible to conduct research work smoothly without proper methodology 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 methodology was followed in conducting this research work has been presented in this chapter.

3.1 Locale of the Study

The study was conducted at Narsingdi and Dhaka district purposively. There are many super shops in Narsingdi and Dhaka district and out of these seven super shops were selected randomly as the locale of the study. In one sense, one can call it a grocery store with a wide variety of food and household merchandise. It is also self-service store and one of the popular businesses in the world. It is actually a store dealing with fruits, vegetables and daily necessary grocery items. It has also prepared food like candy, snacks and bread. There are lots of Mini supermarket are growing in the city areas. It is grocery shop in the sense that it sells a wide range of food and home items.

In the contemporary world, as well as in Bangladesh, the practice of daily shopping for everyday necessities has altered. People have opted to go to the market for necessary items once a week or even once a month in the interim. As a result, a massive superstore has been developed in the Western world. Maps of Narsingdi and Dhaka district are presented in Figure 3.1 and 3.2.

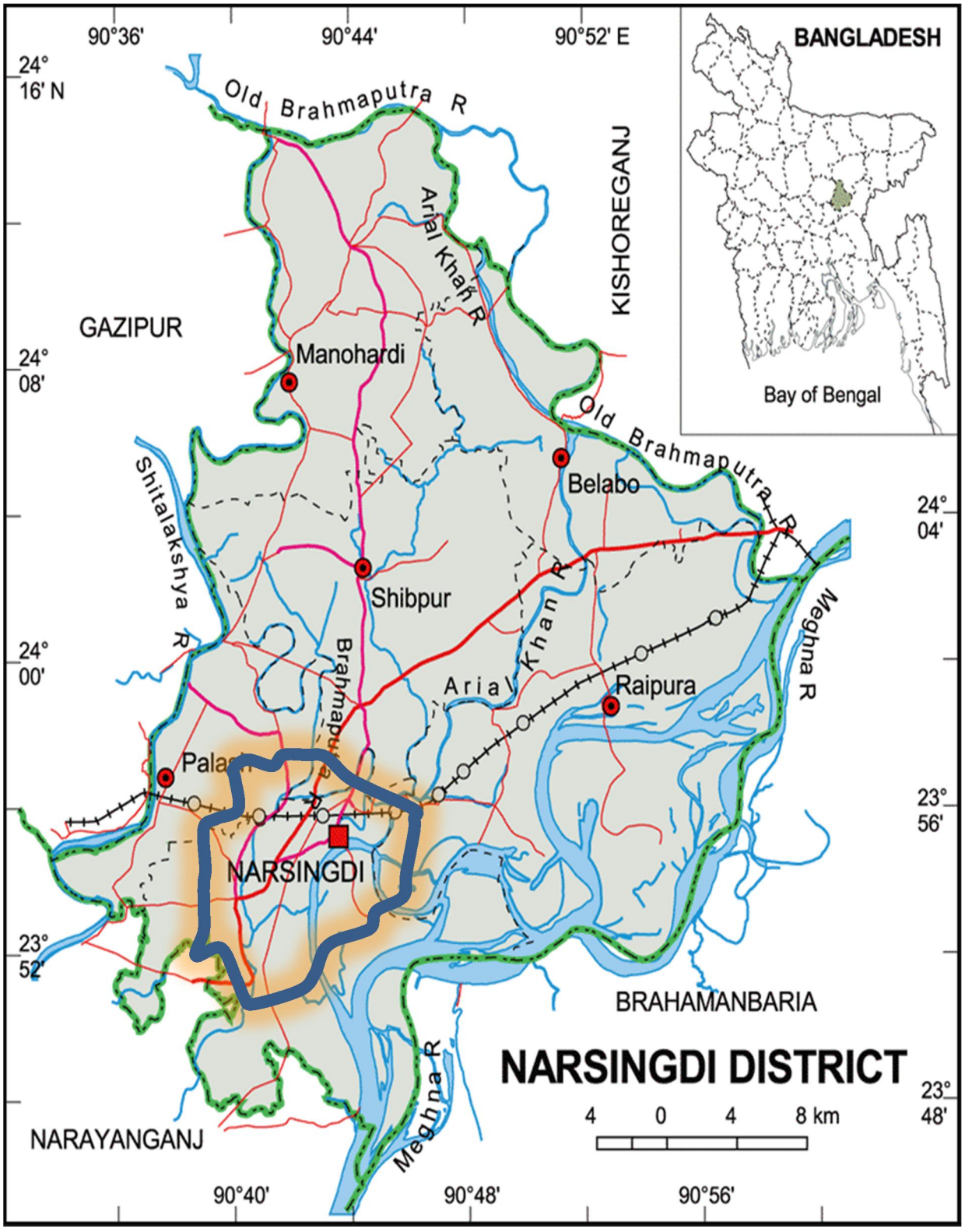

Figure 3.1: A map of Narsingdi district showing study area

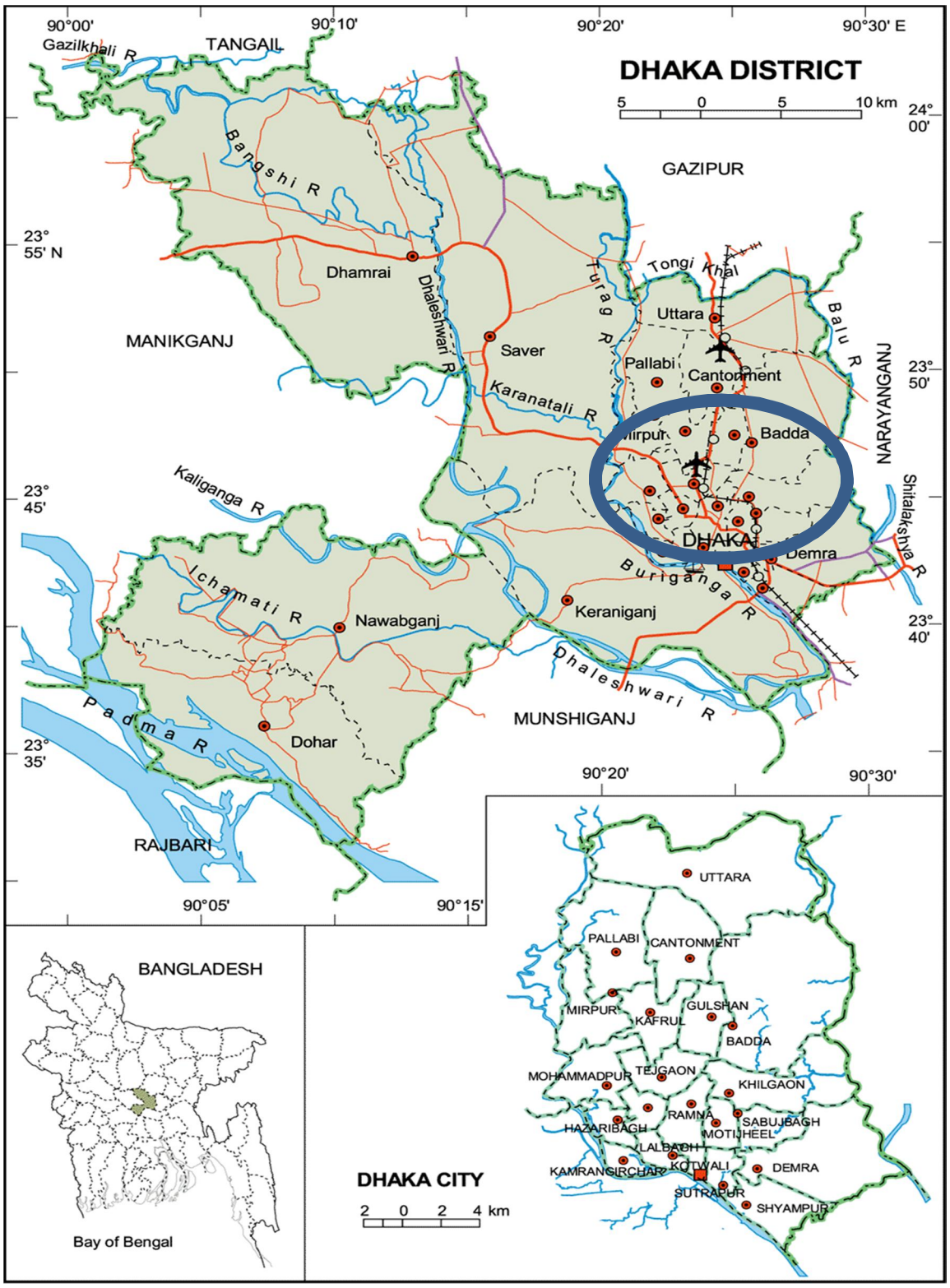

Figure 3.2: A map of Dhaka district showing the study area

3.2 Distribution of the Population, Sample size

Seven separate lists of super shops of the selected two districts were prepared by the researcher herself. The list comprised a total of 707 respondents from which 113 consumers from Oxford super shop, 90 consumers from Notun bazar and 105 consumers from A to Z super market under of Narsingdi and 95 consumers from CSD, 102 consumers from Shwapno, 103 consumers from Kochukhet bazar and 99 consumers from Agora super shop under the Dhaka district which constituted the population of the study. The total respondents were 707, among of those respondents comprised of 105 (15% of total population) respondents was the sample of the study. The distribution of the population sample and number of respondent are given in Table 3.1.

Table 3.1 Distribution of the consumers according to population and sample size

Name of districts	Name of super shop	Population	Sample size (15% of total population)	Reserved lists
Narsingdi	Oxford super shop	113	16	2
	Notun bazar	90	14	2
	A to Z super market	105	15	2
Dhaka	CSD	95	15	2
	Shwapno	102	14	2
	Kochukhet bazar	103	16	2
	Agora super shop	99	15	2
Total		**707**	**105**	**14**

3.3 Measurement of Variables

The variable is a characteristic, which can assume varying or different values in successive individual cases. A research work usually contains at least two important variables viz. independent and dependent variables. 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. Following this conception, the researcher reviewed literature to widen this understanding about the natures and scopes of the variables relevant to this research. At last she had selected 7 independent variables and one dependent variable. The independent variables were: age, education, annual family income, source of weekly food shopping, extent of information received about organic food, availability of organic food and barriers to purchasing organic food. The dependent variable of this study was the "an analysis of consumers' perception toward organic food: A survey study in some selected areas of Bangladesh". The methods and procedures in measuring the variables of this study are presented below:

3.4 Measurement of Independent Variables

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

3.4.1 Age

Age of respondents was measured by the period of time from their birth to the time of conducting interview and it was measured in terms of complete years on the basis of their response. A score of one (1) was assigned for each year age. This variable appears in item number one (1) in the interview schedule as presented in Appendix- A.

3.4.2 Education

Education was measured by assigning score against each successful year of schooling by a respondent. One score was given for passing each level in an educational institution. For example, if a respondent passed the final examination of class five or equivalent examination, his/her education score has given five (5). Each respondent of can't read & write has given a score of zero (0). A person not

knowing reading or writing but being able to sign only has given a score of 0.5. If a respondent did not go to school but took non-formal education, his/her educational status was determined as the equivalent to a formal school student. This variable appears in item number two (2) in the interview schedule as presented in Appendix- A.

3.4.3 Annual family income

Annual family income of a respondent referred to the total earning by her/him and other members of her/his family from agriculture, livestock, poultry, fisheries, and other sources (service, business, daily wages by working, etc.) during a year. It was expressed in thousand Taka. In measuring this variable, total earning of an individual respondent was converted into score. A score of one (01) was given for every one (01) thousand ('000') taka.

3.4.4 Source of weekly food shopping

Source of weekly food shopping of a respondent was measured by the respondent's extent of source of weekly food shopping. The degrees source of weekly food shopping was 'always', 'very often', 'sometimes', 'rarely', 'never' against suitable scores are assigned as 4, 3, 2, 1 and 0 respectively. If the number of source of weekly food shopping are six (6), then an individual respondent can obtain highest score 24 and minimum score 0 (zero).

3.4.5 Extent of information received about organic food

Extent of information about organic food of a respondent was measured by a respondent's extent of information received about organic food. The degrees extent of information received about organic food was 'always', 'very often', 'sometimes', 'rarely', 'never' against suitable scores are assigned as 4, 3, 2, 1 and 0 respectively. If the extent of information received about organic food are ten (10), then an individual respondent can obtain highest score 40 and minimum

score 0 (zero).

3.4.6 Availability of organic food

Availability of organic food of a respondent was measured by a respondent's extent of availability of organic food channels used. The degrees of availability was 'Always', 'very often', 'sometimes', 'rarely', 'never' against suitable scores are assigned as 4, 3, 2, 1 and 0 respectively. If the number of availability of organic food channels are four (4), then an individual respondent can obtain highest score 16 and minimum score 0 (zero).

3.4.7 Barriers to purchasing organic food

Barriers to purchasing organic food, after thorough consultation with relevant experts, respondents and relevant a variable literature, 10 barriers were selected related to purchasing organic food for the study. A list of 10 probable barriers that respondents could face in different aspects were listed and asked to indicate the extent of their barriers to purchasing organic food. It was measured by using a five point rating scale. For each barrier score of 4, 3, 2, 1 and 0 were assigned to indicate extent of barriers as very high, high, medium, low and not at all, respectively. The barrier score was computed for each respondent by adding his/her scores for all 10 barriers. The possible range of barrier scores thus could be 0 and 40. A total score of 40 indicated highest barriers to purchasing organic food, while a score of 0 indicated no barriers to purchasing organic food.

3.5 Measurement of Dependent Variable

An analysis of consumers' perception toward organic food was the main variable of the study. Ten statements expressing consumers' perception toward organic food were constructed. Scoring was done by assigning 4, 3, 2, 1 and 0 scores to the four alternative responses as strongly agreed", "agreed", "undecided", "disagreed",

and "strongly disagreed", respectively in case of a statement. However, consumers' perception of organic food was obtained by summing up his/her scores for all the ten statements in item no. 8 in the interview schedule. Consumers' perception toward organic food score, thus, obtained for a respondent could range from zero (0) to 40, where zero (0) indicated no perception and 40, indicated high perception.

3.6 Statement of the Hypothesis

According to Kerlinger (1973), a hypothesis is a conjectural statement of the relation between two or more variables. Hypotheses are always in declarative sentence form and they relate either generally or specifically variables to sentence form and they relate either generally or specifically variables to variables. Hypothesis may be broadly divided into two categories, namely research hypothesis and null hypothesis.

3.6.1 Research hypothesis

The following research hypothesis was put forward to know the relationship between selected characteristics of the consumers' on their perception toward organic food.

Hypothesis: "Each of the seven selected characteristics of the consumers' has relationship to their perception toward organic food."

3.6.2 Null hypothesis

A null hypothesis states that there is no relationship of independent variables to the dependent variable. The following null hypothesis was undertaken for the present study:

H_0: There is no relationship of the selected characteristics of consumers' with their perception toward organic food.

If a null hypothesis is rejected on the basis of statistical tests, it is assumed, that there is a relationship of the concerned characteristics of the consumers' perception toward organic food.

3.7 Instrument for Data Collection

In order to collect reliable and valid information from the respondents, an interview schedule was prepared for collection of data from respondents keeping the objectives of the study in mind. The question and statements contained in the schedule were simple, direct and easily understandable by the farmers. Simple and direct question, different scales, closed and open form statements and questions were included in the interview schedule to obtain necessary information. The draft interview schedule was prepared in accordance with the objective of the study. The interview schedule was pre-tested with 10 respondents in the study area during 05 January to 10 January, 2022.

The draft interview schedule was pretested in actual field situation before finalizing it for collection of data. The pre-test was helpful to identify inappropriate questions and statements in the draft schedule. Necessary addition, alternation and adjustments were made in the schedule on the basis of the experience of the pretest. The interview schedule was then printed in its final form. An English version of the interview schedule has been shown in Appendix-A.

3.8 Data Collection

Data were collected personally by the researcher herself through personal interview schedule from the sampled super shops. The researcher also discussed

the objectives of the present study with the respondents and above mentioned officers and requested them to provide actual information. A rapport was established with the people so that they feel easy to answer the questions. The researcher took all possible care to establish rapport with the respondents so that they would not feel any indecision while starting the interview. Very good cooperation was obtained from the super shop workers. No serious difficulty was faced by the researcher during the collection of data. The interviews were made individually in the places of respondents. Questions were asked in direct manner so that the respondents could easily understand the questions. Whenever a respondent faced difficulty in understanding any questions, care was taken to explain the same clearly with a view to enabling him to answer it properly.

Before going to the respondents' super shops for interviewing they were informed verbally to ensure their availability at super shops as per schedule date and time. In the case of failure to collect information from the respondents due to their other business, a revisit was made with prior to appointments. Data were collected during 15th February, 2022 to 15th March, 2022.

3.9 Compilation of Data

After completion of survey, data recorded in the interview schedules were coded, compiled, tabulated and analyzed in accordance with the objectives of the study. In this process, all the responses in the interview schedule were given numerically coded values. Local units were converted into standard units and qualitative data were converted into quantitative ones by means of suitable scoring whenever necessary. All the collected data were checked and cross-checked before transplanting to the master sheets. To facilitate tabulation, the collected data were properly coded and transferred from interview schedule to a master sheet. Tabulation and cross tabulation was done on the basis of categorization developed by the researcher.

3.10 Categorization of Data

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 on the social system. The procedures have been discussed while describing the variable in the sub-sequent sections of the next chapter.

3.11 Statistical Analysis

Data collected from the respondents were analyzed and interpreted in accordance with the objectives of the study. The analysis of data was performed using statistical treatment with SPSS (Statistical Package for Social Sciences) computer program, version 24. Statistical measures as a number, range, mean, standard deviation were used in describing the variables whenever applicable. Pearson's Product Moment Correlation was used to determine the relationship of the consumers' perception toward organic food based on selected characteristics.

Throughout the study, five (0.05) percent and one (0.01) percent level of significance were used as the basis for rejecting any null hypothesis. If the computed value of (B) was equal to or greater than the designated level of significance (p), the null hypothesis was rejected and it was concluded that there was a significant relationship between the concerned variable. Whenever the computed value of (B) was found to be smaller at the designated level of significance (p), the null hypothesis could not be rejected. It was concluded that there was no relationship of the concerned variables.

CHAPTER IV
RESULTS AND DISCUSSION

In this Chapter the findings of the study and its interpretation are presented in three sections according to the objectives of the study. The first section deals with the selected characteristics of the consumers, while the second section deals with the extent of the consumers perception towards organic food and the third section deals with the relationship between selected characteristics to their perception towards organic food.

4.1 Selected Characteristics of the Consumers

In this section the results of the selected characteristics have been discussed. The salient feature of the respondents with their seven selected characteristics has been presented in Table 4.1.

Table 4.1 The salient features of the selected characteristics of the respondents

Characteristics	Measuring unit	Rang		Mean	SD
		possible	observed		
Age	Years	-	18-55	31.68	8.11
Education	Year of schooling	-	5-18	14.18	2.760
Annual family income	('000' tk)	-	140-1700	575.00	258.62
Source of weekly food shopping	Score	0-20	6-19	12.99	2.47
Sources of information about organic food	Score	0-40	9-33	22.99	4.64
Availability of organic food	Score	0-16	6-16	10.14	1.89
Barriers to purchasing organic food	Score	0-40	8-32	18.22	4.38

4.1.1 Age

The age score of the consumers ranged from 18 to 55 with an average of 31.68 and a standard deviation of 8.11. Considering the recorded age consumers were

classified into three categories namely young, middle and old aged following (MoYS, 2012). The distribution of the consumers in accordance of their age is presented in Table 4.2.

Table 4.2 Distribution of the consumers according to their age

Categories (years)	Consumers		Mean	SD
	Number	Percent		
Young aged (up to 35)	75	71.43	31.68	8.11
Middle aged (36-50)	28	26.67		
Old aged (above 50)	2	1.96		
Total	**105**	**100**		

Table 4.2 indicates that the majority (71.43 percent) of the respondents were the young-aged category while 26.67 percent and 1.96 percent were found middle and old categories respectively. Data also indicates that the middle and young aged category constitute almost 98.04 percent of total consumers.

4.1.2 Education

Education of the consumers ranged from 5 to 18 years of schooling having an average of 14.18 years with a standard deviation of 2.76. On the basis of their education, the respondents were classified into four categories as shown in Table 4.3

Table 4.3 Distribution of the consumers according to their education

Categories	Consumers		Mean	SD
	Number	Percent		
Primary education (1-5 class)	1	0.95	14.18	2.76
Secondary education (6-10 class)	6	5.71		
Higher Secondary level (11-12)	35	33.33		
Above Higher secondary level (above 12)	63	60.00		
Total	**103**	**100**		

Data contained in Table 4.3 indicates the majority 60.00 percent of the consumers were above higher secondary level of education. It was found that 0.95 percent was primary level of education, 33.33 percent were higher secondary level of education and 5.71 percent were secondary level of education.

4.1.3 Annual family income

The annual family income of the consumers ranged from Tk. 140 thousand to Tk. 1700 thousand with an average of Tk. 575.00 thousand and standard deviation of 258.62 thousand. On the basis of annual income scores of the consumers, the consumers were classified into three categories (Mean ± Standard Deviation) namely small, medium and high number of earning members at family. The distribution of the consumers according to their annual family income is given in Table 4.4.

Table 4.4 Distribution of the consumers according to their annual family income

Categories	Consumers		Mean	S D
	Number	Percent		
Low income (up to 317)	4	3.81	575.00	258.62
Medium income (318-833)	89	84.76		
High income (above 833)	12	11.43		
Total	105	100		

From Table 4.4 it was observed that the highest portion (84.76 percent) of the consumers had medium annual family income compared to 3.81 percent having low and 11.43 percent had high annual family income. Overwhelming majority (88.57 percent) consumers have low to medium annual family income.

4.1.4 Source of weekly food shopping

The observed source of weekly food shopping of the consumers ranged from 6-19, the mean being 12.99 and standard deviation of 2.47. According to their observed ranged of source of weekly food shopping scores; the consumers were classified into three categories (Mean±SD) as shown in Table 4.5.

Table 4.5 Distribution of the consumers according to their source of weekly food shopping

Categories	Consumers		Mean	SD
	Number	Percent		
Less food shopping (upto 11)	30	28.57	12.99	2.47
Medium food shopping (12-15)	59	56.19		
Large food shopping (above 15)	16	15.24		
Total	**105**	**100**		

Data presented in Table 4.5 indicated that 56.19 percent of the consumers had medium source of weekly food shopping compared to having 28.57 percent less and 15.24 percent high source of weekly food shopping. Findings again revealed that almost all (84.76 percent) of the consumers had less to medium source of weekly food shopping.

4.1.5 Extent of information received about organic food

The score of extent of information received about organic food of the consumers ranged from 9 to 33, the mean being 22.99 and standard deviation of 4.64. Based on observed range, the consumers were classified into three categories as shown in Table 4.6.

Table 4.6 Distribution of the consumers according to their information about organic food

Categories (score)	Consumers		Mean	SD
	Number	Percent		
Low sources (upto 18)	15	14.29	22.99	4.64
Medium sources (19-27)	73	69.52		
High sources (above 27)	17	16.19		
Total	**105**	**100**		

Data contained in Table 4.6 indicates that 69.52 percent of the consumers had medium extent of information about organic food; while 14.29 percent of the consumer's had less extent of information about organic food and 16.19 percent had high sources of information about organic food**.** Thus, about 85.71% of consumers had medium to high extent of information about organic food.

4.1.6 Availability of organic food

The observed availability of organic food scores of the consumers ranged from 6-16 against the possible range of 0 to 16, the mean being 10.14 and standard deviation of 1.89. According to their observed ranged of availability of organic food scores, the consumers were classified into three categories (Mean±SD) as shown in Table 4.7.

Table 4.7 Distribution of the consumers according to availability of organic food

Categories	Consumers		Mean	SD
	Number	Percent		
Less availability (upto 8)	23	21.91	10.14	1.89
Medium availability (9-12)	72	68.57		
High availability (above 12)	10	9.52		
Total	**105**	**100**		

Data presented in Table 4.7 indicated that 68.57 percent of the consumers had medium availability of organic food compared to having 21.91 percent less and 9.52 percent had high availability of organic food. Findings again revealed that almost all (90.48 percent) of the consumers had less to medium availability of organic food.

4.1.7 Barriers to purchasing organic food

The observed barriers to purchasing organic food scores of the consumers ranged from 8-32 against the possible range of 0 to 40, the mean being 18.22 and standard deviation of 4.38. According to their observed ranged of barriers to purchasing organic food scores, the consumers were classified into three categories (Mean±SD) as shown in Table 4.8.

Table 4.8 Distribution of the consumers according to their barriers to purchasing organic food

Categories	Consumers		Mean	SD
	Number	Percent		
Low barriers (upto 14)	19	18.09	18.22	4.38
Medium barriers (15-22)	71	67.62		
High barriers (above 22)	15	14.29		
Total	**105**	**100**		

Data presented in Table 4.8 indicated that 68.57 percent of the consumers had medium barriers to purchasing organic food compared to having 18.09 percent low and 14.29 percent had high barriers to purchasing organic food. Findings again revealed that almost all (85.71 percent) of the consumers had low to medium barriers to purchasing organic food.

4.2 Consumers' Perception towards Organic Food

The observed consumers' perception towards organic food scores of the consumers ranged from 11-32 against the possible range of 0 to 40, the mean being 17.56 and standard deviation of 2.85. Consumers' perception towards organic food was categorized into three categories: favorable perception (<20), neutral perception (20) and unfavorable perception (above 19) considering Mean ±1sd. According to their observed ranged of consumers' perception towards organic food scores, the respondents were classified into three categories (Mean±SD) as shown in Table 4.9.

Table 4.9 Distribution of the respondents according to their perception

Categories	Consumers		Mean	SD
	Number	Percent		
Favorable perception (<20)	83	79.05	17.56	2.85
Neutral perception (20)	7	6.67		
Unfavorable perception (>20)	15	14.28		
Total	**105**	**100**		

Similar result was observed Kabir et al. (2018) where highest respondents were favorable perception. Data presented in Table 4.9 indicated that the majority 79.05 percent of the respondents had favorable perception compared to having 14.28 percent unfavorable and only 6.67 percent had neutral perception. Findings again revealed that almost all (84.72 percent) of the respondents had favorable to neutral perception toward organic food.

4.3 The relationship between Selected Characteristics of the Respondents on their Perception towards Organic Food

Coefficient of correlation was computed in order to explore the relationship between the selected characteristics of the consumers and their perception towards organic food. The selected characteristics constituted the explanatory variables and perception toward organic food constituted the focus variable.

In order to determine the relationship between 7 selected characteristics (explanatory variables) of the consumers viz. age, education, annual family income, source of weekly food shopping, extent of information received about organic food, availability of organic food and barriers to purchasing organic food and the focus variable i.e., perception toward organic food Pearson's Product Moment Correlation was used. Co-efficient of correlation (r) has been used to test the null hypothesis concerning the relationship between the variables. To reject or accept the null hypothesis at 0.05 and 0.01 level of probability was used. A statistically significant and non- significant relationship was observed when the computed value of "r" was greater or smaller than the tabulated value, respectively.

From this correlation test, it was found that education, source of weekly food shopping, extent of information received about organic food, availability of

organic food and barriers to purchasing organic food of the consumers had positive significant relationship with their perception toward organic food. Besides these two (2) characteristics, (age and annual family income) had no significant relationship with their perception toward organic food. Interco-relation among all the variables may be seen in Appendix-B.

The summery of the results of the Co-efficient of Correlation indicating the relationship between the selected characteristics of the consumers and their perception towards organic food are shown in Table 4.10.

Table 4.10 Pearson's product moment co-efficient of the correlation showing relationship between focus and explanatory variables

Focus variable	Explanatory variables	Tabulated value		Value of coefficient correlation with 103 df
		0.05	0.01	
Perception towards Organic Food	Age	0.192	0.251	0.038^{NS}
	Education			0.284*
	Annual family income			-0.114^{NS}
	Source of weekly food shopping			0.197*
	Extent of information received about organic food			0.378**
	Availability of organic food			0.249*
	Barriers to purchasing organic food			-0.346**

** Significant at p<0.01; *Significant at p<0.05

4.3.1 Age and perception towards organic food

The computed value of "r" (0.038) was smaller than that of the tabulated value (r=0.192) with 103 degrees of freedom at 0.05 level of probability as shown in Table 4.10. Hence, the concerned null hypothesis was accepted and it was concluded that age of the consumers had no significant relationship with their perception towards organic food.

4.4.2 Relationship between education of the consumers and their perception towards organic food

The coefficient of correlation between level of education and perception towards organic food is presented in Table 4.10. The coefficient of correlation between the concerned variables was found to be 0.284. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables of the study:

a. The observed value between the concerned variables "r"" (0.284) was found to be greater than the tabulated value (r = 0.192) with 103 degrees of freedom at 0.05 level of probability.
b. The null hypothesis could be rejected.
c. The relationship between the concerned variables was statistically significant at 0.05 level of probability.
d. The relationship showed a positive trend between the concerned variables.

Based on the above findings it was concluded that level of education had significant positive relationships with the perception towards organic food. This represents that level of education of the consumers was an important factor in perception towards organic food and with the increases of education perception towards organic food increases.

4.3.3 Relationship between annual family income and perception towards organic food

The computed value of "r" (-0.114) was smaller than that of the tabulated value (r=0.192) with 103 degrees of freedom at 0.05 level of probability as shown in Table 4.10. Hence, the concerned null hypothesis was accepted and it was concluded that annual family income had no significant relationship with their perception towards organic food.

4.3.4 Relationship between source of weekly food shopping of the consumers and their perception towards organic food

The coefficient of correlation between source of weekly food shopping and perception towards organic food is presented in Table 4.10. The coefficient of correlation between the concerned variables was found 0.197. The following observations were made on the basis of the value of correlation coefficient between the two concerned variables of the study:

a. The observed value between the concerned variables "r" (0.197) was found to be greater than the tabulated value (r = 0.192) with 103 degrees of freedom at 0.05 level of probability.
b. The null hypothesis could be rejected.
c. The relationship between the concerned variables was statistically significant at 0.05 level of probability.
d. The relationship showed a positive trend between the concerned variables.

Based on the above findings it was concluded that source of weekly food shopping had significant negative relationship with the perception towards organic food. This represents that source of weekly food shopping of the consumers was an important factor in perception and with the increases of source of weekly food shopping perception towards organic food also increases.

4.3.5 Relationship between extent of information received about organic food of consumers and their perception towards organic food

The coefficient of correlation between extent of information received about organic food and perception towards organic food is presented in Table 4.10. The coefficient of correlation between the concerned variables was found (0.378). The following observations were made on the basis of the value of correlation coefficient between the two concerned variables of the study:

a. The observed value between the concerned variables "r" (0.378) was found to be greater than the tabulated value (r = 0.251) with 103 degrees of freedom at 0.01 level of probability.

b. The null hypothesis could be rejected.

c. The relationship between the concerned variables was statistically significant at 0.01 level of probability.

d. The relationship showed a positive trend between the concerned variables.

Based on the above findings it was concluded that extent of information received about organic food had significant negative relationships with the perception towards organic food. This represents that extent of information received about organic food of the consumers was an important factor in perception towards organic food and with the increases of extent of information received about organic food on perception towards organic food increases.

4.3.6 Relationship between availability of organic food of consumers and their perception towards organic food

The coefficient of correlation between availability of organic food of consumers and their perception towards organic food is presented in Table 4.10. The coefficient of correlation between the concerned variables was found (0.249). The following observations were made on the basis of the value of correlation coefficient between the two concerned variables of the study:

a. The observed value between the concerned variables "r" (0.249) was found to be greater than the tabulated value (r = 0.192) with 103 degrees of freedom at 0.05 level of probability.

b. The null hypothesis could be rejected.

c. The relationship between the concerned variables was statistically significant at 0.05 level of probability.

d. The relationship showed a positive trend between the concerned variables.

Based on the above findings it was concluded that availability of organic food of consumers had significant positive relationships with their extent of perception towards organic food. This represents that availability of organic food of consumers was an important factor in perception towards organic food and with the increase of availability of organic food of consumers, the extent of perception towards organic food also increases.

4.3.7 Relationship between barriers to purchasing organic food of the consumers and their perception towards organic food

The coefficient of correlation between barriers to purchasing organic food and perception towards organic food is presented in Table 4.10. The coefficient of correlation between the concerned variables was found (-0.346). The following observations were made on the basis of the value of correlation coefficient between the two concerned variables of the study:

a. The observed value between the concerned variables "r" (-0.346) was found to be greater than the tabulated value (r = 0.251) with 103 degrees of freedom at 0.01 level of probability.
b. The null hypothesis could be rejected.
c. The relationship between the concerned variables was statistically significant at 0.01 level of probability.
d. The relationship showed a negative trend between the concerned variables.

Based on the above findings it was concluded that barriers to purchasing organic food had significant negative relationships with the perception towards organic food. This represents that barriers to purchasing organic food of the consumers was an important factor in problem faced and with the increases of barriers to purchasing organic food perception towards organic food decreases.

CHAPTER V
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter deals with the summary of findings, conclusions and recommendations of this study.

5.1 Summary of Findings

5.1.1 Selected characteristics of the consumers

Age

The majority (71.43 percent) of the respondents were the young-aged category while 26.67 percent and 1.96 percent were found middle and old categories respectively.

Education

The majority 60.00 percent of the consumers were above higher secondary level of education. It was found that 0.95 percent was primary level of education, 33.33 percent were higher secondary level of education and 5.71 percent were secondary level of education.

Annual family income

The highest portion (84.76 percent) of the consumers had medium annual family income compared to 3.81 percent having low and 11.43 percent had high annual family income.

Source of weekly food shopping

The majority 56.19 percent of the consumers had medium source of weekly food shopping compared to having 28.57 percent less and 15.24 percent high source of

weekly food shopping.

Extent of information received about organic food

The highest 69.52 percent of the consumers had medium sources of information about organic food; while 14.29 percent of the consumer's had less sources of information about organic food and 16.19 percent had high sources of information about organic food**.**

Availability of organic food

Most 68.57 percent of the consumers had medium availability of organic food compared to having 21.91 percent less and 9.52 percent had high availability of organic food.

Barriers to purchasing organic food

The majority 68.57 percent of the consumers had medium barriers to purchasing organic food compared to having 18.09 percent low and 14.29 percent had high barriers to purchasing organic food.

5.1.2 Consumers' perception towards organic food

The majority 79.05 percent of the respondents had favorable perception compared to having 14.28 percent unfavorable and only 6.67 percent had neutral perception.

5.1.3 The relationship between selected characteristics of the respondents on their perception towards organic food

Information shows that education, source of weekly food shopping, extent of information received about organic food and availability of organic food had significant positive relationship with their perception towards organic food but barriers to purchasing organic food had significant negative relationship to their perception towards organic food. Of these, extent of information received about

organic food were the most important contributing factors (significant at the 1% level of significant) and education, source of weekly food shopping, availability of organic food and barriers to purchasing organic food of the respondents were less important contributing factors (significant at 5% level of significant). Coefficients of other selected variables do not have any relationship between selected characteristics of the consumers with their perception towards organic food.

5.2 Conclusions

Following conclusions were drawn on the basis of findings, logical interpretation and other relevant facts of the study:

1. The majority 79.05 percent of the respondents had favorable perception towards organic food. Therefore, it may be concluded that individuals having more perception faced low problems to buy organic food. Instead, we identified that positive beliefs about the safety of organic food significantly affect organic food purchases.
2. There existed a positive significant relationship between educations of the respondent with their perception towards organic food. Therefore, it may be concluded that the educated person are more keen towards organic food because of their educational background they know the necessity of organic food for their health.
3. Findings expressed that extent of information received about organic food of the consumers had significant positive relationship with their perception towards organic food. So, it may be concluded that the consumers who have more access to information sources they are more interested to organic food. So, public and privates initiatives should be broaden to make the people more aware about perception towards organic food.
4. Consumers' source of weekly food shopping and availability of organic food had significant relationship with their perception towards organic food in the study area. It is therefore concluded that if the consumers' source of weekly

food shopping and availability of organic food is increase, consumers' perception towards organic food also increase.

5. Barriers to purchasing organic food of the consumers showed negative significant relationship with their perception towards organic food in the study area. The consumers do not buy organic food when they do not find organic food in their nearly market.

5.3 Recommendations

Recommendations based on the findings and conclusions of the study have been presented below:

5.3.1 Recommendation for policy implication

1. It was recommended that steps should be taken by the different government and non-government organizations like DAE and others to maximize individual, involvement with super shop. In order to increase perceptions towards organic food of the consumers, some incentives like food programmed and logistic support etc. should be done.

2. The findings of the study indicated that education had significant positive relationship with their perception towards organic food. Therefore, it may be recommended that the concerned authorities, DAE, GOs and NGOs should take the special mass education program for the illiterate and low lettered consumers for solving their problems.

3. The findings revealed that the extent of information received about organic food had a significant positive relationship with their perception towards organic food. So, it may be recommended that the concerned authority should increase training facilities to develop skills of the consumers technologically so that they can minimize their lacking in perception towards organic food.

4. The source of weekly food shopping and availability of organic food of the consumers had high significant positive relationship with their perception

towards organic food. It leads to the recommendation that extension service should provide adequate market management advice to the growers for increasing their perception towards organic food. It is a fact that if experience were increased, consumers' receptive capacity to perception towards organic food will be increased and thereby marketing ability will be increased.

5. The findings revealed that the barriers to purchasing organic food had a significant negative relationship with their perception towards organic food. So, it may be recommended that the extension workers of the concerned authority should increase the contact with consumers personally and motivate them to be connected with electronic and printed media that can help them to exchange related information which will reduce their barriers to purchasing organic food.

5.3.2 Recommendations for further study

1. The study was conducted on the consumers of only one selected area of Narsingdi and Dhaka district. Finding of the study need verification by similar research in other areas of the country including areas where consumers' perception towards organic food is yet to get popularity.

2. Relationship between selected characteristics of consumers' with their perception towards organic food has been investigated in this study. Further research should be conducted to find out relationship between selected characteristics of the other personal characteristics of the consumers with their others problems.

3. In addition to perception towards organic food, those might have other factors relative to their social, economic, housing, sanitation, nutrition and domestic etc. Therefore, it may be recommended that research should be conducted relation to other factors of the consumers.

4. Research should also be undertaken to identify the factors causing hindrance towards the perception towards organic food. Further research

should be taken related to other issues like knowledge, problems, attitudes etc.

5. Therefore, future studies should go for consumer-based approach which is important not only for consumers, but also in terms of responses to changes in market dynamics.

REFERENCES

Abbott, J.A. (1999). Quality measurement of fruit and vegetable. *Postharvest Biology and Technology*, *15*: 207-225.

Almeida, M.D.V., Pinhao, S., Stewart-Know, B, Parr, H.J. and Gibnet, M.J. (2006). An overview of findings from a six-country European survey on consumer attitudes to the metabolic syndrome, genetics in nutrition and potential agro-food technologies. *Nutrition Bulletin*, 31: 239-246.

Baker, B.P., Benbrook, C.M., Groth, E. and Benbrook, K.L. (2002). Pesticide residues in conventional, IPM-grown and organic foods: Insights from three U.S. data sets. *Food Additives and Contaminants*, **19**(5): 427-446.

Bordeleau, G., Myers-Smith, I., Midak, M. and Szeremeta, A. (2002). Food quality: A comparison of organic and conventional fruits and vegetables. Masters thesis. Den Kongelige Veterincer-og Landbohojskole.

Bourn, D. and Prescott, J. (2002). A comparison of the nutritional of the nutritional value, sensory qualities and food safety of organically and conventionally produced foods. *Critical Reviews in Food Science and Nutrition*, **42**: 1-34.

Dimara, E., Petrou, A. and Skuras, D. (2003). The socio-economics of niche market creation. *International Journal of Social Economics*, **30**(3): 219-235.

Dreezens, E., Martijin, C., Tenbult, P., Kok, G. and Vries, N.K. (2005). Food and values: an examination of values underlying attitudes towards genetically modified and organically grown food products. *Appetite,* **44:** 115-122.

Fagerli, R.A. and Wandel, M. (1999). Gender differences in opinions and practices with regard to a 'Healthy diet'. *Appetite*, **32**: 171-190.

Frewer, L.J., Hedderley, D. and Shepherd, R. (1996). What determines trust in information about food-related risks? Underlying psychological constructs. *Risk Analysis*, **16**(4): 473-486.

Gifford, K. and Bernard, J.C. (2005). Influencing consumer purchase likelihood of organic food, International Journal of Consumer Studies, 30, 2: pp 156-163.

Grunert, K.G., Bech-Larsen, T. and Bredahl, L. (2000). Three issues in consumer quality perception and acceptance of dairy products. *International Dairy Journal*, **10**: 575-584.

Heijs W.J.M, Midden C.J.H. and Drabbe R.A.J. (1993). In Biotechnology: Attitudes and influencing factors, Eindhoven University of Technology, Eindhoven. Institute of Food Science and Technology (IFST) (2005) Organic food, IFST, London.

Kabir, M.H., Islam, M.S., Ali, M.S. and Abdullah, M.M. (2018). Farmers' Perception towards s Harmful Effects of Climate Change on Agriculture. *Asian Journal of Agricultural Extension, Economics & Sociology.* 27(1):1-8; Article no. AJAEES.43006 ISSN: 2320-7027. http://www.sciencedomain.org/review-history/25905

Koivisto Hursti, U.K. and Magnusson, M.K. (2003). Consumer perceptions of genetically modified and organic foods. What kind of knowledge matters?, *Appetite,* **41**: 207-209.

Kutnohorská, O. and Tomšík, P. (2013). Consumers' perception of the health aspects of organic Food. *Agric. Econ. Czech*, **59**(7): 293–299.

Magkos, F., Arvaniti, F. and Zampelas, A. (2003). Organic food: nutritious food or food for thought? A review of the evidence. *International Journal of Food Science and Nutrition*, 54(5): 357-371.

Magnusson, M.K., Arvola, A., Koivisto-Hursti, U., Aberg, L. and Sjoden, P. (2003). Choice of organic food is related to perceived consequences for human health and to environmental friendly behavior. *Appetite*, **40**: 109-117.

Market & Opinion Research International Limited. (MORI) (2003). 'Green Choice' Is Still A Middle Class Affair, MORI, London.

McEahern, M.G. and McClean, P. (2002). Organic purchasing motivations and attitudes: are they ethical?, *International Journal of Consumer Studies*, 26: 85-92.

McIntosh, W.A., Acuff, G.R., Christensen, L.R. and Hale, D. (1994). Public perceptions of food safety. *The Social Science Journal*, **31**(3): 285-292.

Mizrach, A. (2008). Ultrasonic technology for quality evaluation of fresh fruit and vegetable in pre- and postharvest processes. *Postharvest Biology and Technology,* **48**: 315-330.

MoYS. (2012). The Population Category in Bangladesh. Ministry of Youth and Sports, Government of the People's Republic of Bangladesh.

Naspetti, S. and Zanoli, R. (2006). Organic food quality and safety perception throughout Europe, EAAE Seminar 'Marketing Dynamics within the Global Trading System: New Perspectives, Greece, 29 June-2 July 2006.

Shroeder, M.J.A. (2003). Food Quality and Consumer Value, Springer, Berlin Heidelberg. Soil Association. Organic farming, food quality and human health: A review of the evidence, Soil Association, Bristol.

Stobelaar, D.J., Casimir, G., Borghuis, J., Marks, I., Meijer, L. and Zebeda, S. (2006). Adolescents' attitudes towards s organic food: a survey of 15 to 16-year old school children. *International Journal of Consumer Studies*, **31**(4): pp 349-356.

Thierman, A.B. (2000) Protecting health, facilitating trade or both? Annals N. Y. *Acad. Sci.,* **916**: 24-30.

Urena, F., Bernabeu, R. and Olmeda, M. (2008). Women, men and organic food: differences in their attitudes and willingness to pay. A Spanish case study. *International Journal of Consumer Studies*, **32**: 18-26.

Woese, K., Lange, D., Boess, C. and Bogl, K.W. (1997). A comparison of organically and conventionally grown foods-Results of a review of the relevant literature. *J. Sci Food Agriculture*, **74**: 281-293.

APPENDIX-A

English version of the interview schedule

Department of Agricultural Extension and Information System

Sher-e-Bangla Agricultural University,

An Analysis of Consumers' Perception towards Organic food: A survey in the selected areas of Bangladesh

No of respondent:

Name: Cell No:

Address: Name of the Market:

Please answer the following information

Your information will be kept confidential and will be used for research purpose only.

1. Age

How old are you? ..... years.

2. Education

Please mention your year of schooling.....Years.

3. Annual family income

What is your annual family income…….Tk./years

4. Source of weekly food shopping

Which of the following is your main source of weekly food shopping?

Statements	Always	Very Often	Sometimes	Rarely	Never
Supermarket					
Whole sale/retail market					
Open Market					
On line Market					
Street vendor market					

5. Extent of information received about organic food:

How often do you use the following sources to obtain information about organic food

Statements	Always	Very Often	Sometimes	Rarely	Never
i) Organic farming certification service					
ii) Other organic consumes					
iii) Organic farmers					
iv) Organic Food traders					
v) Demonstration in supermarket/whole sale market					
vi) Organic shops					
vii) Media (Newspaper, television, radio)					
viii) Own interest search					
ix) Friends, Family					
x) Scientific magazine					

6. Availability of organic food

How easy in it for you to find organic food in your area (Availability).

Place	Always	Very Often	Sometimes	Rarely	Never
Open market					
Whole sale market					
Street vendor					
Supermarket					

7. Barriers to purchasing organic food

Please indicate your level of agreement that the following factors are barriers to purchasing organic foods.

Factors	Very high barriers	High barriers	Medium barriers	Low barriers	Not at All
i) Unavailability of organic food					
ii) High price of organic food					
iii) Trust					
iv) Lack of quality of organic food					
v) Insufficient variety					
vi) Lack of local Market					
vii) Lack of advertising of organic product					
viii) Lack of knowledge about organic food					
ix) Organic products not being					

certified					
x) Low Production of organic products					

8. Consumers' perception towards organic food

Statement	Strongly agree	Agree	undecided	Disagree	Strongly disagree
i) Organic food is different from in organic food in aspect of nutrition					
ii) I am supporting organic farming because it is environment friendly					
iii) One should emphasized to organic food					
iv) Organic food are being inspected in regular basis					
v) Organic products are heartier so that people liked it very much					
vi) Organic product are fresher so that people liked it very much					
vii) Organic food is better for my children's health so that people liked it very much					
viii) Organic practice in good for environment so that people liked it very much					
ix) Good for sustainable agriculture					
x) Organic food are cheaper so that people liked it very much					

Thank you for your cooperation

_____

Signature of the interviewer

APPENDIX-B

Correlations matrix between focus and explanatory variables

			Correlations					
	X_1	X_2	X_3	X_4	X_5	X_6	X_7	Y
X_1	1							
X_2	-.007	1						
X_3	-.154	.007	1					
X_4	.117	.063	-.103	1				
X_5	-.036	.229*	.097	-.079	1			
X_6	.055	.163	.312**	.113	.460**	1		
X_7	.022	-.242*	-.108	-.099	-.410**	-.463**	1	
Y	.038	.284**	-.114	.197*	.378**	.249*	-.346**	1

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

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

X_1=Age
X_2=Education
X_3=Annual family income
X_4=Source of weekly food shopping
X_5=Extent of information received about organic food
X_6=Availability of organic food
X_7=Barriers to purchasing organic food
Y=Perception towards organic food