Developing Backward Linkage for Supermarket in Bangladesh: An Empirical Study

DOCTOR OF PHILOSOPHY IN MARKETING

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JUNE, 2017

DECLARATION

I hereby declare that the thesis entitled **"Developing Backward Linkage for Supermarket in Bangladesh: An Empirical Study".** Record of bonafide work carried out by me under the guidance and supervision of **Dr. Haripada Bhattacharjee,** Professor, Department of Marketing, University of Dhaka, Bangladesh, for the award of the degree of **Doctor of Philosophy** in the faculty of Business Studies. I further declare that this thesis has not been submitted earlier for the award of any degree/diploma of any university.

June, 2017 (Mohammad Anwar Hossain)

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Dedicated to my parents, wife and only daughter Manha Afsheen.

ACKNOWLEDGEMENT

At the outset, sincerely I offer my devotional thanks to the merciful and gracious Almighty Allah without whose blessings, this study would not have completed. The gracious support and constructive support of the Almighty Allah has been seen and felt through my research guide, my family members, well wishers and teachers. Therefore, it is bounden responsibility to express gratitude from my heart to all those who has contributed in this thesis.

I express my profound gratitude and thanks to my veteran, revered inspiring noble and my beloved research guide Dr**. Haripada Bhattacharjee,** Professor, Department of Marketing, University of Dhaka, Bangladesh, for his scholarly and incisive guidance in completing my thesis.

Dr**. Haripada Bhattacharjee,** my research guide is a talented professor. He is a personification of love, kindness and affection filled with extraordinary intellectual ability, knowledge and skills. I am honored and fortunate to be his student. Being his student, I have achieved the experience of intellectual joy in my research work. The intricacies and threads of research parameters understood by me is all because of the guidance tendered by his erudite and inexplicable academic soul. My guide must be credited for his talent, integrity, time consciousness, sincerity, knowledge and his ongoing intellectual and academic enthusiasm. I once again thank him and his family members for the help.

I am very much grateful to all of my colleagues who were present in the first and second seminar and provided valuable suggestions for the improvement

of this thesis work. I am grateful to my colleague Professor & Chairman Professor Dr. Anisur Rahman for his valuable suggestion and inspiration. I would like to give thanks to my colleage Professor Dr. Morshed Hasan Khan for his great support and encouragement.

I am gratitude to my colleage Professor Dr. Mizanur Rahman for his valuable advice and co-operation. I am also gratitude to my colleague Professor Dr. A.B.M Shahidul Islam and Professor Dr. Abu Naser Ahmed Istiaque for their valuable suggestion and inspiration. I am thankful to my students of Supply Chain Management courses.

My thanks to the General secretary of supermarket owner's association (BSOA) and executives of Arong, Meena Bazar, Swapno for their valuable information. I am also grateful to those respondents (consumers, middlemen and farmers) who joined in the interview during data collection phase.

I pay my respect to my beloved parents, Mohammad Mainul Hossain and Mrs. Afia Khatun. I am thankful to my better half Bibi Morium for her constant persuasion and inspiration in doing my research work. I am extremely thankful to my only daughter Manha Afsheen for his co-operation.

Finally, I would like to express my gratitude to all of my friends, colleages and all members of Marketing Department, University of Dhaka who was always with me.

(Mohammad Anwar Hossain)

Abstract

Supermarket business is becoming popular day by day in Bangladesh. Fresh vegetables are one of their basic commodity among hundreds of product range. However, supply chain of fresh vegetable in supermarket is very complex now because of the involvement of multiple parties. Though fresh vegetables are sold in local marketplace through traditional retailers most of the supermarkets carry a large volume of inventory of vegetables in Bangladesh. At Present, a large number of middlemen are involved in dealings of fresh vegetable that increases cost. On the other hand, because of the absence of information technology the market prediction is difficult which results the considerable wastage of vegetables. These are all increasingly becoming the challenges for supply chain of fresh vegetables. The current sourcing process of supermarket shows higher dependency on intermediaries which can be reduced through own farming or procuring vegetables directly from the farmers. But none of the supermarket is so big enough to buy vegetables from the producer directly rather they can collectively buy vegetable from the producers through Bangladesh Supermarket Owners Association (BSOA), an association formed by the owners of supermarkets. The specific objectives of the study are: (i) To examine how the Supermarket maintain a backward linkage , (ii)To evaluate the customer attitude towards Supermarket ,(iii) To assess the cost and the margin of the Middlemen, (iv)To identify the constraints of Vegetable Marketing of Supermarket in Bangladesh, (v)To evaluate the prospects for developing supermarket in Bangladesh . The study is exploratory in nature. For collecting information from farmers, intermediaries and consumers, semi structured questionnaire was developed. The study located mainly in

Dhaka City as most of the supermarkets are in Dhaka. We administered our questionnaire on 60 producers, 40 intermediaries and 332 consumers. They were selected on the basis of purposive sampling techniques. The study assessed mainly the vegetable items sold in supermarket in Dhaka city. However, four types of vegetables has been selected based on their sales performance in the supermarkets, these are Brinjal, Cauliflower, Cabbage and Tomato. In the present study, we analyzed our data by employing descriptive statistics and factor analysis. For the study, the entire analysis is done by personal computer (PC). A well known statistical package SPSS (Statistical Package for Social Sciences) 20 Version was used in order to analyze the data. The study shows that 31.7 percent farmers acquire less than 20 years of farming experience, 35 percent farmers acquire 21 to 40 years of farming experience. Moreover, the study shows that 68.3 percent farmers belong to small farm groups. The study shows that net returns of tomato were higher than brinjal, cauliflower and cabbage. On the other hand, cost of production per hectare was higher for brinjal than for tomato, cauliflower and cabbage. The study shows that 25 percent middlemen purchase vegetables from farmers, 27.5 percent middlemen purchase vegetables from traders, and 27.5 percent middlemen purchase vegetables from commission agent. The study also shows that prince bazaar offered brinjal and tomato at lower price compare to other super markets. Both Agora and Meena bazaar charge higher price in the case of cabbage and cauliflower. The study shows that Varimax rotation finds five derived factors-'Necessities and Cleanliness', 'Quality and Environment' 'Availability and Price examination', 'Image and Store location' and 'Enjoyable and Fashionable' for selecting supermarkets from the consumers point of view.

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Glossary of Acronyms and Abbreviations

EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
SCM	Supply Chain Management
RFIS	Radio Frequency Identification System
JIT	Just In Time
SKU	Stock Keeping Unit
FIFO	First In First Out
GOI	Government of India
SPSS	Statistical Package for Social Science
FAO	Food and Agriculture Organization
CU	Customs Union
EU	European Union
WB	World Bank
USA	United States of America
UK	United Kingdom
TPC	Third Party Certification
3PL	Third Party Logistics
IT	Information Technology
ICT	Information and Communication Technology
MC	Mass Customization
ROI	Return On Investment

OEM	Original Equipment Manufacturing
ECR	Efficient consumer response
NGO	Non Government Organization
BSOA	Bangladesh Supermarket Owner's Association
GDP	Gross Domestic Product
VAT	Value Added Tax
PRPO	Purchase Request Purchase Order
CWD	Central Warehouse Delivery
EPOS	Electronic Point Of Sale
LGED	Local Government Engineering Department
SME	Small and Medium Enterprise
SWOT	Strength Weakness Opportunity and Threats
STP	Segmentation Targeting and Positioning
GOB	Government of Bangladesh
PCA	Principal Component Analysis
MT	Metric Ton
VCA	Value Chain Actor
DAE	Department of Agricultural Extension
DAM	Department of Agricultural Marketing
AIS	Agricultural Information Services
BARC	Bangladesh Agricultural Research Council
BARI	Bangladesh Agricultural Research Institute
NARS	National Agricultural Research System

FSRD	Farming System Research and Development
MLT	Multi Location Testing
HYV	High Yield Varieties
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
EDLP	Everyday Low Prices
AMUL	Anand Milk Union Limited

1.1 Background to the Problem

The life style of Dhaka city dwellers has been changed. They don't have enough time to buy their necessary products from different stores but they are becoming much concerned about their health. They want to buy all the necessary fresh, hygienic and pure products under the bottom of single roof, which is being possible through supermarket. That's why a big slice of middle class customer is being accustomed with purchasing from supermarket.

The products that they are bringing to their stores by using the non –traditional distribution system are mostly agricultural products. Supermarket authorities are maintaining a long term contract with the association of farmers to produce their product. As a result they are getting a smooth supply of products. They synchronize the demand and supply of their product. Customer is getting their desired product at low price due to the absence of middlemen's margin. Moreover, with this system customer can have more product variety, product availability, customer experience will be higher, and they can buy the product at short time and with less effort. On the other hand in purchasing the product from the traditional store whose products are coming mainly through the traditional distribution system customer has to pay more money as well as customer service is also lower.

The importance of non-traditional distribution system is increasing day by day as it can provide the superior customer value compared to the traditional distribution system. This system offers an opportunity for producers as they are getting fair price, no marketing hassle, employment opportunity and raising income levels. It also offers opportunity for company or firm because they are getting a distinctive competence because of having this network.

Customer is the main beneficiary of this system as they are getting natural, fresh, hygienic product at low price, at low effort and with satisfactory shopping experience. But unfortunately, the backward linkage industries and the value delivery process of the

product of super store of Dhaka city has not been scientifically and comprehensively assessed by any researcher as yet. This necessitates the emergence of this study.

1.2 Rationale of the Study

As per the available literature, "a supermarket, a large form of traditional store, is a self-service shop offering a wide variety of foods and household products, organized into aisles. The supermarket typically comprises meat, fresh produce, and dairy and backed goods aisles, along with shelf space reserved for canned and packaged goods as well as for various non-food items such as household cleaners, pharmacy products and pet supplies. Most supermarkets also sell a variety of other household products that are consumed regularly, such as medicine, and clothes, and some stores sell a much wider range of non-food products".

Researcher personally visited some conventional super markets in Dhaka city and talked with the manager of the store. According to their opinion and my observation, the conventional super market is holding 80% products as mentioned in the definition of the product of super market. The existing super market in Dhaka city are Agora, Almas, Best Buy, Family world, Komart, Lavender, Meena Bazar, Nandan, Priyo, Swapna and Shop and Save. Some of these super markets have also opened-up branches in other major cities of Bangladesh.

The growth of supermarket in Bangladesh is a recent phenomenon. Pioneer is the Agora, located in adjacent to Rifle Square. Subsequently, a few namely, Meena Bazar and PQS (currently is non-existed) have established. Study on the super market is very scant. The present study is an attempt to examine the possibility and sustainability of this market in the context of Bangladesh. Study also identified the constraints that may hinder for the growth of this market.

The core problems for agribusiness development in Bangladesh are the lack of effective value chain linkages among input providers, farmers, traders, processors, and service

providers. Thus a value chain is defined as the full range of activities required to bring a product or service from conception, through the intermediate phases of production, to delivery to final consumers and final disposal after use. A functional value chain means that key stakeholder (farmers, marketers and entrepreneurs) are aware of their mutual linkages which is a deviation from the generally accepted linear value chain model, make a deliberate effort to improve them, and organize themselves in such a way that they can benefit from such linkages in the network, including other stakeholders such as research and extension providers.

The analysis of linkages among different stakeholders reveals weak linkages. The paucity of effective farmer organization, producer organizations, trade associations and coordination mechanisms among stakeholders (e.g. between research and extension) is seen as a major obstacle to further commercialization by stakeholders. The lack of functional value chains in the country is responsible for the current low state of the agriculture commercialization. Agricultural commercialization is a complex and dynamic process involving several dimensions related to technology, markets, finance, institutions, infrastructure and social structure. The farmers, traders and processor are the key agents of commercialization. A demand driven approach is needed, where the key players themselves are motivated to make investment decisions related to technology, infrastructure and institutions rather than the investments being supply-driven by the public sector. The stakeholders in the commercialization process are poorly integrated, and attempts are to be made to provide institutional mechanisms that facilitate the emergence of effective network and value chains.

A chaotic organization of marketing channels results in low quality of products, high post harvest losses, and high price fluctuations. Methods to improve marketing channels require greater coordination in terms of contracts, vertical and horizontal integration, and joint efforts of stakeholders; these methods are rarely used because of lack of trust among the stakeholders and lack of capacity in the value chain management. The weak linkages among commercial stakeholders do not result in increase value addition, competitiveness, and innovation. The situation in agriculture market places is similarly chaotic.

Congestion of market prevails; market infrastructure is in appalling conditions, and market revenue collections system is fraught with irregularities.

1.3 Supply Chain

Supply chains encompass the companies and the business activities needed to design, make, deliver, and use a product or service. Businesses depend on their supply chains to provide them with what they need to survive and thrive. Every business fits into one or more supply chains and has a role to play in each of them. The pace of change and the uncertainty about how markets will evolve has made it increasingly important for companies to be aware of the supply chains they participate in and to understand the roles that they play. Those companies that learn how to build and participate in strong supply chains will have a substantial competitive advantage in their markets.

The practice of supply chain management is guided by some basic underlying concepts that have not changed much over the centuries. Several hundred years ago, Napoleon made the remark, “An army marches on its stomach.” Napoleon was a master strategist and a skillful general and this remark shows that he clearly understood the importance of what we would now call an efficient supply chain. Unless the soldiers are fed, the army cannot move. Along these same lines, there is another saying that goes, “Amateurs talk strategy and professionals talk logistics.” People can discuss all sorts of grand strategies and dashing maneuvers but none of that will be possible without first figuring out how to meet the day-to-day demands of providing an army with fuel, spare parts, food, shelter, and ammunition. It is the seemingly mundane activities of the quartermaster and the supply sergeants that often determine an army’s success. This has many analogies in business.

The term “supply chain management” arose in the late 1980s and came into widespread use in the 1990s. Prior to that time, businesses used terms such as “logistics” and “operations management” instead. Some definitions of a supply chain are offered below:

• “A supply chain is the alignment of firms that bring products or services to market.”—from Lambert, Stock, and Ellram in their book *Fundamentals of Logistics Management* (Lambert et al. 1998)

• “A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves.”(Chopra and Meindl, 2001).

• “A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers.”—(Ganeshan and Harrison, 1995).

So, we can define supply chain management as the things we do to influence the behavior of the supply chain and get the results we want. Some definitions of supply chain management are:

• “The systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole” (Mentzer et al. 2001).

“Supply chain management is the coordination of production, inventory, sourcing, transportation and pricing among the participants in a supply chain to achieve the superior value for the market being served.”- in my words. There is a difference between the concept of supply chain management and the concept of logistics management. Logistics typically refers to those physical activities that occur within the boundaries of a single organization and supply chains refer to networks of companies that work together and coordinate their actions to deliver a product to market. Traditional logistics focuses to the activities like procurement, distribution, production, and inventory management.

Supply chain management acknowledges all of traditional logistics and also includes cross-functional activities such as pricing, information sharing, and sourcing.

In the broader perspective of supply chain thinking the ancillary activities like finance, Human Resources, Accounting Information Technology etc are now seen as part of the system needed to fulfill customer requests. Supply chain management views the supply chain and the organizations in it as a single entity. It brings a holistic systems approach to understanding and managing the different firms and their activities needed to coordinate the flow of products and services to best serve the ultimate customer. This systems provides the framework by which business requirements is meet in best possible way that otherwise would seem not possible.

From individual supply chain perspectives different supply chain requirements often have conflicting needs. For instance, to maintaining high levels of customer responsiveness it is necessary to maintain high levels of inventory, but high inventory suffers efficiency of the company. So, simultaneous improvement in both responsiveness and efficiency is not always possible. Company can operate in the right responsiveness spectrum based on their competitive strategy. Effective supply chain management requires appropriate blend of responsiveness and the efficiency of the companies in the supply chain according to the customer requirements. Customer responsiveness at its most basic level means consistently high order fill rates, high on-time delivery rates, providing higher variety and provide high rate of innovative products as customer desires. Internal efficiency for organizations in a supply chain means that these organizations perform the supply chain functions with low cost.

There is a basic pattern of supply chain management. Each supply chain has its own unique set of market conditions and challenges though the issues remain essentially the same in every case. A Company in a supply chain must make decisions regarding their actions individually and collectively in six areas:

1. Facility—Where to produce the product? And Where to stock? This activity includes decisions regarding capacity of the production and storage plants, role of these plants, and location of production and storage sites.

2. *Inventory*—What inventory should be stocked at each stage in a supply chain? How much inventory should be held as raw materials, semi-finished, or finished goods? The primary purpose of holding inventory is to handle the uncertainty of market demand. However, holding inventory can be expensive, so it is crucial to determine the optimum size of cycle inventory, buffer inventory (if any).

3. *Transportation*—How should inventory be moved from one supply chain location to another? Among the six modes of transportation sea or rail is much less expensive but usually involves longer transit times and more uncertainty. Appropriate mode of transport depends on product characteristics and customer requirements.

4. *Information*—How much data should be collected and how much information should be shared? Timely and accurate information is necessary for better coordination and better decision making. Various information technology can be helpful in managing information like-Electronic Data Interchange (EDI), Internet, Enterprise Resource Planning (ERP) software, Supply Chain Management (SCM) software, Radio Frequency Identification (RFID) etc. Characteristics and capacities are different among these technologies that should be considered by supermarket by use.

5. *Sourcing*-Who will perform a supply chain activity? What functions are performed by the company itself and what functions are from outsourcing? Effective sourcing policy decisions help the company to its supply chain objectives.

6. *Pricing*-How much money will be charged for goods and services? Pricing decisions depends on firm's marketing strategies, competitive strategies and nature of target market.

The decisions about these drivers of supply chain will define the capabilities and effectiveness of a company's supply chain. Company's market performance is highly dependent on the effective decision on these six drivers. If a company wants to serve a mass market and wants to compete on the basis of price, it should structure it's drivers in

a way that is optimized for low cost. On the other hand, If it wants to serve a specific market segment based of customer service and convenience, it should better have a supply chain optimized for responsiveness. What a company is and what it can do is shaped by its supply chain and by the markets it serves.

How the Supply Chain Works? A influential source books that define principles and practice of supply chain management is *The Goal* (Goldratt, 1984). *The Goal* explores the issues and provides answers to the problem of optimizing operations in any business system whether it be manufacturing, supply chain management and mortgage loan processing. The goal of supply chain management can be defined using Mr. Goldratt's words as "Increase throughput while simultaneously reducing both inventory and operating expense." In this definition throughput refers to the sales rate to the end customer occur.

Throughput/ sales differs for different reasons. In some markets customers value service and will pay for it. In other markets customers seek simply the lowest price for an item. As we saw in the previous section, there are six areas where companies can make decisions that will define their supply chain capabilities: Facility; Inventory; Transportation; Sourcing; Information and Pricing. Chopra and Meindl define these areas as performance drivers that can be managed to produce the desired capabilities needed for a given supply chain.

1.4 Participants in the Supply Chain

Supply chain of a company like producer, composed of a company itself and its suppliers and it's customers. This is the basic group of participants that creates a simple supply chain. Extended supply chains contain three additional types of participants. First, there might have supplier's supplier or the ultimate supplier at the beginning of an extended supply chain. Second, there might have the customer's customer or ultimate customer at the end of an extended supply chain. Finally there might have various categories of companies who are service providers to other companies in the supply chain like

transport company, Warehouse Company, insurance company, leasing company etc. In any given supply chain there are some companies who perform different supply chain functions. There are companies like suppliers, producers, distributors, wholesalers or retailers, and companies or individuals who are the final customer of a product. There will have some other companies to support these companies to provide a range of needed services.

1.4.1 Producers

Producers or manufacturers are organizations that make a product. This includes companies that are producers of raw materials and companies that are producers of finished goods. Producers of raw materials are organizations that mine for minerals, drill for oil and gas, and cut timber. It also includes organizations that farm the land, raise animals, or catch seafood. Producers of finished goods use the raw materials and subassemblies made by other producers to create their products.

Producers can create products that are intangible items such as music, entertainment, software, or designs. A product can also be a service such as mowing a lawn, cleaning an office, performing surgery, or teaching a skill. In many instances the producers of tangible, industrial products are moving to areas of the world where labor is less costly. Producers in the developed world of North America, Europe, and parts of Asia are increasingly producers of intangible items and services.

1.4.2 Distributors

Distributors are companies that take inventory in bulk from producers and deliver a bundle of related product lines to customers. Distributors are also known as wholesalers. They typically sell to other businesses and they sell products in larger quantities than an individual consumer would usually buy. Distributors buffer the producers from fluctuations in product demand by stocking inventory and doing much of the sales work to find and service customers. For the customer, distributors fulfill the “Time and Place” function—they deliver products when and where the customer wants them.

A distributor is typically an organization that takes ownership of significant inventories of products that they buy from producers and sell to consumers. In addition to product promotion and sales, other functions the distributor performs are inventory management, warehouse operations, and product transportation as well as customer support and post-sales service. A distributor can also be an organization that only brokers a product between the producer and the customer and never takes ownership of that product. This kind of distributor performs mainly the functions of product promotion and sales. In both these cases, as the needs of customers evolve and the range of available products changes, the distributor is the agent that continually tracks customer needs and matches them with products available.

1.4.3 Retailers

Retailers stock inventory and sell in smaller quantities to the ultimate customer. This organization can also closely monitor the preferences and demands of the customers that it sells to. It advertises to its customers and often uses some combination of price, product selection, service, and convenience as the primary devices to attract customers for the products it sells. Discount stores attract customers using price and wide product selection. Upscale specialty stores offer a unique line of products and high levels of service. Fast food restaurants use convenience and low prices as their device.

1.4.4 Customers

Customers or consumers are any organization that purchases and uses a product. A customer/ organization may purchase a product in order to incorporate it into another product that they in turn sell to other customers. Or a customer may be the final/ end user of a product who buys the product in order to consume it.

1.4.5 Service Providers

These are some organizations that provide services to producers, distributors, retailers, and customers. Service providers developed special expertise and skills that focus on a

particular activity needed by a supply chain. That is why, they are able to perform these services more effectively and at a better price than producers, distributors, retailers, or consumers could do on their own.

In any supply chain, providers of transportation services and warehousing services are most common service providers. There are trucking companies and public warehouse companies and who are known as logistics providers. They deliver services such as making loans, collecting on past due invoices and doing credit analysis. Financial service providers include banks, credit rating companies, and collection agencies. Some service providers deliver market research and advertising, while others provide product design, legal services, engineering services, and management advice. Other service providers offer information technology and data collection services. All these service providers are integrated to a higher or lower degree into the ongoing operations of the producers, distributors, retailers, and consumers in the supply chain.

Supply chains are consists of repeating sets of participants that fall into one or more of these categories. Over time the needs of the supply chain as a whole remain fairly stable. Changes happen in the mix of participants in the supply chain and the roles that each participant plays.

In some supply chains, there are few service providers because the other participants perform these services on their own. In some other supply chains, very efficient providers of specialized services have evolved and the other participants outsource from these service providers instead of doing it themselves (Hugos, 2003).

1.5 What Is New about Supply Chain Management?

Supply chain management, quick response manufacturing, just-in-time production (JIT), vendor management, and agile manufacturing etc share the goal of improving vendor response to customer demand. All of these concepts or philosophies share the same core values. They attempt to improve customer service by eliminating waste from the system

in all of its forms. Supply chain management embraces the other philosophies and extends their scope from one firm to all the firms in a supply chain.

There are two forces that drives supply chain management. **First,** new communications technologies are available now that allows managers to actively manage a supply chain. **Second,** customers are demanding better products and services with lower prices. To meet their customers' demands, firms are optimizing the entire supply chain. Supply chain management allows all individual firms in a supply chain to look beyond their own objectives to the objective of maximizing the final customer's satisfaction by maximizing supply chain value. The maximum value generation ultimately yield maximum return for the overall supply chain which consequently ensure maximum profit for individual firm of the supply chain.

The largest barrier to successful supply chain management is perhaps the human element. Failure to correctly manage the issues of trust and communication will suffer the attempt to manage the supply chain. When there is a lack of trust and communication, the supply chain's members will soon succumb to greed or suspicion that other members of the supply chain are profiting at their expense. If the communication and trust is not adequate, the supply chain will not improve its response enough to increase profits for its members. Without the increase in profits, the efforts to manage the supply chain will be reduced because channel members will be de-motivated.

Supply chain management requires an extensive level of cooperation among the members of the supply chain. It requires an open sharing of information so that all members know that they are receiving their full share of the profits. Since many of the firms in a supply chain do not have a history of cooperation, achieving trust on them is necessary for supply chain management but it is a time-intensive task. Another way that the firms in the supply chain can save money is by ensuring that their marketing strategies correspond to the supply chain's capabilities i.e., from their position in the supply chain they can provide what the customer wants. They are also able to gain money by improving the

supply chain's capabilities to match the market demand. Firms are able to do this because they have additional information to forecast needs and as the lead time is reduced, their need to forecast is reduced. This reduced need to forecast reduces the need to carry inventory stocks for the just-in-case scenario (Fredendall, 2001).

1.6 How to Implement Supply Chain Management

A firm in the supply chain must take the attempt to form partnerships with other members to actively manage the supply chain. Firm that has a large amount of market power in the chain will become the leader of the supply chain usually. This firm needs to justify the effort to its partners in the supply chain by explaining the benefits that will accrue to each member in the supply chain. To do this, the supply chain leader must show the partners where the improvements in the supply chain will arise and how these will lead to a gain profit for everyone in the chain.

To establish trust among the members of the supply chain, the lead firm must also suggest how communication can be opened up and how every member will be ensured that it is receiving its fair share of profits. One recent example of this has been Wal-Mart. For years it has gathered extensive data on customer buying patterns. Wal-Mart has used this data internally to manage its own layouts and inventory. Now it is beginning to share all of this data with its most trusted suppliers. This will allow the supplier who knows how to take advantage of this data an opportunity to improve service to Wal-Mart while decreasing its own costs.

Managing a supply chain is more complex and difficult than managing an individual firm. But, the principles of management used to integrate a firm's own internal functions also apply to managing the entire supply chain. For example, a well-understood phenomenon in the management of a firm is that there is always a bottleneck that constrains sales. This bottleneck may be internal to the firm (a process that cannot produce enough to meet demand) or it may be external to the firm (market demand that is less than the capacity of

the firm). This principle applies to the entire supply chain. While the supply chain is driven by customer demand, it is constrained by its own internal resources.

One difference is that these resources may not be owned by the same firm. It is possible for the individual firm to have limited output for which single firm does not have capacity to meet surging demand. It is also possible for every firm in the supply chain to be operating at a low utilization because there is not enough demand in the market for the products from the supply chain. There are bottlenecks inside the firm just as there are bottlenecks inside the supply chain. To properly manage the supply chain, its members must be aware of the location of their inside bottlenecks and also the locations of the bottlenecks in the supply chain (Fredendall, 2001).

1.7 Supplier selection criteria

Suppliers are important to firm success (Porter, 1985) and selecting appropriate suppliers is important because it affects inventory policies, production, cash flow requirements, and product quality (Choi and Hartley, 1996). Braglia and Petroni (2000) postulates that supplier selection process consists of two steps: **first,** suppliers are evaluated to determine if they qualify when measured against certain choice criteria, and **second,** suppliers are selected that meet or exceed these choice criteria. Choice criteria are defined as "The factor(s) [a buyer] uses to evaluate competitive offerings" (Lehmann and O'Shaughnessy, 1974).

The criteria used to evaluate suppliers vary, but past research indicates that three of the most important are product price, quality, and delivery reliability (Braglia and Petroni, 2000). Price is the economic outlay necessary for the purchase of the product. Quality is defined as the extent to which the supplier's product conforms to buyer specifications. Delivery reliability is the number of times the supplier's product is available for use by a promised date.

There are many reasons delivery reliability is an important supplier selection criterion. **First,** delivery reliability is a very visible supplier attribute. When delivery is unreliable,

it can cause severe economic consequences by shutting down a plant or delaying production (Lehmann and O'Shaughnessy, 1974). **Second,** delivery reliability affects the level of safety stock a firm must maintain. Money spent on safety stock could be reallocated elsewhere if the supplier were able to deliver product reliably. Price is important because it provides the purchasing agent a way to justify their selection (Lehmann and O'Shaughnessy, 1974). Further, purchase price directly impacts cost of goods sold, which influences profit margin and the firm's ability to charge appropriate prices.

The quality of purchased goods impacts both costs and the ability of the purchasing firm's to deliver their product in a timely manner. Poor quality inputs result in higher levels of production waste, increased safety stock, an increased need to perform quality assurance checks, and possibly increased liability costs if defective product is sold to customers. Poor quality impacts delivery reliability because the purchasing firm cannot be certain that inputs of sufficient quality will be available for production to meet customer demand in a timely manner (Voss, 2013).

1.8 Supply Chain Drivers in Agribusiness

In this chapter, we have so far discussed the role of supply chain drivers namely facilities, inventory, and transportation, sourcing and information technology impacting the performance of inputs industry.

1.8.1 Facility

Facility management for the agricultural inputs sector is an important aspect of supply chain drivers. When one looks at any facility, its various forms need to be analyzed. One aspect is with respect to manufacturing, process, and resource endowment, and the other is about creating storage spaces such as warehouses and regional distribution centers, especially with respect to input management. In the case of a seed multiplication plant for cereals and other large crop bases where seed processing is to be centralized, the facility-related decision would hinge on whether to locate centrally or be driven by location

economics and distribute low weight/volume material like seeds through distribution networks. The situation would remain true in the case of crop protection chemicals like pesticides.

However, centralized locations would not necessarily be the criteria for industries dealing in certain other inputs, such as fertilizers and tractors. Though these plants are expected to use economies of scale in production, they tend to be located where there is maximum cost economy from perspectives of capital and operations. One may observe that some of the plants have skewed locations for a variety of reasons.

A well-designed distribution network that is part of its facilities has helped it achieve success in business. Thus, one may conclude that the management of manufacturing locations and distribution networks, especially nodes and flows to distribution points, can define the success of a supply chain.

1.8.2 Inventory

Another important supply chain driver is inventory management. In the agribusiness input industry, inventory would play a significant role, as inputs are used for producing agricultural produce during the season. In India, agriculture is carried out during two seasons, namely, the *kharif* and the *rabi* seasons. *Kharif* season is after first rains of south-west monsoon in India, which is in June–July and harvest happens in September and October. *Rabi* season starts after the *kharif* season and more popularly termed winter crop with plantation in November and harvest in February/March. Cultivation is triggered by the onset of the monsoon. Inputs such as seeds and capital equipment and preparatory farm equipment would be required at the initiation of crop farming. As the crop firms up, farmers would need fertilizers, crop nutrients, and pesticides. Later, farmers would need farmer extension support services, harvesting support, and support in reaching the markets. All these activities require an effective inventory management policy across the supply chain.

The players deploy inventory concepts such as cycle inventory, safety inventory, seasonal inventory, and pipeline inventory. Inventory could be in the form of raw material, work in progress, or finished goods.

Cycle inventory is the average inventory that builds up within the supply chain, because a supply chain stage either produces or purchases in lots that are larger in volume than the demands of customers. Raw materials, components, and parts are required for production. The cycle plays a crucial role in keeping the production process continuous. Raw materials and work-in-progress inventories are a major part of the production-related inventory. This works even in the agribusiness input sector. Fertilizers typically work on building cycle inventories, as they are moved along a distribution network before they reach the farming community. Similarly, many other farm inputs such as seeds, micronutrients, and crop protection chemicals move through a distribution network requiring effective planning and management of cycle inventory.

Cycle inventories are “held primarily to take advantage of economies of scale in the supply chain. Supply chain costs are influenced by lot size. The primary role of the cycle inventory is to allow different stages to purchase products in lot sizes that minimize the sum of material, ordering, and holding costs. Ideally, cycle inventory decisions should consider costs across the entire supply chain, but in practice, each stage generally makes its own supply chain decisions, increasing total cycle inventory and total costs in the supply chain” (Chandrasekaran, 2010). The problem is compounded by multi-level intermediaries, with varying sizes and significant differences in negotiating power.

On the other hand, the safety inventory is an inventory carried for the purpose of satisfying demand that exceeds the amount forecast for a given period. Inventory is carried based on forecasts of demand, and forecasts are rarely accurate. In the agriculture sector, demand for inputs like seeds surges under exceptional monsoon conditions. At such times, when demand is higher, there are lost sales if the product is not available along the distribution network. Similarly, in the agricultural inputs equipment industry, it is important to stock critical components, as failures cannot be scientifically predicted.

Breakdowns during peak operating seasons can have negative consequences. In order to avoid customer service problems and the hidden costs of unavailable components, companies hold safety stocks. This provides a cushion against uncertainties in demand, lead time and supply, thereby ensuring that operations are not disrupted.

The term, “seasonal inventory” refers to inventory that is used to absorb uneven rates of demand or supply that agribusinesses face. Manufacturers of seeds, fertilizers, nutrients, and crop protection chemicals in India experience seasonality in sale, with peaks around monsoon time—either the south-west monsoon or the north-east monsoon. If there is no stock in stock-keeping units (SKUs) during this period, the firm may lose market share. Hence, holding seasonal inventory helps in evening out volatility in demand and supply. A focal firm may stock up on SKUs to meet seasonality-related fluctuations. In contrast to the seasonal inventory, the pipeline inventory, or inventory in transit, refers to inventory moving from one node to another in the materials flow system. Materials move from suppliers to a plant, from the plant to a distribution centre or customer, and from distribution centre to a retailer.

Pipeline inventory consists of orders that have been placed but not yet fulfilled. This can be reduced by reducing stocking locations, improving materials handling and avoiding delays in distribution. However, such a strategy is difficult in many consumables input segments of the agribusiness sector (Chandrasekaran, 2010).

Farm sector inventory issues are more to do with estimating demand and managing stocks across the distribution channel for effecting sales at appropriate times. Another critical challenge is the availability of the right SKUs in the required quantity, especially in case of seeds and crop protection. The agribusiness input sector has a varied and proliferate demand for SKUs in different locations, with a tendency to support its ultimate customers in the chain, namely, the farming community.

Another aspect of inventory management in the agribusiness input sector is the obsolescence of input material because of lapse of recommended useful period of life,

loss of demand, and variance in demand estimation. These issues are quite normal, and business practices require building of inventory across the chain. The issue is: how does one handle unsold inventory or manage returns with respect to the focal firm? Generally, firms rely on the demand estimates and use extension staff to closely coordinate the information flow. Diverting products to relevant locations and quickly reprocessing before expiry are some of the practices deployed. There is a substantial cost incurred, as loss of goods due to expiry of useful life is provided for.

This leads to a discussion on the cost of managing inventory in the agribusiness sector. Discussions on inventory cost also include the holding cost, namely, financing costs such as interest on capital, obsolescence, warehousing at the institutional level, and so on. Depending upon the nature of the input industry, these costs would vary. For example, in the case of fertilizer, the inventory holding cost could be significant, as firms need to carry substantial stock to meet surges in seasonal demand. In the case of seed crops like sugarcane, the work-in-progress inventory is critical, as the seed crop takes almost seven months to harvest. Cane cultivation is coordinated by cane department of sugar plants, which promotes cropping for registering acreage under commercial production. At the farm level, farmers hold work-in-progress inventory in the field, incurring substantial commercial risk.

There must be a commercial crop plantation plan under which seed cane must be harvested and inventory needs to be monetized. On the other hand, many other crops may have different approaches. A firm generally produces its crop seeds one year ahead. *Kharif* seeds for a given season are produced in the previous *kharif* season, and the same practice applies for *rabi* seeds.

However, there have been discussions exploring the feasibility of producing seed during the *kharif* season and selling it for the *rabi* season if the seed variety permits cropping in both seasons. Further, the possibility also exists of producing seed in the early (*kharif* or *rabi*) season and selling it in the late (*kharif* or *rabi*) season. This may be possible in regions where monsoon movements allow enough time to organize the processing of

seeds and logistics. Though such innovative practices would reduce inventory costs of input goods, traditional practices of carrying inventory for a year are more common in the seed industry.

Inventory management in godowns, processing plants, and other handling locations is very critical. As seeds are perishable, following proper inventory management practice is important. For example, a company may have a policy to follow the first-in first-out (FIFO) method, though one may not be sure whether it would be implemented effectively, considering the informal and unorganized nature of the sector.

Thus, inventory management in the agribusiness sector, both at the farm gate level and the processing level, brings several unique aspects and challenges.

1.8.3 Transportation

Transportation management is another supply chain driver that could impact the agribusiness input sector. As mentioned in the previous chapter, agricultural inputs have the characteristics of bulkiness; perish ability, and seasonality, which create challenges for transport management. Over and above these characteristics, the agribusiness input sector suffers often from the need to be cost-effective, as Indian farmers are afflicted by low income and poor savings. Farming is undertaken as a compelling economic activity, which may not necessarily pay back decent returns.

In fact, apart from the rising issues with respect to the socio-economic aspects of agriculture input management, one will have to probe matters from the supply chain perspective, namely, are firms in the supply chain truly working on an equitable partnering mode, such that that every player’s time, efforts, and resources are fairly compensated for? This would be an important perspective while understanding transportation management aspects relating to the agribusiness inputs sector.

The transportation network is influenced by the distribution network for the product. Here, one may be looking more at outbound challenges that become inbound issues at the

next stage of the supply chain. In the case of the seeds market, the transportation issue is not that challenging when farmers buy local seeds, except in the case of products that are bulky and perishable. Such products may include seed plants for plantations or cane. More often, farmers manage these challenges through better planning and use of local market vehicles.

Branded and labelled seeds are distributed through the channel partners. In such a network, these movements can be handled in the form of small parcels up to the last mile. Between the manufacturing unit and the warehouse, they will move in full truck loads. Then, between the warehouse and distribution points such as preferred dealers and stockists, they may move in trucks on the milk run. Only in case of sudden unexpected demand they would be moved in quantities lesser than truck loads, or through parcel services.

If one looks at transportation network challenges for a bulk product like cane for the sugar industry and fertilizer, the situation may be different. In the case of the sugar industry, seed cane movement is mostly localized, as the material for planting has to be procured from within a geographical area of radius 50–100 km. The challenge lies in planning and scheduling of seed cane for plantation. Farmers mostly use their own transport like tractors for this purpose.

For requirements involving large volumes and long distances, they also use trucks. Coordination with seed cane farmers, plantation fields, laborers, and transport operators become critical in this operation. Any delay in handling caused by the failure to by any of the parties to show up can lead to a variance in the planned schedule, and to activity that may lead to poor supply chain network performance. Apart from seed cane, other transportation and distribution management of other inputs such as fertilizers, crop nutrients, and crop protection also plays a significant role.In the fertilizer business, delivering the product through the right mode to the right customer at the right time, right cost, and right quality matters most.

Transportation problems associated with choice of mode, location of primary movement points, and management of normative and actual transportation costs are common challenges in any manufacturing set-up that has to market its products to the interior parts of the country. In the case of a number of fertilizer companies in India, transportation costs play a very significant role in the profitability of the firms.

Further, there has been increasing pressure on the country's economic policy makers to reduce subsidies on fertilizer. However, at the firm level, a logistical trade-off needs to be achieved for improving operational efficiency, coupled with warehouse and inventory costs. Decisions based on the results of an evaluation of transportation options would also have a considerable impact on the procurement process.

In any agribusiness input sector, the supply chain manager would constantly be evaluating the cost comparisons of the various options for transporting goods from stock points to consumption points. The manager would also be giving thought to the extent of spill over of stock possible during the peak period, and its associated cost. If one looks at an input like pesticide, companies may not have an extended retail presence; instead, they may depend upon on a network of dealers, distributors, and preferred dealers to service the demand. The sales organization is made up of independent operations in different zones (typically, the country is divided into four zones), with states divided into regions and districts into territories. SKUs are transported from the manufacturing plants to warehouses (regional distribution centers), which are at times managed by carrying and forwarding agents. Much of the transportation from the manufacturing locations to warehouses is done on a single source–single destination–multiple product–full truckload basis. The rest involves movement from a single source to multiple destinations on a full truckload basis. From the warehouses, the material is usually moved to the distributors in full-truckload milk runs. Occasionally, materials are sent as parcels to a single destination. Distributors manage the movement of material to dealers using smaller vehicles such as auto-rickshaws and vans.

Thus, transportation management for the agribusiness input sector is challenging, and varies widely from localized to centralized distribution involving volumes ranging from small parcels to bulk material. It is important to understand the nuances of each supply chain and optimize the transportation system taking into consideration all relevant inventory and facility decisions (Chandrasekaran and Raghuram, 2014).

1.8.4 Sourcing

Procurement is also referred to as the sourcing and purchasing of goods and services for commercial purposes. Every decision unit, be it a farmer or a firm, sets procurement policies that govern its choice of suppliers, products, and the methods and procedures of buying. Depending upon the size of the decision unit and the complexity and level of formality of the agribusiness concern, procurement practices are evolved in various segments.

At the farm level, sourcing decisions to many inputs and services are decided by push factors, which is based on the availability of input to be sourced off the shelf. However, mismatch between what is required at the field and when may not be available. For an individual farmer, inputs that are involved in procurement decisions include seeds, fertilizer, pesticides, plant nutrients, extension services, and labor. Though one would think that such procurement decisions are mostly driven by the fundamental economics of agrarian principles, group decisions also play a major role. For example, procurement chain decisions should focus on the micro level aspects of the geography in which the farm is located. Certain parts of one district sometimes get more rain, while neighboring districts or *taluks* of the same district may not get as much rain. The supply of inputs should be planned at a micro level by getting enough information from the field. Farmers under such circumstances are driven by group decisions to achieve a balance between demand and supply, and also to enjoy the benefits of contiguous farming. The need for contiguous farming can be better appreciated in wet crop lands and in some dry land irrigated cropping patterns, like with sugarcane. Since farmers are expected to support community goals in their villages, fields that are further away from access roads will

have to go along with those that access the roads. Given the fact that there is a need for sharing water and optimizing efforts in crop management, including those involved in receiving inputs to and sending outputs from the farm, contiguous farming is a compulsion. This influences procurement decisions at the individual farm level, since decisions are made jointly with others in the peer farming community. Peer groups build and improve upon relationships with many stakeholders, such as input suppliers and extension support system providers. This helps better handling of procurement challenges such as identifying the needs of customers (farmers) and suppliers, choosing tools and processes to communicate with suppliers, policies for evaluating proposals, and quotes and suppliers (pricing aspects). It is important to note that group behavior and systems dominate the procurement process at the farm level.

1.8.5 Pricing

After having discussed procurement as a driver, one may look at pricing as a supply chain driver in the agribusiness input sector. At the farm gate level, seeds are fairly priced on the basis of market conditions. Fertilizer is a product that in India is highly price-sensitive and subsidized. The GOI has initiated nutrient-based subsidy schemes from 2010, and is expected to reduce fertilizer subsidy over the years. From the supply chain perspective, changes in central and state government support for fertilizer prices in form of subsidy would impact demand and supply.

Another important agribusiness input is agricultural laborers. In India, supply of agricultural laborers is becoming a problem, as majority of the rural population is no longer willing to work on demanding jobs in the field. This situation could be the result of the impact of urbanization, with increased work opportunities in construction and industries. Apart from these, developments in infrastructure are also absorbing agricultural laborers.

There is an increasing tendency among rural people who offer their services as agricultural laborers to reduce the time given by them to agricultural work, as they are get

the support of the GOI (Government of India) through the National Rural Employment. Though assessment studies have mentioned the positive contribution the scheme makes to the social fabric, one cannot ignore changing cultures and the increasing apathy towards laborious agricultural labor. This hampers agribusiness input supply chain efficiencies, and results in a lack of supply chain orientation in the sector.

Moving forward with the discussion on pricing, we can see that agribusiness sector farm equipment pricing is mostly decided by market dynamics. The challenge has been more severe for small and marginal farmers in using equipment that is available on lease for tasks. These services are mainly handled by intermediaries, and therefore, an exorbitant pricing mechanism is often followed. Farmers are compelled to agree to these prices because of their compulsions to proceed with their farming duties on critical farm calendar days.

1.8.6 Information

Information is another important driver impacting agribusiness input decisions. It can be observed from the preceding discussions that a lot of inefficiencies occur in the farm gate sector because of improper and inadequate information, handled by intermediaries through local grapevines. Further, these intermediaries, who are well entrenched in the system because of the credit mechanism, could distort information at the farm level to suit their own purposes.

The government has been initiating a number of initiatives to promote information dissemination over the decades. Agricultural extension service support by governments and universities provide for the improvement of farming economies and the aggressive posture of supply chain networks, as various parties in the network are involved in developing and promoting new varieties, practices, and market reach. Agribusiness process units work closely with the government and universities to promote commercial farming. There is a win-win approach when stakeholders collaborate to transfer information. Though farmers respond well to advice on farming and practices,

transactional information is what is critical. AMUL's (Anand Milk Union Limited) ability to provide information built on strong cohesiveness leading to competitive advantages is an example of a successful cooperative mechanism.

Not only large corporate bodies, but also small- and medium-sized firms who have taken up agribusiness drive such information dissemination activities on extension services. It is important to understand the role of information in supply chain efficiency in the agribusiness sector, which has just as much importance as in case of manufacturing or assembly businesses like motor cars. In fact, information is more significant in agribusiness, as it affects the economy and livelihoods more than operational transactions like buying and selling.

Typically, the *rythu ratham* vehicles are equipped with soil-testing kits, pesticide sprayers, protective gear, an LCD projector, a computer system, training videos, and so on. The material is shown in villages, typically in the shade of trees, on *gram sabha* platforms and at *panchayat* offices. Farmers typically watch the demonstrations on farm-related activities very keenly. What is really happening is that with the government having cut down on its budget for agricultural extension activities, mainly under the auspices of the Farm Information Bureau, which used to organize such field visits, private initiatives are now beginning to occupy that space.

The role of supply chain drivers such as facilities, inventory, transportation, procurement, pricing, and information in bringing efficiency to the agribusiness input sector is clear. There are a number of role agents such as farmers, focal firms who could be processors, intermediaries, governments and institutions. All of them jointly lead to supply chain profits and create value in the system. Any silos approach leads to the kind of inefficiency that characterized the systems of the past.

Farming has been maturing over the years, but that also brings new sets of issues that need the attention of farm managers and policy makers. The technology, process, and people trilogy plays a significant role in defining supply chain maturity. Technology and

process improvements are impacting people in different walks of life, including agribusiness. At agribusiness process unit levels, a number of initiatives with information systems and the use of handheld devices have been supporting positive trends in supply chain efficiency.

In a few situations, the lack of availability of agricultural laborers and the negative trend impacting labor availability in some areas due to the implementation of the National Rural Employment Guarantees Act have driven farmers to consider use of advanced technology-based capital equipment for farming activities such as sowing, fertilizing, harvesting, and even threshing of grains. This is an area of interesting developments in input management, as it economizes usage of labor by reducing dependence. Farmers need not necessarily buy the equipment, which in any case would be out of the reach of most of them. They can avail of the services of intermediaries who are dealers and operators of the required equipment in defined territories, and provide the equipment as a service on a use and pay model. There are cases where the dealers themselves come and perform the necessary activities as an outsourced process. This is certainly a welcome development in terms of the application of technology and process to overcome people-related issues. However, the disadvantages here are the inefficient clubbing of demand for services and the inadequate numbers of equipment in use, which deters usage at times by creating uncertain waiting times and loss of productivity due to loss of moisture in produce, and so on. One would expect this part of supply chains to pick up steam in the years ahead, improving efficiency and reducing certain value losses that are prevalentin the current frame of operations (Chandrasekaran and Raghuram, 2014).

1.9 Broad Objective of the study

The broad objective of the study is to develop backward linkage for supermarkets in Bangladesh. Vegetable items that are sold mostly in Bangladeshi supermarket, their value chain, customer perceptions toward the price, quality and hygienic aspects etc. has been examined.

1.10 Specific Objectives of the study

The specific objectives of the study are:

- To examine how the Supermarket maintain a backward linkage
- To evaluate the customer attitude towards Supermarket
- To assess the cost and the margin of the Middlemen.
- To identify the constraints of Vegetable Marketing of Supermarket in Bangladesh
- To evaluate the prospects for developing supermarket in Bangladesh

1.11 Research Question

What is the nature of existing supply chain system of vegetables of different supermarket in Bangladesh?

1.12 Factor Analysis

Factor analysis is a generic term for a family of statistical techniques concerned with the reduction of a set of observable variables in terms of a small number of latent factors. It has been developed primarily for analyzing relationships among a number of measurable entities (such as survey items or test scores). The underlying assumption of factor analysis is that there exist a number of unobservable latent variables (or "factors") that account for the correlations among observed variables, such as, if the latent variables are partialled out or held constant, the partial correlations among observed variables all become zero. In other words, the latent factors determine the values of the observed variables (The University of Texas at Austin 1995).

Each observed variable (y) can be expressed as a weighted composite of a set of latent variables (f's) such as:

$$y_i = a_{i1}f_1 + a_{i2}f_2 + \text{----------} + a_{ik}f_k + e_i$$

where, y_i is the i^{th} observed variable on the factors, and e_i is the residual of y_i on the factors.

1.13 Chapter Plan

The study consists of eight (8) chapters. **Chapter one** identifies the rationale and justification of the study. **Chapter two** reviews the relevant literature on super market and also identifies the research gap. **Chapter three** assessed the scenario of super markets in Bangladesh and their marketing strategies. **Chapter four** discloses the research design and methodology of this study. **Chapter five** examines the farmers and middlemen marketing cost and margin of the vegetables. Moreover this chapter examines the attitudes of consumers regarding super markets. **Chapter six** identifies the possible constraints of vegetable marketing of supermarket in Bangladesh. **Chapter seven** proposed new supply chain model of vegetable of supermarket. **Chapter eight** summarizes and concludes the study.

1.14 Chapter Summary

The chapter highlighted the concepts of supply chain, participants in supply chain management, implementation of supply chain management, supplier selection criteria, supply chain drivers in agribusiness, rationale of the study, objectives and research questions of the study and chapter plan of the thesis.

Review of Literature

A large number of research studies, articles relating to various aspects of supply chain have been published at home and abroad. However, critical reviews of some of the important research studies/articles have been made in this study.

2.1 Vegetable Marketing System of Super Markets in Different Countries

Global value – or supply – chains refer to the series of processes that result in the production of a finished commodity, and to the increasingly international character of this circulation (Gereffi, 1994). The trade of food on a global scale was a keystone of the late colonial period, but the flow of fresh fruits and vegetables across continental – and intercontinental – distances is relatively recent, and began to take its current shape around the 1980s (Friedland, 1994). Today, consumers in industrialized countries in temperate regions take the year-round availability of things like tomatoes or lettuce for granted, but the worldwide supply of these highly perishable products has been made possible only after a profound reorganization of the global food order.

The emergence of global supply chains has been made possible by several intersecting factors. On the broadest scale is the crisis of the statist model in the 1970s and the shift towards economic and financial liberalization, which broke down the post-war food order (Goodman and Watts, 1994). Developing countries had to dismantle many of their protective policies and were thrust into competing – often unprepared – in international markets; at the same time, they had to confront the dwindling prices of agricultural commodities (Hallam and Sarris, 2006). These countries tried to exploit their comparative advantages in climate and access to cheap labor by focusing on non-traditional fruits and vegetables for agro-exporting to generate income (Llambí, 1994); Through massive foreign investment and flexible labor practices this process has often been made possible in dedicated agro-exporting zones (Bair, 2009). Facilitating these changes was a series of technological transformations such as new plant varieties and improved transportation and handling methods.

The second factor is the growth and concentration of corporate agro-food capital, particularly in the form of extremely powerful supermarkets (Gibbon and Ponte, 2005). Retailers redefine their relationships with suppliers by using their bargaining power, which shifts the governance of the food-supply chain from producers to retailers (Marsden et al., 2000). Farmers trying to supply supermarkets must take on contractual agreements in which the retailer demands specific prices, volumes, qualities, and timing of delivery. A closely related feature is the change in consumer preference and taste, particularly in wealthy countries. Buyers are increasingly conscious of what they eat and where it comes from, which has led them to demand healthier food, improved safety standards, as well as social and environmental sustainability. The food system regulation has thus been gradually transferred from the governmental sphere towards these consumer-driven private standards, including organic and fair-trade labels (Ruben et al., 2007).

The relevance of global supply chains, then, consists of the power they have to link an all-season demand for high-quality, safe and healthy food in industrialized countries, with the need to export high-value crops in developing countries. For all their promise, serious doubts remain about the actual possibilities that they open for improving livelihoods in impoverished regions. These doubts revolve around the question of value – who keeps the profits? – and the question of access – who is able to participate? Majority of the chains are structured around a lead firm, usually a transnational retailer or food manufacturer, which establishes the broad conditions of trade (Gereffi, 1994). A major concern is that the overwhelming size and purchasing power of the lead firm relative to farmers and other smaller intermediaries will result in a highly skewed distribution of profits among the different links in the chain (Ruben et al., 2007). A second concern is that smallholders may find it tough to connect with these high-value circuits. While there are some instances of successful integration between peasant farmers and global retailers through contract farming (Hernández et al., 2007; Lundy et al., 2007; Minten, 2007), the available evidence suggests that it is mostly large agro-industrial farmers, and not smallholders, that are able to meet the delivery schedules and quality standards demanded

by supermarkets (Faiguenbaum et al., 2002; Gutman, 2002; Van der Meer and Ignacio, 2007; Vettas, 2007).

A more recent twist to the global supply-chain saga is the rapid rise of transnational retailers in developing countries, a phenomenon that has captured wide attention (FAO, 2004; Reardon et al., 2003; Wrigley and Lowe, 2007). The effects of the so-called 'supermarket revolution' in the Third World remain unclear, and have probably been overstated (Humphrey, 2007). Certainly supermarkets have been a restructuring force in local agro-food systems as they attempt to replicate the procurement practices they use in their countries of origin by actively building new supply channels through contract farming (Reardon et al., 2007). But their success appears to be mixed. As mentioned above, most smallholders are unable to become suppliers of supermarkets, which creates a two-tiered system of producers for the domestic market: those who are big (and wealthy) enough to supply supermarkets and those (mostly peasants) who sell into traditional markets (Vettas, 2007). In addition, most retailers that have established themselves in developing countries have been unable to rely exclusively on contracted suppliers, and often tap into traditional wholesale markets, particularly to buy fresh fruits and vegetables (Dirven and Faiguenbaum, 2008; Schwentesius and Gómez, 2002).Global value chains are an important part of, but not the whole story, and in many cases they are not the main story even. This article investigate that the domestic market in Colombia – and many other developing countries – is to a large extent driven by the demands of low-income consumers for cheap food. In spite of the hype over a 'supermarket revolution', the presence of powerful lead firms is only one of many forces shaping the evolution of internal food markets.

Guarín (2013) argued that traditional supply chains involving peasant farmers, wholesale markets and small-scale retailers, for all their imperfections, perform the crucial function of providing markets for smallholders and access to food for poor consumers in Colombian cities. This section makes the case for paying serious attention to domestic food markets as an area with many unresolved questions but potential for fruitful intervention. Domestic agricultural markets were the focus of considerable attention in

early development studies, because they were seen as crucial to realizing the gains of industrialization by boosting demand and stimulating the expansion of production through backward linkages (Collins and Holton, 1963; Hirschman, 1958). It might seem unfashionable to invoke these 50 year-old concerns in today's radically different world. Certainly global value chains, if adequately designed, offer possibilities for improving the lives of farmers in the Third World. But they affect only a small portion of the farming population, and perhaps an even smaller portion of the urban poor.

There are good reasons for being interested about global value chains by scholars and policymakers. This analytical framework is especially well suited for understanding the food system in advanced economies, as well as how increasingly sophisticated demand and standards in industrialized countries dovetail with the need for adding value to ever cheaper agro exports in developing countries. But the usefulness of the global value chain approach is quite limited as a tool for understanding the transformation of internal markets in the Third World. Certainly global dynamics set the stage for the development of national economies, even if particular chains, or linkages within those chains, are not themselves global (Bair, 2009). But my research and other emerging evidence lends support to the view that 'far from being an irreversible tsunami, global supply chains and supermarkets are one of the many forces affecting the evolution of food systems in developing countries' (Jayne, 2008).

From a public policy perspective, a shift of emphasis to domestic supply chains would have several important implications. The first has to do with the urgent question of hunger and malnourishment in cities. Except in the direst cases, which have to rely on food aid, the majority of low-income consumers in cities have to pay for their food. In this sense, they are particularly sensitive to the price of basic staples, as has been dramatically demonstrated by the rise in world hunger as a result of rising prices in the recent past (FAO, 2009). Furthermore, the risks associated with an increasingly high-calorie and high-fat diet make access to affordable fruits and vegetables a public health priority (Haddad, 2003).

Traditional retailers are, and will probably continue to be, the primary points of access to food for low-income populations, and should be at the core of hunger-alleviation policies. Tighter public oversight of traditional food markets could help guarantee that the lower quality products demanded by poor consumers meet a minimum of health and safety requirements. However, public policy must address that the demand of poor consumers for cheap food is one of the main structuring factors of the supply chain, and that unreasonable regulation will probably result in less compliance or the deepening of illegal markets. Secondly, programs for combating poverty in the cities can and should be linked to broad rural development policies. Government efforts have been biased towards the promotion of competitiveness of agricultural enterprises in international markets and fostering investment in agribusiness. But integration into the international market cannot be carried out at the neglect of domestic provisioning. The foreseeable persistence of peasant farming (Lipton, 2005) could be seen as a strategic asset for achieving self-sufficiency in basic staple goods, but this would require a much closer alignment of urban and rural policy. A concrete possible line of action, which until now has only been timidly experimented with, is to rely on small farms for the procurement of public schools, hospitals, and hunger alleviation programs such as community kitchens.

Wholesale markets are another crucial area for further research and potentially wide reaching intervention. Socio-economic research has been overwhelmingly concerned with production and consumption, but we know relatively little of what happens in the middle (Fafchamps, 2004). This is particularly important because market modernization will not proceed in an orderly and predictable fashion towards ‘supermarketisation’: messy wholesale and other informal markets are resilient, but they can only be improved if we have a better understanding of their functioning (Tschirley et al., 2011). The state’s role as owner and co-coordinator of these markets, which reached its highest point during the 1960s and 1970s, will probably continue to decline (Bruinsma, 2003). But even as private actors take increasing control over food assembly and redistribution, the strategic importance of wholesale markets demands careful public oversight. This includes not only key investments to upgrade infrastructure and facilities, but also ensuring that market information is openly and widely accessible. The state can also create incentives

to promote vertical co-ordination and improve co-ordination between buyers and sellers, or act to curtail the monopolistic power of wholesalers through strengthening farmers' or retailers' co-operatives and associations (Chang, 2009).

Value-chain analysis could provide a useful framework for the study of informal and traditional food markets, but the model of a lead firm exerting discipline upstream through private standards (Fulponi, 2007) has to be challenged. What we might call 'traditional chains analyses should be able to recognize that power can be unevenly distributed along the chain, and that different agents are linked by different types of standards. Transactions between wholesalers and small vendors, for example, may not be governed by explicit contractual arrangements, but this does not mean that they are standard-less: through repeated interactions and personal knowledge trust is established, and reputation becomes a valuable currency. How do these informal market institutions develop, and how do they change? Studies in this direction are scarce (Fafchamps, 2004), but they offer many possibilities for both quantitative and qualitative research. An important aspect of this research would be to examine how informal and formal institutions co-occur, and how they relate to each other. Although conceptually it is tempting to see traditional and modern food systems as completely separate, there is evidence to suggest that there is considerable overlap. An integral, rather than dualist, approach to the study of food markets would explore such connections.

A traditional chains analysis would also require a better – and perhaps different–notion of value. Traditional supply chains have been regarded as a simple transfer of goods in which little value is added from one link to the other. While most producers, intermediaries, wholesalers and small retailers do not engage in conventional value-adding activities such as processing or transformation, they perform the critically important role of aggregating supply from spatially dispersed locations, and may even carry out some grading, selection and (re)packaging. Crucially, as has been argued above, these various links are able to supply the demand of low-income consumers. What is the actual value of these activities, and what is its relationship to the profits of these actors? How is value distributed along these largely informal chains, and what determines this

distribution? These are key empirical questions to which there are few answers. The study of these chains is not easy for a number of factors that have been discussed above, but difficulty is not a sufficiently good excuse. Traditional production and commercialization institutions form a complex and sophisticated network that offers high possibilities for research and action.

As part of the globalization process, the past decades have seen a rapid rise of multi-national supermarket chains in the developing part of the world (Reardon et al., 2003).

Empirical analyses find that farmers supplying supermarkets are relatively more productive, but many farmers are excluded from the supermarket supply chain due to capacity constraints in production and marketing (Hernandez et al., 2007; Neven et al.,2006).

Supermarket expansion not only affects farmers in the supply chain, but also the rest of the food retail sector. Traditional retailers face extra competition and potential loss of market share, but may benefit from foreign supermarkets through spillover effects of the latest retail techniques. Large supermarket chains are also likely to affect the average retail prices in the markets they operate. These issues are studied by Basker (2005, 2007)

There is a growing empirical literature indicating that supermarkets impose a positive productivity effect on farmers in their supply chain. Based on field interviews with supermarkets and a farm survey among tomato growers in Guatemala, Hernandez et al. (2007) find that farmers who are supplying supermarkets both had more irrigation initially and also invested more in irrigation over time than farmers in the traditional channel. This has further implications for productivity. Labor productivity is about 70% higher among supermarket-channel farmers than among farmers that supply traditional retail (Neven et al.2006).

In Latin America the average supermarket share of total food sales increased from 10–20% in 1990 to 50–60% in 2000 (Reardon and Berdegue, 2002). The expansion of supermarkets in Asia has in general been similar to the Latin American case, but the take-off started five to seven years later (Reardon et al., 2003). According to Dries et al.

(2004) the supermarket share in Central and Eastern Europe grew from about 5% in the mid 1990s to 40–50% in 2003 in "first-wave" countries (Poland, Hungary, the Czech Republic), to 20–40% in "second-wave" countries (Croatia, Romania, Bulgaria), and to 10% in "third wave" countries (Russia). The rise of supermarkets in Africa is driven by Kenya and South Africa, but is gradually spreading to poorer countries as well. In both Kenya and South Africa, the supermarket sector has grown rapidly since the mid 1990s and accounts for about 20% and 55%, respectively, of food sales in 2003 (Neven and Reardon, 2004, Weatherspoon and Reardon, 2003). Based on an estimated relationship between the share of supermarkets in food retail and its main drivers of change, Traill (2006) offers projections of the spread of supermarkets to 2015. The results suggest that the supermarket expansion will continue, but not at an explosive rate.

There is no consensus in the empirical literature on whether the agricultural sector benefits from the presence of supermarkets. Empirical analyses find that supermarkets represent both opportunities and challenges for local farmers. Their contribution is the construction and calibration of a Ramsey growth model to identify the consequences of supermarket expansion for agricultural productivity and structural change. The methodological approach clarifies the underlying adjustment mechanisms involved, and allows for endogenous interaction between agricultural productivity and supermarkets' dependence on local suppliers. Numerical simulations show how the two-way relationship between supermarkets and local farmers acts to reinforce dynamic processes, either decreasing the chances of escaping a low productivity trap or strengthening technological catch-up. This kind of model simulation supplements econometric analyses that struggle with causality issues and are unclear about the channel of effects (Stokke, 2009).

Our incorporation of the productivity linkage between supermarkets and local farmers offers a possible interpretation of the conflicting results in the empirical literature: depending on the extent of local constraints related to production capacity and market access, farmers either benefit from supermarkets through productivity spillovers and increased demand, or they get stuck in a low productivity trap with limited interaction

with the supermarket sector. Supply chain development initiated by supermarkets can help farmers escape the low productivity trap.

Supermarkets face a short-run cost, but gradually benefit from the agricultural skill upgrading in terms of increased market share. Our result suggests that when farmers do not meet the required standards, supermarkets have an incentive to invest in farm assistance programs that improve the productivity of local suppliers. The main findings in the simulation analysis are consistent with case studies in the literature. This analysis has focused on the potential productivity gain from delivering agricultural goods to multinational supermarket chains. Of course, other factors than the productivity linkage might be important to identify the full effect of supermarket expansion on local agriculture. Future research should take other potential mechanisms into account and quantify the relative importance of the productivity channel.

Although Turkish agriculture has experienced several periods of restructuring in its history (Aydın, 2010), one of the most significant occurred at the end of the 1990s.Turkey's entry into a customs union (CU) with the European Union (EU) in 1995 and the subsequent signing of a bilateral trade agreement in 1998 began a process that is transforming Turkey's agriculture from a reliance on subsistence crops to an emphasis on market-oriented fruits and vegetables production. Since 2001, this shift has been articulated systematically via a loan agreement into what the World Bank (WB), in its *2008 World Development Report*, called a 'new agriculture' (World Bank, 2007).The report identified market-oriented agriculture as central to the economic growth of the global south countries. It advocated for small growers to become linked to supermarket-led agri-food processing and supply chains by increasing their productivity and efficiency, thereby repositioning them to participate more competitively in the process of domestically and internationally tradable food production (World Bank, 2007).

There are two sides to the market intensification of Turkey's agriculture: one concerns the historical centrality of small-scale production directed towards local–regional consumers; the other relates to the increasingly dominant role played by supermarkets

through the expansion of agro-industrial food production and supply chains aimed at distant consumers. The expansion of supermarkets into agriculture changes the conditions of subsistence by creating WhatIllich (1981) calls a 'commodity-intensive society' – where 'needs' are increasingly defined and met in terms of mass-produced packaged goods and services.

Bennholdt-Thomsen and Mies (1999) define 'self-reliance 'and 'self-sufficiency' as key elements of the subsistence concept in which agricultural production is a means of existence at the local level. Here, production is often small-scale. It is well known that small-scale production can rarely sustain the self-sufficiency of rural households. Small producers engage in a variety of non-farm economic activities to secure a livelihood, and the modes of sustenance that typically prevail in rural areas are highly diverse (Bernstein et al. 1992). Still, small-scale agricultural production remains the dominant form for acquiring locally based subsistence food. The 'classic' literature on the 'agrarian question' regards small agricultural producers as 'peasants' (Shanin, 1971). Peasants primarily have access to land that is either owned or rented. They generally control their means of production and, with the help of simple equipment and family labour, aim for subsistence before producing for sale on the market (Wolf, 1966).

The literature addresses the continuing usefulness of the concept of peasantry in relation to the dispossession and differentiation of agricultural producers under the general class transformation processes of capitalist accumulation (Bernstein, 2006). McMichael (2008a) redefines these processes as being governed by supermarket-driven corporate agriculture.

Keyder andYenal (2011) argue that 'the core of the *differentia specifica* of peasanthood' has been undermined in Turkey since the beginning of state-led developmentalism roughly between the 1930s and the 1970s. Under current market-oriented economic restructuring, small producers are increasingly integrated into corporate agri-food systems, bringing about a rapid de-peasantization of the population. However, according to Keyder and Yenal (2011), these developments have not translated into a more

permanent *de-agrarianization*. Small-scale commodity production still prevails in the more commercialized coastal strips of southern and western Turkey, while a 'traditional' peasantry persists in the subsistence-oriented eastern and south-eastern regions.

On the other hand, supermarkets represent a commodity-intensive productive order. They embody a unified notion in the production, supply and consumption of food through market access, and are now increasingly dominant in the commercialization of food processing and supply chains (Burch and Lawrence 2007). The number of supermarkets has grown rapidly in countries of the global North since their first inception in the United States of America (USA) in the early 1900s. Supermarkets have also spread widely in countries of the global South since the 1990s, albeit at different rates and to a different extent across regions and countries. Wal-Mart from the USA, Carrefour from France, Tesco from the United Kingdom (UK) and the Metro Group from Germany are among the largest international food retailers. In Turkey, supermarkets began to proliferate in the late 1980s. Initially, they worked through the market consolidation of joint ventures by Turkish holding-company conglomerates with transnational food retailers, but since the 1990s this process has accelerated with the rising number of Turkish-owned local supermarkets.

Research on food provisioning generally examines supermarkets in multiple dimensions, including trade liberalization, marketing, food processing, genetic modification in agriculture, environmental consequences of new technologies, food safety, and nutritional problems and health concerns (Dixon, 2009; Marsden and Murdoch, 2006). Supermarkets are also examined with a particular focus on the transformation of agri-food systems. This research reveals that under the growing influence of supermarket-led agri-food capitals, there is a shift from subsistence to luxury food production, which tends to cut off small farmers from local and regional markets. It is noted again that supermarkets exert a major influence all over the world on the normative shaping of beliefs about the production, distribution and consumption of food. These changes undermine diversity in local farming systems and food sourcing in diets, while paving the way to corporate control over food supply chains through the highly monitored and controlled industrialization of agriculture (Jansen and Vellema, 2004). Research also shows that,

having shifted from food retailing to food production, supermarkets are actively re/constructing taste through new kinds of manufactured ready-meals. Branded under supermarkets' own private labels, these rationalized meals represent increased inter-firm integration in food provisioning among retailers, biotechnology companies, food-brand manufacturers, suppliers and farmers (Harvey, 2007). These developments underscore the important global processes of capital accumulation that affect food-provisioning systems by incorporating some large farmers while marginalizing and dispossessing many small producers throughout the world (Magdoff et al. 2000).

In the Turkish experience, research on supermarket expansion in food relationships largely focuses on trade liberalization and transformation in foodstuff retailing as associated with marketing structure and market capitalization (Özcan, 2008). Some scholars also examine the market access of growers and business dynamics of supermarket supply (Codron et al. 2004; Lemeilleur and Codron, 2011).They identify the existing links between supermarkets and small producers as weak and suggest the need for improvement in marketing structures.

Atasoy (2013) identified a lack of systematic research on supermarket-led changes in Turkey's agri-food system. In the absence of such research, it is difficult to assess the impact of these changes on production and consumption, land use and class relations, which have historically been tied to traditional ways of organizing food-provisioning activity. Food provisioning as a whole includes producer–distributor–retailer relationships. In Turkey, the traditional food provisioning system consists of small-scale agricultural producers,2 small independent family run retailers, wholesalers, traders and neighborhood-based street markets (known as *pazar*).The shifting relations of food provisioning under the recent expansion of a supermarket model remain a largely neglected area in social-science research in Turkey.

In this paper, he considered the changing conditions of food provisioning as small producers are increasingly integrated into commercialized agri-food supply chains led by supermarkets. Supermarkets are establishing direct linkages with farmers in most areas of

the world through formally established ‘contract farming’ (Watts, 1990), informally applied ‘implicit contracts’ and ‘preferred supplier lists’ (Reardon and Timmer, 2007). However, their localized effects on small-scale production are open to debate (Reardon et al. 2009).

Research shows that small producers prefer contract farming, which they view as a viable survival mechanism to gain market access for their produce (Echanove Huacuja, 2006). As state-protected agriculture is gradually being dismantled, contract farming also offers an alter-native for financing and technical assistance (Ulukan, 2009). Small producers participate in supply chains largely because of their capacity to absorb risks due to the use of family labor, a flexible production structure, access to off-farm income and product diversification, which complements their subsistence needs (Keyder and Yenal, 2011). However, Challies and Murray (2011) point out that small producers’ involvement with supply chains increasingly depends on their capacity to comply with retailers’ quality standards. Yet, recent research indicates that these often mandatory standards have not resulted in uniform impacts or responses across the agri-food system (Tennent and Lockie, 2011). Different types of supply chains also coexist (Pritchard et al. 2010). In light of these competing interpretations, it is more pertinent to be context-specific about the ‘power’ of supermarkets in reorganizing supply chains (Morgan et al. 2006). Even if supermarkets are becoming dominant globally, their influence across the agrifood sector may take a variety of forms.

In Turkey, existing research overlooks the transformative effects of supermarkets on supply chains, including the implementation of technical norms, private grades and quality standards, inspection, auditing and certification measures. Although sugar-beet production has been under contract farming since the beginning of the sugar industry in 1926 (Rehber, 2000), contract farming for international processing companies and domestic exporting firms has only recently begun in tobacco, sunflower and corn seeds production. There is contract farming also in tomatoes, partly for export but mostly for the domestic processing industry (Ulukan, 2009).

Lemeilleur and Codron (2011) point out that fresh fruits and vegetables are supplied to supermarkets mainly through wholesale markets without contracts. Although some producers have contractual ties to supermarkets through their own producers' unions (Lemeilleur and Tozanlı, 2007), this is not common.

Atasoy (2013) pointed that 'traditional' wholesale markets are being restructured with the emergence of wholesalers specialized in particular produce categories. These wholesalers source fresh produce for supermarkets from small-scale producers. Small producers' compliance with retailers' standards is also addressed through the interpersonal dynamics of wholesale markets. Standards, and the grades used to implement them, together with 'third-party certification' (TPC), are increasingly utilized by supermarkets and industry groups.TPC is a standards audit mechanism used by independent auditors for verification of compliance, as exemplified by the GLOBAL-GAP (Global Partnership for Good Agricultural Practice) (Bingen and Busch, 2006).Such certifiers protect supermarket chains from the vicissitudes of open markets (Busch, 2010).

In Turkey, small-scale producers remain independent and family-run. They often lack reliable information on a diversity of quality standards, grades and certification means, types and amount of inputs to be used. They also lack the infrastructure, technology and capital necessary for cooling, storage, sorting, packaging and transport requirements (Biles et al., 2007).

However, compliance with quality standards and consistency of supply from a relatively high number of small-scale producers is assured by market-coordination arrangements with intermediary wholesalers, traders and various other private suppliers. In addition to their institutional position in traditional food retailing, intermediary merchants contribute to supermarket expansion in rural areas through the interpersonal dynamics of credit supply and trust-based quality assurance, drawing on the long-established reputation of growers rather than written contracts. This process indicates a relatively low level of vertical integration of small-scale producers into supply chains. Research confirms that

similar patterns are observed in many other countries in the global South (Hueth et al., 1999; Pritchard et al., 2010).

Rajkumar (2010) focused on distance traveled by fresh vegetables from farmer's location to consumers in traditional and organized retailing. They focus is on the five fresh vegetables and final consumer destination is the city of Chennai. The research was primarily exploratory in nature and research instruments were include interviews and survey through questionnaire with players in the fresh vegetable supply chain viz agents, auctioneers, wholesalers, traditional retailers, organized retailers and customers. Additional data collected thorough secondary source, existing literature on Indian retailing. 'Food miles' is relatively recent concept in the fresh vegetable retailing. Entry of organized retail to India and its exponential growth, specifically in fresh vegetable marketing, has influenced the whole spectrum of supply chain practices. Shorter food miles is an indicator of near sourcing and longer food miles of fresh vegetables is an indicator for agricultural outsource. The result of this study reveals that significant increase in miles of food in case of organized retailers. The capitalization of emerging opportunity by the agribusiness is shift towards outsourcing of agriculture.

Rajkumar and Jacob (2010) reported the finding from the study on business models of vegetable retailers, in both organized and unorganized retailing. Entry of organized retail in India in vegetable marketing has impacted the whole spectrum of supply chain practices. This research is exploratory and includes research instruments like interviews and survey through questionnaire with players in the vegetable supply chain. Organized retail trade has increased the transport of vegetables from cultivation to ultimate consumption. Measuring food miles is a simplistic concept relating to the distance food travels as a measure of its impact on business. This study focuses on the concept of measuring the food miles in the retail vegetable markets of Chennai.

Arumugam et al. (2010) examined the factors that lead farmers to participate in the contract farming in the Peninsular Malaysia. The primary data was collected through a survey using a questionnaire on the total of two hundred and eight farmers from various states in Malaysia. The study utilizes the stratified sampling method. Both descriptive and

inferential statistics were used to analyze the data. The survey identified forty-one contract farmers. Factor analysis was carried out to identify the factors that lead farmers to participate in the contract farming. Based on the analysis, five factors were identified as the reasons for contracting, namely, market stability, and access to marketing information and technology, transfer of technology to improve farming practices, access to inputs and indirect benefit. Contract farming or contract arrangements can be a valuable source of an additional income that can be employed to enhance the productivity of the entire farming enterprise.

Voss (2013) explored the differences in preferred supplier choice criteria between food purchasing agents who focus on supplier security and those does not emphasis on supplier security. Moreover, he determines the relationship between purchasing agents' supplier security preferences and their preferences for product price, quality, reliability, delivery and supplier location. He also explored the influence of international sourcing on demand for increased supplier security. For analyzing data, he introduced conjoint analysis and t-tests. He basically focused on international procurement and global sourcing.

Some recent studies provide evidence for the coexistence of traditional and modern food retail formats. Goldman et al. (2002) explain food retail modernization in Hong Kong, and Goldman and Hino (2005) analyze the state of modernization of food retailing serving the Israeli Arab population. Both of these studies are based on consumer surveys where consumers are no longer restricted by socioeconomic factors. These studies identify a tendency to purchase perishable food items in traditional outlets, and they identify the greater distance to travel to reach supermarkets to be the main limitation on supermarket share growth.

Waarden and Benavent (2009) investigated that in the retail sector, consumers typically patronize multiple outlets for a variety of products, which raises the important issue of how outlets can gain a greater share of consumer expenditures. One such way is to increase repeat purchases through loyalty programs. This article examined the impact of loyalty programs, which target grocery stores existing customers, on their repurchase

behavior. It finds that heavier, more frequent customers of a store enroll in the loyalty program earlier; that buying behavior changes only slightly after buyers join the program; and that small change in loyalty appear to erode 6–9 months after buyers join.

Chowdhury et al. (1998) frequent measured store image by means of structured scales. Some researchers encouraged not to use of structured scales for the measurement of this construct and recommend the use of unstructured measures instead. They argue that structured scales are inadequate for capturing the "gestalt" associated with the perception of a store image. This research attempts, for the first time, to investigate empirically the relative efficacy of the structured scales and the unstructured measures of store image. The results shown that the two types of measures have similar properties and that the structured scales are more correlated with a set of self-reported behavioral measures. Thus practitioners would feel more comfortable utilizing structured, semantic differential scales to assess their store image.

Maruyama and Trung (2006) linked the perceptions of Vietnamese consumers to the prospects and barriers related to the development of supermarkets in Vietnam by applying quantitative and statistical analysis to Hanoi consumer survey data. It is found that shopping habits related to the purchase of fresh produce in traditional markets, combined with the proximity and low prices these outlets provide, act as a major deterrent to supermarket development. Supermarkets have made remarkable advances in the sales of processed food and non-food products. However, without expanding their fresh food category, enhancing their location convenience and lowering prices, supermarkets cannot expand their current position.

The production of most agricultural products is affected by a lot of external factors, which are not in full control by the supply chain members. The situation is further complicated by the fact that there is a long lead time in the production of agricultural product. On this regard, Samuel *et al*. (2008) examined contract practices between suppliers and retailers in the agricultural seed industry. Cai *et al*. (2013) considered a supply chain in which a fresh-product producer supplies the product to a distant market,

via a specialized third-party logistics (3PL) provider, where a distributor purchases and sells it to end customers.

Roekel *et al.* (2002) Supply chain of any products is a management with integral approach in which partners (say growers, suppliers, retailers, and customers) jointly have to have target plan and control the flow of goods through different nature of intermediaries to the final consumers in the market. Lambert and Cooper (2000) stated the aim of supply chain management is coordination of production processes. As it's a complete integral approach of production and distribution to the final consumers, so it should have relationship between producers, intermediaries and consumers in the chain.

Hsiao *et al.* (2010) Product assortments have enlarged dramatically and it has been increasing day by day to fulfill the requirements of market which are product quality, traceability, delivery services and sustainability. So, the products which are produced in the agricultural field need to be distributed in a proper cost-effective and legal way to the retail market through intermediaries. The process of distribution is not so simple as because there have lots of difficulties for managing the products supply with good quality and competitive price in market. As there have lots of different considerable things in the supply chain so this study will be investigating the problems and relationship between producers, intermediaries and customers of supply chain.

The value chain includes the entire range of functions which are required to bring a product or service from conception, through the different phases of production and distribution to final consumers (Porter, 1980; Kapilinsky and Morris, 2000). Value-chain analysis focuses at every stage a business starts from suppliers to the end-user (Investopedia, 2011). The goal of the value chain is to provide maximum value with minimum possible total cost. Market chain analysis aims to provide information to the various agents of the market chain (Ferris *et al*. 2001). Economic value chain analysis explains the range of activities required bringing a product to the final consumer and, for international products it explains the amount of return intermediaries/agents gain from

participating in the chain (Jacinto, 2004). A traditional food industry value chain consists of the producer, processor, wholesaler, exporter, importer, retailer and consumer.

2.2 Supply Chain and Information Technology

Hong et al. (2010) examined the use of specific supply chain information technologies (IT) for e-commerce, e-procurement, and enterprise resource planning (ERP), when implementing lean practices to achieve mass customization (MC). They suggested that lean practices can reasonably predict MC performance. They also suggested that e-commerce use is a better predictor of performance than ERP or e-procurement for service focused manufacturers. E-commerce and e-procurement appear to be good predictors of MC performance in product manufacturers.

Ali and Kumar (2011) analyzed the role of information delivery in enhancing decision-making capabilities of Indian farmers through information and communication technology (ICT). Users of e-Choupal show significantly better decision-making aptitudes than the non-users, on various agricultural practices across the agricultural supply chain. Further, socio-demographic backgrounds of the users such as education levels, the social category they belong to, income levels and landholding size also play a significant role in impacting decision-making aptitudes. The impact is particularly prominent in production planning and post-harvest and marketing related decisions. Policy implications of these findings are discussed. The study emphasizes the importance of designing ICT enabled information systems to suit the socio-demographic profile of the user groups.

Johnson et al. (2007) analyzed the drivers and outcomes of e-business technology use in the supply chain. Using a combination of case studies and survey data from a diverse sample of industries, the research examines how industry context, firm characteristics and firm-level strategic resources, such as purchasing teams, influence the exploitation of e-business technologies and the relationship between e-business technology use and firm performance. Based on the summary of related literatures from transaction cost economics and the relational view of the supply chain, a two-dimensional framework for e-business technology is proposed with transactional and relational dimensions.

However, empirical analysis show that transactional technologies can be further subdivided into two factors: dyadic cooperation and price determination. Significant differences were found between these two dimensions in terms of their overall levels of adoption, with dyadic coordination being the most widely adopted. In addition, the development of strategic resources expanded, in particular internal and customer teams, the use of e-business technologies expanded. Purchasing organizational structure and its size also were positively related to the adoption of transactional e-business technologies. Finally, of particular importance to practitioners, e-business technologies targeted at decreasing dyadic coordination costs lead to improved financial performance.

Rahman (2003) discussed how Internet is being used in the management of various areas of supply chain. Ranganathan et al. (2011) focused on two main objectives – (i) to understand the key antecedents that affect the web enablement of SCM activities; (ii) to document the performance impacts of web-enabled SCM efforts. Based on a large-scale, questionnaire survey of North American organizations, we assessed the influence of six factors namely – supplier synergy, information intensity, managerial IT knowledge, interoperable IT infrastructure, perceived IT returns on investments (ROI) and formal governance mechanisms – on the extent of web-enabled SCM. The results of the study revealed a strong positive influence of information intensity, inter-operability, supplier synergy, managerial IT knowledge and formal governance mechanisms on the extent of web-enabled SCM. They also found a negative association between relative cost–benefit perceptions and the extent of web-enabled SCM. Further, we also found strong positive association between extent of web-enabled SCM and the benefits realized from SCM efforts. They discuss the implications of their results for research and practice.

Devaraj et al. (2007) hypothesized that while there may be no direct benefit of eBusiness technologies on performance, these technologies might support customer and supplier integration in the supply chain, which in turn might impact operating performance. To examine their hypotheses, they collected data from respondents who focused their responses to a single major product the process that manufactures it, a significant customer, and an important supplier. Their analyses showed that there was no direct benefit of eBusiness technologies on performance; however these technologies supported

customer integration and supplier integration. Further, supplier integration was found to positively impact on quality, flexibility, cost, and delivery performance; however there was no relationship between performance and customer integration. Consequently, there is a relationship between supplier integration and eBusiness technologies that leads to better performance. Further, there is an interactive effect between customer integration and supplier integration that supports the idea that firms that have both forms of integration, supported by eBusiness technologies, significantly outperform the others.

Zhou and Benton (2007) showed that (1) effective information sharing significantly enhances effective supply chain practice; (2) supply chain dynamism has significant positive influence on effective information sharing as well as effective supply chain practice. Supply chain dynamism has more influence on information sharing than supply chain practice; (3) and when the level of information sharing increases effective supply chain practice becomes more important. The findings show that both effective information sharing and effective supply chain practice are critical in achieving good supply chain performance.

Kroes and Ghosh (2010) evaluated the degree of congruence between a firm's outsourcing drivers and its competitive priorities and assess the impact of congruence on both supply chain performance and business performance, using empirical data collected from manufacturing business units operating in the United States. They find outsourcing congruence across all five competitive priorities are significantly and positively related to supply chain performance. They also find the level of supply chain performance in a firm are positively and significantly associated with the firm's business performance.

Cao and Zhang (2011) examined that supply chain collaboration improves collaborative advantage and indeed has a bottom-line influence on firm performance, and collaborative advantage is an intermediate variable that helps supply chain partners to achieve synergies and create superior performance. A further analysis of the moderation effect of firm size reveals that collaborative advantage completely mediates the relationship between supply chain collaboration and firm performance for small firms while it partially mediates the relationship for medium and large firms.

Rexhausen et al. (2012) examined the relative impact of relevant practices associated with demand and distribution management. They also collected data from 116 multi-national companies based in Europe and analyzed it using structural equation modeling techniques. The results of the study suggest that (i) high demand management performance has a substantial positive impact on the overall supply chain performance, (ii) this effect is stronger than that of distribution management performance, and (iii) there is no evidence that demand management might be an enabler for effective distribution management.

Amrani et al. (2012) investigated by simulation that the sensitivity of the supply chain's performance to the variations of two main supply commitments negotiated by contract: frozen horizon and flexibility rate. Each partner belonging to the SC of the OEM (Original Equipment Manufacturing) performs its own production planning process. A generic analytical model was proposed and applied to simulate the decisional behavior of each partner in planning its production activities. Contractual constraints (resulting from supply contracts) are formalized and incorporated into the model to allow the study of their impact. Experiments conducted through a mobile phone SC case study confronted with market fluctuation. The performance of a partner and a SC is assessed via different indicators, mainly the cost and the reliability. The computational results address some managerial findings that are useful in defining an interesting supply contract along the SC to achieve global performance.

Cho et al. (2012) developed a framework of service supply chain performance measurement. Based on the strategic, tactical and operational level performance in a service supply chain, measures and metrics are analyzed. The emphasis is on performance measures dealing with service supply chain processes such as demand management, customer relationship management, supplier relationship management, capacity and resource management, service performance, information and technology management and service supply chain finance. And to prioritize service supply chain performance measurement indicators to improve service supply chain performance, a methodology based on the extent fuzzy analytic hierarchy process is stressed. The

developed framework of service supply chain performance measurement is applied to the supply chain of hotels. The results of this study are useful both for the practitioners in the service supply chain and for researchers carrying out further studies in the field. Akkermans et al. (2003) conducted 23 Dutch supply chain executives of European multi-nationals. Findings from this exploratory study were threefold. First, our executives have identified the following key SCM issues for the coming years: (1) further integration of activities between suppliers and customers across the entire supply chain; (2) on-going changes in supply chain needs and required flexibility from IT; (3) more mass customization of products and services leading to increasing assortments while decreasing cycle times and inventories; (4) the locus of the drivers seat of the entire supply chain and (5) supply chains consisting of several independent enterprises. The second major finding is that the panel experts saw only a modest role for ERP in improving future supply chain effectiveness and a clear risk of ERP actually limiting progress in SCM. ERP was offering a positive contribution to only four of the top 12 future supply chain issues: (1) more customization of products and services; (2) more standardized processes and information; (3) the need for worldwide IT systems; and (4) greater transparency of the marketplace. Implications for subsequent research and management practice are discussed. The following key limitations of current ERP systems in providing effective SCM support emerge as the third finding from this exploratory study: (1) their insufficient extended enterprise functionality in crossing organizational boundaries; (2) their inflexibility to ever-changing supply chain needs, (3) their lack of functionality beyond managing transactions, and (4) their closed and non-modular system architecture. These limitations derived from the fact that the first generation of ERP products has been designed to integrate the various operations of an individual firm. However, in modern SCM, the unit of analysis has become a network of organizations, rendering these ERP products inadequate in the new economy.

Lee et al. (2011) examined coordination problems and corresponding incentive mechanisms between a manufacturer and a retailer for jointly investing in a new technology that has the potential to improve the efficiency and security of the supply chain. They show that depending on the relative strength of the efficiency and security

concerns, supply chain stakeholders in a decentralized supply chain face two different coordination problems in investing in the new technology: (1) when security concerns are not strong enough to dominate efficiency concerns, stakeholders may not have a sufficient incentive to invest; therefore, at least one stakeholder under invests. Their analysis shows that internal incentive mechanisms, such as investment cost sharing between stakeholders, are not likely to resolve this underinvestment; instead, external financial incentive mechanisms, such as tax incentives, need to be considered. (2) When security concerns are strong enough to dominate efficiency concerns, stakeholders may not invest because of the uncertainty of other stakeholders' behavior, rather than the lack of an incentive to invest in the technology. Their analysis shows that external interventions, such as imposing a penalty for a breach of security, can be used as a way of decreasing such behavioral uncertainty.

Supply chain management is a powerful tool to achieve this collaboration. Through supply chains, producers in developing countries and emerging economies can access market information and knowledge to hone their value-added activities (Handfield, 1999). Developing cross-border supply chains is complex, however, and requires information and expertise about how to build chains, as well as communication and commitment from all the chain partners (Boehlje, 1998). The advantages of supply chain management are numerous, like the reduction of product losses, increase in sales, reduction of transaction costs, a better control of product quality and safety and the dissemination of technology, capital and knowledge among the chain partners. Supply chain management tools have been developed and implemented throughout the chain to guarantee optimal chain performance.

Agri supply chains may include growers, pickers, packers, processors, storage and transport facilitators, marketers, exporters, importers, distributors, wholesalers, and retailers. Supply chain development can thus benefit a broad spectrum of society, rural and urban, in developing countries (Farina, 2000).

In order to react effectively and quick to consumer's demand, supply chain management is consumer-oriented. It aims at coordination of production processes (Lambert and

Cooper, 2000). Supply chain management results in lower transaction costs and increased margins. Because of the many activities and aspects involved it demands a multidisciplinary approach and sustainable trade relations. Supply chain partnerships are based on interdependence, trust, open communication and mutual benefits.

A range of new supply chain management tools have been developed over the past decade. 'Efficient consumer response' (ECR) has been developed to increase the consumer orientation and cost-effectiveness of supply chains (Kurt Salmon Associates, 1993). New management systems have been implemented to improve logistics, increase the use of information and communications technologies and boost quality management.

According to Drickhamer (2002), the most obvious integration is that of the segments of the supply chain and the information that flows among the segments. However, there is another type of integration—the integration of the value chain. Traditionally, the supply chain has been thought of in terms of purchasing, transportation, warehousing, and logistics. The integrated value chain is a more encompassing concept. It is the process by which multiple enterprises within a shared market channel collaboratively plan, implement, and manage the flow of Goods, services, and information along the entire chain in a manner that increases customer perceived value. This process optimizes the efficiency of the chain, creating a competitive advantage for all stakeholders in the value chain. The supply chain is basically a description of flows and activities, but the value chain expresses the contributions made by various segments and activities to the profit and to customers' satisfaction.

2.3 Supply Chain of Agricultural Products

Mital (2008) on "Vegetables Production and Marketing" stated that in urban areas, an average middle class family consumes about 400 gm of vegetables in summer and 700 gm in winter. It spends about 20 percent of the total expenditure of food on vegetables.

Asian Productivity Organization (2007) on "Marketing System for Agricultural Products" indicated that the agricultural marketing system of Bangladesh is inefficient because of

the different territories, scattered location of production areas, natural disasters and relatively poor condition of infrastructure. The report suggested that two approaches should be adopted. First approach is the establishment of regulated markets which are setup to regulate the conduct of market functionaries, standardization of products and promote grading, collect and disseminate of information. The second approach is the establishment of central wholesale markets that will provide facilities for assembling large volume of products which are properly stored, graded and packed to facilitate their auctioning. The author also highlighted some major aspects namely infrastructure necessary for efficient marketing of vegetables. One aspect, the author mentioned, was the marketing arrangement in terms of extent of coercion exercised by marketing institutions.

Andersen and Buvik (2001) argued that Agricultural products' Supply chain development not only benefits the private sector but also creates spin-offs that stimulate social, economical and environmental sustainable development in the region (employment generation, added value, decreases of product losses, etc.). However, Buurma, J. S. et al. (2001) stated that Public support for the supply chain management of Agricultural products (e.g. development of the institutional infrastructure) plays an important role to create an enabling environment for private sector development. Public support might take the form of a public private partnership in a supply chain to share experiences, risks and bottlenecks. In developing countries and emerging economies, however, according to Seiofbluemountain (2012) supply chain development of agricultural products is often hampered due to lack of governmental support. International organizations can assist these governments to upgrade cross-border trade and to link national and international partners to jointly tackle cross border trade obstacles. Institution building, raising awareness, pilot chain projects and the development of a toolkit are important activities to foster supply chain development of Agricultural products.

Agriculture is the heart for the less developed economies, but the supply chain management for their agricultural products is less underlined. Based on a rational critique over the available models of supply chain management and the analysis of the

characteristics of agricultural products with coffee as a case, this paper develops a general model of the supply chain management for agricultural products by taking major variables into considerations (Jack et al., 2000).

2.4 Agricultural Marketing System in Bangladesh

Malakar (2006) in a study on "Agricultural Marketing Systems in Bangladesh" mentioned the constraints regarding the improvement of marketing performance such as preponderance of various marketing acts, poor infrastructure. The author mentioned that only farmers could not increase the efficiency for which government support and private firms' investment were also required. He mentioned there were some agricultural markets in Bangladesh from which agricultures were traded such as rural wholesale markets, urban wholesale markets, urban wholesale cum retail markets and urban retail markets which had little connection with market information system. Finally the author recommended that the marketing system of farm products in Bangladesh needed to be based on modern and scientific lines. Modern techniques like contract arming, development and modernization of primary markets, retail outlets should be introduced.

Asif (2010) in a study on "The Role of Agricultural Marketing in Living Standard of Bangladeshi Peasants" mentioned that in 2006—07 the agricultural labor force was 63 percent of the total labor force but the agriculture here is improvised by traditional methods that caused production limited. The farmers experience from number of difficulties which reduce their negotiating command such as a long chain of mediators operating between the primary producer and the ultimate consumer and inadequate storage facilities. For this reason, the living standard of peasants is deteriorating day by day.

Fazlur (2008) in a study on "Agricultural Marketing System in Bangladesh" highlighted the lack of market information as one of the reasons for the low price received by the growers. The author mentioned that public sector market information systems like Directorate of Agricultural Marketing, Directorate General of Food and the Food Planning and Monitoring Unit are not updated so the existence of these systems is not

much helpful for the farmers. The author also urged private enterprise to invest in this marketing system.

Ken (2009) in a study on "Agribusiness Management" mentioned that public intervention in agricultural field will decrease day by day because of budgetary constraints and changing political base. So farmers alone retain a vital interest in their long range future. The author mentioned that farmers operate at the end of the communications network, their information may be obsolete or filtered, their output is so small a part of the buyer's volume that withholding product for the market has little if any impact on price levels, and farm produces face a very inelastic demand so a small increase in supply leads to a large decrease in price for which middlemen can easily exploit them. The author suggested the establishment of vertical integration; i.e. the liking together of successive stages in the food chain to gain control over access to markets.

2.5 Supermarket in Bangladesh

Yasmin et al. (2005) attempted to make a comparison between traditional shops and supermarkets and also to examine how consumers' buying pattern changes day by day because of the emergence of supermarkets and what factors influence them to do shopping in these supermarkets. In another article, Yasmin et al (2006) attempted to detect the factors contributing to choose supermarket as their store format. Tinne (2011) attempted to find out the factors that affect consumer impulse buying behavior at superstores in Bangladesh. The impact of various variables like discount offer, display of product, promotional activities, retail store offer, behavior of sales person, popularity of product, influence of reference group, income level of customers and festival season, on consumer impulse buying behavior, has been analyzed. The study was based on the primary data collected from Agora and Meena Bazar with the help of structured questionnaire. Data analysis has been done using SPSS software. The statistical analysis method employed in that study is Factor Analysis. After the analysis, it was found that since income of individual is increasing and more and more people are moving towards western culture, the purchasing power of the people has really gone up. Thus the impulse

buying of the commodities is on a great rise mainly due to pricing strategies, store characteristics, promotional activities and situational factors. They addressed on consumer choice behavior in different super markets. They didn't address supply chain systems of vegetables of different supermarket in Bangladesh. Kashem (2012) identified the role of each of the factors to respond to customer requirements to satisfy customers and what and how they behave in the market place toward these factors. He collected data from 50 customers of 5 superstores in Chittagong. The result of that study shows that the factors have positive relationship with customer satisfaction those in terms ensure store loyalty.

Jahan and Noor (2012) investigated the factors that are assessed in evaluating the marketing activities of super stores in Bangladesh. They basically concentrated the preference of consumers. They identified on product's quality, pricing, distribution channels, promotional activities of "Meena Bazaar" The study revealed that Meena Bazaar promotes their products at premium price in order to maintain quality and their promotional programs have significant positive influence toward consumers' response. The findings of this study suggested that Meena bazaar should try to maintain this performance level and take more large scale promotional campaigns which will help them to achieve leadership position in supermarket industry in Bangladesh.

Khan et al. (2014) explored the success determinants of supermarket from the standpoints of both perceptions and expectations of the customers in the superstores in Bangladesh. An initiative was taken to extract the crucial factors affecting the service quality that are necessary to increase the customer satisfaction, ensure customer retention and to have a competitive edge. The study used SERVQUAL model to examine the service quality of several retail stores and explores the factors affecting the service quality. For conducting this study, 50 respondents in the Dhaka city were selected who are customers of the superstores. From data analysis it is found that significant gaps exist between the customers' perceptions and expectations in all the items under all of the dimensions of the chosen model. The highest gap exists in the dimension of assurance and second highest gap exists in the dimension of tangibles of the SERVQUAL model.

2.6 Vegetables Marketing in Bangladesh

The vegetable supply chain in our country is not effective where farmers of vegetables are always deprived of profit. Farmers in this chain face three challenges: financing crop production; poor yields; and losses due to the elements which reduce their bargaining power significantly (Parvez, 2009).

Sabur (1992) examined marketing channels, costs, and margins of various intermediaries involved in the marketing of important vegetables in Bangladesh. Arathdari commission comprises one fourth of total cost of marketing and about 93% of commission received constitutes profit of Arathdar. Cost wastage which is one seventh of product marketed accounts for 15% of total cost of marketing. Period wise marketing margin shows that the price elasticity of margin is less than one. On an average, producers receive about one half of consumers' price and which is identical to those of the developing countries in Asia. He addressed on vegetable marketing system in Bangladesh.

Karim et al. (2011) analyzed the comparative advantage of production and export of vegetables from Bangladesh. Fifty four types of different vegetables were exported from Bangladesh. Middle East was the most importing countries. The demand for summer vegetables was found higher compared to winter vegetables. Total export quantity was found 6046 metric tons of vegetables and earned Tk. 1120 million, which was only 1.18 percent of total value of vegetable production in Bangladesh. Air freight charges were highest among the export marketing cost items. Hoq et al. (2012) determined the value addition, return and cost of vegetables production and export at different levels and also suggested some policy implication for improving the present system. The study was based on both primary and secondary data. The sample included vegetables farmer, suppliers, and exporters. Vegetable farmers and suppliers were selected from Ulokhola of Kaligonj Upazila and exporters were selected from Dhaka city (Motijheel, Kakrail, Shantinagar, Khilgaon, and Sham Bazar).

Islam and Ahsan (2009) in a study of "Development of an Effective System for Vegetable Marketing in Bangladesh" investigated that the present market intelligence

system in Bangladesh is not yet well organized. Communication system to link wholesale and retail markets in different areas has not been strengthened. Transportation is still poor. The study observed that out of 64 field offices of Department of Agricultural Marketing only 24 have telephone lines where market information are sent mostly by mails. Farm level prices are broadcasted over radio once a week. Farmers do not get good vegetable seeds at the right time at a reasonable price.

Hossain and Arangzeb (2009) indicated that the present production is around one million tons per year of which 70 percent are produced in the winter season. Thus seasonal fluctuation in the availability of vegetables arises in the market. The authors mentioned that vegetable production is far below than the requirement in Bangladesh which leads to low consumption of vegetables because vegetables are considered as minor crop. The author also mentioned that production area and yield of different winter and summer vegetables have varied among different districts. Price variation exists during different months of the year. Price is always high during early harvested period and tends to decrease over time during peak harvest time. There is a big gap between growers market and urban retail markets. So, most of the benefits go to the intermediaries. The share in price received by the growers is about 49 percent. The authors suggested that farmers share can be increased by providing physical facilities and eliminating unnecessary and inefficient middlemen from the marketing channels.

Osmani and Hossain (2015) mentioned that vegetables have not yet attracted the attention of the public sector for a credit program. Credit is required for efficient production and utilization of vegetables marketing. Mostly it is traders who contract the farmers in advance and provide credit for vegetable production on the condition that products would be sold to them. It was observed by the study that traders pay less than the prevailing market price. The author also mentioned that in recent times, the NGOs (Non Government Organizations) concerned with agricultural activities are getting interested in vegetable production effort, and tend to fill in a gap lying between farmers, researches, extension works and in a matter of providing credit facilities.

Sharma et al. (1992) said potatoes growers cannot sell their potatoes to consumers directly. They need to go through supplier and supplier to consumer. Some value adders also get potatoes either directly or from supplier and finally sell their value added potatoes product to the market. It was found that the farmers are discriminated with the price in potatoes chain while other beneficiaries are not suffering with price. The price which was finally decided by the retailers depends on the production price, supplying cost and profit of supplier, retailers operations and profit and finally competitive environment in market.

2.7 Backward Linkage of Super Markets in Bangladesh

Bangladesh is a relatively new player in the world food retail scene and we have a lot to go. The future of Bangladesh modern food retail industry is promising. Adoption of Supply chain management practices in industries has steadily increased. To gain market competitiveness many firms are now paying attention on their supply chain to achieve noteworthy improvements. With the advancement of globalization supply chain has become longer on both input and output front. This makes supply chain management a challenging job when combined with increase in production of products.

Bangladesh is still known as an agricultural country. As a result, the superstores are flourished especially in metropolitan areas. When there is economic growth, the beneficiaries of such economic growth would have more disposable income. Such families will have exposure to new lifestyles through cable TV and experience such lifestyles and they at least feel that their children deserve to be exposed to such experience. It is not only the lifestyles that matters, growing awareness of health and hygiene issues, products and brands, the desire to maintain the right social status, the need for respect and dignity receive when they have to shop at the traditional wet market which comes with all the rude behave underweight of products and other discomforts are making more and more people move to superstores.

Taslim (2009) emphasized on the concept of 'backward linkage' in development literature. Commonly it is understood to refer to an industry that produces an output that is used as an input in the production of another output (it could also refer to positive externalities).

Reardon et al. (2004) mentioned that "Bangladesh is part of a fourth wave of supermarket diffusion that just barely has emerged in the last few years." The American researcher feels it is likely that the diffusion of supermarkets will be quite slow for the fourth wave, compared to the first three waves. The reason is that the key socioeconomic changes necessary for a change in the retail environment are happening in Bangladesh at a pace much slower than, for example, in India (Dieter Bachmann, 2008; BSOA, 2011).

The supermarket culture is playing a vital role in generating employment, with a single store providing jobs to around 50 people. The president of BSOA, Niaz Rahim said, "The massive expansion plan by various market players will open the door for more employment opportunities." Due to massive expansion of superstores, farmers will no more be needed to turn to the multi-level intermediation as they will directly contact the chain stores operators. "As a result, they will no more be cheated," Zakir Hossain, general secretary of BSOA, told the FE. (Munni, 2010[a]).

Organized retailers in the country are focusing more on strengthening their backward linkage supply chain, a challenge faced by retail chain shops for products availability. As the superstore concept is not very traditional the superstore biggies have failed to grow accordingly mainly due to proper and sufficient supply chain management, top retailers said. The most organized and disciplined retailers are trying to maintain their own supply chain management to bring fresh and quality products to the store in urban area from root level farmers directly (Munni, 2010[b]).

Value is added when products pass different stages and move from one intermediary to another. The different cost components required for successive movement of fish are transportation in Bangladesh, basket packaging, icing, wages and salaries, *aratdar*'s commission, house rent, security, electricity, telephone, personal expenses, tips-donation,

wastage, *dadon* cost, government taxation, subscription for cooperatives, export packaging. Another emerging new phenomenon in fish marketing in Bangladesh is the availability of fish in super markets. New super markets are not only confined in the capital city, its network is being expanded in many other districts of Bangladesh. The fish in the super markets are usually of better quality in terms of freshness and are chemical-free (Alam et al., 2012).

It is observed that many researches' have been conducted of agricultural products of superstores in international context. But there is very limited or insufficient research has been made in Bangladesh. It appears from the literature review that the supply chain management practices in Bangladesh are in growing stage.

2.8 Vegetable Marketing System of Supermarkets in Bangladesh

Iftekhar et al. (2016) identified the current phases of supply chain drivers for fresh vegetables in superstores. They also identified the pitfalls and obstacles in the existing drivers and distribution model of fresh vegetables in superstores. Moreover, they developed a supply chain distribution model for the superstores in Bangladesh for fresh vegetables. The study basically based on depth interview and they didn't introduce any questionnaire for that.

Thus it appears from the preceding discussion that the supply chain systems of vegetables of different supermarkets in Bangladesh have not been addressed in Bangladesh. It would, therefore, not be unjustified to claim that the present study is the first study of its kind in Bangladesh and can be used for guidelines for the similar studies in years ahead

2.9 Chapter Summary

Chapter two reviews extensively the literature regarding to supply chain of vegetables of supermarket, examines the marketing systems of supermarkets in different countries, IT and supply Chain with special reference to supermarkets, vegetable marketing system, and vegetables marketing system of supermarket in Bangladesh.

3.1 Status of the Retail Market in Bangladesh

Retail trade is a traditional business in Bangladesh. Its expansion is keeping pace with the country's population growth and changes in consumption patterns consistent with economic growth. This expansion has not been structurally organized. Until recently, retail had never been perceived as an industry, but rather as an individual or family business with a very limited scope for organized expansion. Little to no market information is available on the retail sector, though industry sources indicate that the size of the food retail sector in Bangladesh could have been $16 billion in 2010, and the number of retail grocery shops could number more than 1 million. Retail is a large source of employment in Bangladesh (12 percent), and together with wholesaling it contributed a combined 14.3 percent to Bangladesh's GDP in FY 2010/11. Retail and wholesale growth averaged over 7 percent in the last decade (Bangladesh Bureau of Statistics, 2011).

3.1.1 Types of Retail Shops

Retail shops in Bangladesh range from open-air temporary shops to well-equipped modern Supermarkets. The following classifications may be applied:

1. ***Open-Air Temporary Shops:*** These shops are the most traditional type of retail shops in Bangladesh, and they are visible both in rural and urban areas throughout the country. Primary commodities like fresh vegetables, fruits, fish and semi-processed homemade foods are sold in this kind of shop.

2. ***Roadside Shops:*** These small grocery shops are visible throughout the country. Roadside shops together with the open-air temporary shops constitute around 70 percent of the retail sector business. Typical floor space ranges between 30-100 square feet. Most village markets fall under this category. A few imported food items are available in these shops, mostly products from border-adjacent areas and low-quality processed products from China and India.

3. ***Municipal Corporation Markets:*** Shops in municipal corporation markets are arranged according to the kind of commodity they carry, such as fish, meat, vegetables,

fruits and groceries. These shops appear in the semi-urban and urban areas. Imported foods and processed food items are available but limited to those purchased by the middle class. This category represents about 22 percent of the food retail sector in Bangladesh.

4. ***Convenience Stores:*** Convenience stores are generally located in more affluent urban areas. Customers are upper-middle to upper-class locals and foreigners. These stores are major outlets for imported food items and high-quality local products, and they represent about 6 percent of the retail sector.

5. ***Supermarkets:*** These are the most recent additions to the retail sector in Bangladesh, where they began appearing less than 10 years ago. With the success of the pioneer supermarkets, this type of store already has attracted investors' interest, and new outlets are quickly coming into operation. At present approximately 200 supermarkets are in operation, of which around 40 are located in Dhaka. Supermarket turnover in food items is estimated at about 2 percent of food retailing (Hussain and Leishman, 2013).

3.2 Supermarket Retail Chains

3.2.1 The Growth of the Supermarket:

As of 2013, an estimated 30 companies operate about 200 supermarket-format retail outlets in Bangladesh. These chains are gradually gaining popularity among the urban population in major Bangladeshi cities. However, socioeconomic changes (e.g., rising per-capita incomes, increasing urbanization, and a growing number of women working outside the home) necessary for consumers to adopt supermarkets are proceeding more slowly in Bangladesh than in neighboring India and Sri Lanka. By comparison, Sri Lanka's population of 22 million shops at 240 supermarkets, while Dhaka's 15 million inhabitants do not yet enjoy even 50 such stores.

Rahimafrooz Superstores Ltd. opened Agora, Bangladesh's first supermarket chain, in Dhaka only in 2001 with four outlets, and in June 2013 opened its thirteenth outlet. In quick succession, Agora was followed by Nandan, initially with two large-format outlets, later to expand; then to contract back to two; and Meena Bazar with four medium-format

outlets, by 2013 having expanded to 18 (in 2013, Nandan sold two stores to Meena Bazaar). In 2008, ACI Ltd. launched its own retail chain, Shwapno (operated by the ACI Logistics Ltd. subsidiary), with 59 outlets in 16 district towns, including Dhaka and other major cities. By 2013, Dhaka had roughly 40 supermarkets, including smaller ones like Almas (4), Carrefamily (2), Pick & Pay (2) and Prince Bazar (2). In addition to Dhaka, these supermarkets are located in Chittagong, Sylhet, Rajshahi and Khulna.

3.2.2 Current Market Scenario

At a rate of 15-percent annual sales growth, about 30 companies with more than 200 outlets already ventured into the modern food retail industry in Bangladesh. The annual turnover for supermarkets now stands at around BDT 15.0 billion ($192 million), according to the Bangladesh Supermarket Owners Association (BSOA). BSOA data also indicate that the retail market, which currently is worth about BDT 747.50 billion ($9.6 billion), is growing at an annual rate of 14 percent and will reach BDT 1307.38 billion ($16.8 billion) by 2015 and BDT 3027.25 billion ($38.8 billion) by 2021. Industry observers believe the supermarkets will reach turnover of BDT 75.7 billion ($971 million) by 2015 and BDT 206.5 billion ($2.6 billion) by 2021 at an anticipated annual growth rate of 30 percent. This rise in the growth rate from 15 to 30 percent is expected due to changes in buying habits of Bangladesh's middle and upper classes, as well as government policies supporting growth of the supermarket segment, including repeal of the 30-percent tariff on imported cabinets, showcases, display counters, and refrigerators used in VAT-registered supermarkets. BSOA leaders also claim that they are offering a hassle-free shopping environment and hygienic commodities, thus earning the appreciation of middle- and upper-class consumers.

Organized retailers in the country currently are more focused on strengthening their backward linkage supply chain, a challenge faced by retail chains for managing product availability. The most organized and disciplined retailers are trying to maintain their own supply chain management to bring fresh, quality products from farmers directly to stores in urban areas.

3.2.3 Challenges

Supermarket attributes for their failure to grow rapidly is their non-traditional form of retailing and weaknesses in establishing proper and sufficient supply chain management in Bangladesh. Other major challenges that the supermarkets face include, but are not limited to, a narrow customer base, high tariffs on imported food products, a shortage of experienced manpower needed to run the outlets, the unavailability of retail spaces with appropriate sizes and locations, and the very high cost of capital. The existing policy discriminates against supermarket retail, as small shops have a reduced value-added tax (VAT) rate under the package system while supermarkets are paying 4% VAT.

Bangladesh has a mix of supermarket setups, with some providing the full supermarket layout (K- Mart, Shwapno, Meena Bazar and Agora) and others choosing a smaller layout. The larger markets have centralized procurement systems and preferred supplier

agreements to reduce supply chain uncertainty. Still, food retailing in Bangladesh generally has not gone beyond the 10,000 square-foot layout, about 10 times the size of a convenience store but 20 times smaller than hypermarkets prevalent in other parts of the world.

Moreover, the sustainability of supermarket retailing requires substantially more investment in cold chain capacity, food preservation and packaging, plus efficient transportation in order to reduce food wastage and losses. From 20 to 35 percent of fresh fruits, vegetables, fish and short-shelf life processed foods are wasted or lost in Bangladesh.

The supermarket companies have attempted a massive expansion to attract shoppers who still depend on wet markets to buy their daily essentials. In the past decade, many small and big supermarkets made their debuts, successfully attracting middle- and upper-middle class consumers. However, a majority of Bangladeshi customers will not change their shopping habits any time soon, meaning modern retail's consumer base is limited to the top 20% of the population, or about 30 million people. That said, while small relative to traditional unorganized trade in Bangladesh; modern retail is growing rapidly and over time has the potential to quintuple in size as its target customer base exercises disproportionately large (41 percent of total) buying power (Hussain and Leishman, 2013).

3.3 Key Players of Super Market

3.3.1 AGORA

In 1998, Mr. Rahim recognized that a gap existed in the Bangladeshi food retail sector. Despite the existence in Dhaka of a large, educated population, food retailing remained undeveloped, with the advent of modern supermarkets still to come. The Rahimafrooz business group, already diversified into the manufacture of acid batteries, cotton textile mills, and the distribution of tires, batteries, and accessories, felt that further expansion into a stable sector such as food retailing would be beneficial, and a chain of modern

supermarkets would both allow the company to take advantage of the gap in the retail food market and further diversify its business portfolio. After a year of careful consideration and informal market studies, Mr. Rahim hired some filmmakers, who produced a video that captured the great diversity in food retailing in Dhaka – from street-side vendors with their small quantities of fresh produce to the slightly larger outlets in the kaccha bazaar (local markets). The video proved what had been Mr. Rahim's suspicion: that while food was an important part of the consumer budget and a large part of the retail system, little had changed in the way business was done since he was a young man. He wondered how much of this lack of change was due to a lack of consumer demand and how much was due to simple inertia in the food retailing system.

3.3.1.1 Developing a Strategy

3.3.1.1.1 Assessing Consumer Demand

Because supermarkets are traditionally a high volume, low margin business, it was important to determine whether a modern business model was likely to succeed in the diverse world of food retailing in Bangladesh. According to government statistics, there were over 1.2 million households in Dhaka with an average size of 5.5 members (Bangladesh Bureau of Statistics, 1991). These numbers suggested that there were enough households to support a modern supermarket. The market classification also suggested that almost 20 percent of the households in Dhaka belonged to the top two income segments. A qualitative study involving focus group discussions and a limited number of in-depth interviews with selected families suggested that the average Bangladeshi consumer, even in the high income category, was unfamiliar with the concept of a supermarket. However, they were generally favorable towards the concept of a modern food retailing system with a large variety of good quality products available at reasonable and fixed prices, under one roof in a clean, hygienic, organized, and safe environment. Women, particularly housewives, found the prevailing environment in the Kaccha bazaars to be unsuitable. However, it was important to recognize that despite an overall acceptance of the modern food retailing concept, any new supermarket would have to offer quality products at competitive prices to induce consumers to switch from

their existing shopping patterns. This was particularly true for the daily necessities routinely purchased from kaccha bazaars.

3.3.1.1.2 Assessing Prices

Food represents the largest component of the household budget for the average Bangladeshi family. Even the highest income groups spend over 30 percent of their monthly income on food and beverages. The convenient, dense clustering of traditional grocery stores and vendors meant that consumers could easily check competitive prices during their frequent shopping trips. Mr. Rahim knew that any new food retailing venture had to be price competitive in order to create a level of consumer acceptance that would result in a profitable volume of business.

A competitive assessment done on selected products in different market areas revealed that the prices for the exact items differed among retail outlets, particularly when the stores were located in different parts of the city. For instance, prices were generally lowest at New Market and highest in the Gulshan-1 markets. Variations in a specific geographic area – within Gulshan-1 itself, for example – were relatively limited, suggesting the narrow band of consumer tolerance within which retailers had to price their products. This reinforced Mr. Rahim's perceptions about the importance of his new venture being price competitive if it was to survive. While assessing price differences, the Rahimafrooz investigators also noticed other interesting features about the prevailing retailing practices.

• Most of the packaged products were imported, and because there were differences in product specifications depending on the country of origin, it was frequently difficult for consumers to discern differences among products with the same general appearance and with common and familiar brand names.

• Product packaging was also highly variable, and retailers frequently carried goods with expired dates. The investigators were not sure whether consumers were knowledgeable about or cared about the expiry dates, or thought to check them when buying some of the products available in the market. The researchers also kept lists of the various products carried by existing retailers and their sources of supply.

3.3.1.1.3 The Ultimate Vision for Food Retailing

These initial assessments confirmed that Mr. Rahim had been correct in his belief that there was a unique business opportunity in the Bangladeshi food retailing business. However, he wanted to make an entry not just as another food retailer, but in a distinctly different format, one that would revolutionize food retailing in the country. Mr. Rahim felt that his supermarket should sell more than just quality food products; it should sell a broader shopping experience. To make his vision a reality, an operating philosophy was articulated that would shape all future business decisions. The Rahimafrooz vision promised that the new business venture would be "the most admired and trusted organization, by excelling in everything we do, following ethical business practices, and adding value to stakeholders."

Rahimafrooz Values included:

- Emphasizing integrity and excellence in all dealings
- Promising total commitment to customer satisfaction
- Thinking ahead and taking new initiatives
- Fostering a team spirit
- Instilling imagination and a sense of fun
- Constantly developing skills

To consistently provide a satisfying and valued shopping experience in a store that improved the quality of life for both customers and employees, the new business would have to be differentiated by its service, which would be "caring, helpful, friendly, professional, and the customers' most compelling reason to shop at Agora." This implied that everyone, regardless of his or her specific role in the organization, shared in the most important task of all, "solving our customers' problems." If successful, fulfilling that task would make the store's "on-floor service" not only the single most important activity in the company, but make Agora the most outstanding food retailing service in the subcontinent (Dholakia and Quader, 2004).

3.3.1.1.4 The Business Plan

Before the Agora project was implemented, a detailed business plan was written to ensure that the implementation would be well thought out and smoothly run. Major components of the business plan are defined below.

Strategy: The strategy behind Agora was in line with that of the Rahimafrooz group as a whole: to create the best long term value for all stakeholders, including customers, employees, suppliers, and others. The wider vision associated with this strategy was to change the quality of the shopping experience for consumers, create a good working environment for employees, and form mutually beneficial, long term partnerships with suppliers. Key characteristics of the strategy were its customer focus and the company's "total commitment to customer satisfaction." The benefits of this customer focus would exceed all expectations. Components of the business plan that demonstrate this obsession with customer service included:

• A Human Resources Department that would recruit, select, and train staff members who were customer oriented and displayed a high degree of customer care. This would require continuous staff training and development and the creation of a customer-oriented service culture.

•Operating procedures that would ensure a hygienic, comfortable, convenient, exciting, and friendly environment as well as a memorable shopping experience. This atmosphere would be supported by a stock of high quality products with reputed brands, carefully selected to offer customers total value for their money. It entailed setting new industry norms in standards of retailing and customer care and improving these norms continuously.

• Procurement practices that emphasized long term relationships with suppliers, developing them as partners who would share in this new effort to bring quality products to Bangladeshi consumers and ultimately develop new, local products for the market.

Lining Up Suppliers: The initial assessment indicated that Agora would need to be very selective about suppliers, so considerable effort was devoted to developing a plan to recruit, educate, and retain suppliers who would also become partners in the effort to

revolutionize retailing. An ad was placed to find such suppliers, to which over 500 people applied. They were supplemented by a list of potential suppliers compiled from the initial analysis of competitive retail outlets.

One-on-one interviews were conducted to screen these suppliers and generate a list of potential Agora partners. Formal presentations about the new store's business philosophy were made to suppliers who passed the initial screening. From the intensive discussions about mutual concerns that followed these presentations, the Agora managers learned that suppliers were most concerned about the timeliness of payments, since present practices usually involved long delays. Based on this consideration, a Purchase Request Purchase Order (PRPO) process was created to ensure that ordering and delivery of items would occur with minimal friction and the highest levels of consistency in quality of goods.

The primary distinction in these arrangements was Agora's approach to engage in ethical, long term partnerships with its suppliers. This meant:

- Ensuring cost competitiveness and quality by discouraging under invoicing, tampering with expiry dates, and other similar unethical trade practices;
- Ensuring consistency in product availability by encouraging and developing local suppliers of local products;
- Developing partnering relationships with suppliers by offering advice on food preparation and processing technology, packing, presentation, new product development and merchandising, as well as sharing inventory management information in terms of order projections, delivery schedules, forecasting, and information about promotional impact and product take-offs.

A written plan and oral communication was not sufficient, however, extra diligence was needed to ensure that Agora received "genuine" merchandise at competitive prices. Therefore, a product inspection and testing process was also put in place which suppliers had to accept in order to develop a relationship with Agora. For instance, suppliers of fresh meat products had to keep live animals at the slaughter house for at least seven days before slaughter to ensure they were free from disease. Inspectors personally visited slaughter houses, and other inspectors and food handlers were trained to inspect the meat again after delivery. The color of the blood and the muscle structure was inspected to

make sure it was cattle, not buffalo meat. Perishables such as vegetables, fruits, and fish were delivered daily and unsold merchandise was returned to the supplier. For packaged food and other products, similar inspections were made to ensure the products received were genuine.

3.3.1.1.5 Marketing Strategy

Products: Product decisions were based on an analysis of product ranges at existing retail outlets. A mix of local and international brands was maintained to ensure that customers found the variety of items they required to meet their needs. Overall, the strategy was to promote local brands because they were easier to procure and there would be fewer problems of tampering with expiry dates. It was also recognized that in the initial years, the expected volume of sales would not justify the direct import of international brands, but every effort would be made to ensure that Bangladesh was not used as a "dumping ground" for inferior foreign products. While screening for quality sometimes led to limiting the product range, the emphasis on quality was never to be compromised.

Prices: The strategic importance of competitive pricing was recognized very early in the planning process. Supermarkets are generally low margin businesses that rely on high volumes to be profitable. While supermarkets were a new and unfamiliar concept in Bangladesh, qualitative research suggested that consumers associated them with higher prices because of the new and unfamiliar retail features. Therefore, it was critical to be price competitive from the beginning to ensure that new customers did not feel that Agora's products were beyond the reach of their pocketbooks.

To ensure such competitiveness, it was decided that regular monitoring of prices for a typical basket of goods was necessary. The specific items in the basket varied by season, but included those that were likely to be in demand for the particular week being surveyed.

Place: The plan involved opening four supermarkets in the first two years of operation. Each supermarket was to have at least 7,000 square feet on a single floor with adequate

parking. Market demographics suggested that Dhanmondi, Gulshan, Shantinagar, and Uttara, with their high concentrations of middle to high income households, were likely locations for the first new supermarkets. Gulshan, with its high concentration of affluent and foreign households, was considered likely to be immediately successful, while Shantinagar, with a more middle class profile, would hold promise for future success. Mr. Rahim considered the Shantinagar store to be strategically important because success in this very middle class area would suggest a broader and larger potential target market.

Availability of real estate that met the site location criteria dictated that Dhanmondi be the first Agora location. Dhanmondi had several advantages – a high population density, the presence of smaller modern food retail outlets, and middle to higher income groups. Gulshan would be the second location.

Promotion: While price competitiveness was a key strategic decision, Agora's difference was not going to be based on low prices but on the "total shopping experience" it promised. Therefore, sales promotion incentives such as bonus offers, coupons, and raffles were encouraged over price discounts to contrast Agora from supermarkets such as Nandan and Meena Bazaar, which emphasized price more than value or incentives.

The advertising and communications budget comes from a fixed percentage of monthly sales and revenue from the rental of in-store space and in-store promotions by product manufacturers and distributors. This budget is shared by the marketing department, which is responsible for media advertising, and the store managers, who are responsible for store promotions. Media advertising in newspapers and on billboards is handled by an outside advertising agency. Weekly schedules are created for print advertising. For instance, the first and last weeks of the month, known as "value weeks," feature grocery products that are likely to be purchased monthly. In a sample newspaper advertisement different departments of the stores are also featured on a rotating basis during the first week of each month (Dholakia and Quader, 2004).

3.3.1.2 Acquiring Operational Know How

The Rahimafrooz management looked outside Bangladesh for the operational know-how needed to put its food retailing revolution in motion. Given that modern supermarkets first began to appear in Sri Lanka about twenty years ago, Mr. Rahim felt that insights from experienced Sri Lankan consultants who had been part of the transformation of the food retail industry there would be valuable and applicable in the local context. Because Mr. Rahim also placed a great deal of emphasis on technology, an important component of his business plan was partnering with a software company to ensure that a highly effective automated system was implemented in the Agora stores. Mr. Rahim felt the operational benefits that came from this technology made it a worthwhile investment.

3.3.1.3 Implementation: Agora Becomes a Reality

When the first Agora store opened in Dhanmondi in January 2001, the response from customers differed from expectations in two ways: the actual number of daily shoppers was double what had been estimated, but the value of the average market basket was smaller than expected. Overall revenues were higher than had been planned for, but not as high as they could have been if the predicted average basket amount had been achieved.

The higher customer count required Mr. Rahim and his team to act quickly to ensure that the planned level of customer service could be maintained. More check out counters had to be added, staff hired and trained, aisles redesigned, and promotional activities shifted. This additional work in Dhanmondi pushed back the openings date of the Gulshan store.
Agora's second branch opened in Gulshan one and a half years after the Dhanmondi store, in June 2002. Early results from the Gulshan location were the exact opposite of what had been experienced at the Dhanmondi branch: the number of shoppers was lower than expected, but the value of an average basket of goods was higher. Follow up investigations suggested that Dhanmondi customers, drawn from a more middle class background, shopped for food and groceries themselves. Gulshan residents were more dependent on their servants and drivers to do their shopping. Gulshan customers also

purchased more imported, higher value products, such as fruit, processed items, snacks, and personal care products. The local/imported product mix is more balanced in the Dhanmondi store while the mix is biased towards imported products in the Gulshan store.Customer responses to advertised products also vary by store location (Dholakia and Quader, 2004).

3.3.1.4 Current Status

Suppliers: Over the past two years, the number of suppliers has grown. The goal is to have at least three suppliers for each item, more for perishable items. Currently there are over 500 suppliers, of which 150 specialize in the importation of foreign goods. Agora's growing reputation now attracts suppliers who are eager to be associated with this innovative food retailer. On a daily basis, new suppliers or existing suppliers come in with new products and the PRPO has become an important instrument in managing the relationship. There are no exclusive suppliers or private labeling at present since a steady supply of products of a consistent quality and quantity has yet to be developed.

Human Resources: Since its inception, the number of Agora employees has grown to nearly 250. Agora has set high recruitment standards. Cashiers must have a minimum of an intermediate degree, while stackers must have graduation. The perception that manual jobs such as those of stackers and cashiers do not require high levels of education had initially hindered Agora's ability to recruit the desired level of staff. This limitation was however countered by the prevailing economic realities whereby stable job opportunities were hard to come by. Agora's policy of hiring fresh graduates, training them, and making them part of the Agora team has resulted in low turnovers and promoted Agora's reputation as a good employer.

Operating Systems: Agora is beginning to make forecasts using the software system and is basing procurement decisions on these forecasts. In-house capability in software and statistical analysis is improving and greater use of data captured at point-of-sale is expected in the future. Agora is also planning to introduce a loyalty card which, in addition to helping enhance the Agora name, will also provide detailed, in depth customer information.

Evaluation of Progress

The modern food retail sector in Bangladesh has experienced a great deal of activity since the first Agora store opened in 2001. It is interesting to note that the rapid growth of competing modern retail outlets has not had an impact of Agora's growth patterns. Since opening the first store, Agora has experienced an average annual revenue growth rate of 32%. Agora's continued success despite the emergence of strong competition can be attributed to its overall strategy. Agora has created a strong brand name in the mind of consumers, a brand that is associated with high quality and good service, thereby creating value in the eyes of consumers. While Agora expects to become profitable in the long term (5-7 years), the immediate goal is to make each store self-sustaining in the medium turn (Dholakia and Quader, 2004).

3.3.1.5 Challenges

Despite Agora's overall operational success, the stores face a number of challenges. Mr. Rahim and other senior executives have identified the following major challenges:

3.3.1.5.1 Supplier Management

Although initial efforts were geared toward an alignment of philosophies with suppliers, this has been difficult to achieve. Suppliers are known to be short-sighted and have been historically accustomed to a different manner of doing business, and it is taking time to adjust their objectives and operations to meet Agora's vision. Specific challenges regarding suppliers include inconsistent supplies that result in frequent stock outs, ineffective quality control mechanisms that cause increased monitoring costs to ensure high quality products, packaging defects, non-use of expiry dates and bar codes, and tampering with products. Agora is trying to help suppliers understand that they don't have to compromise on quality in order to sell their products. Mr. Rahim feels that while suppliers are improving, significantly more time will be required to complete the desired transformation.

3.3.1.5.2 Human Resources

Human resources have been another major challenge to Agora. Mr. Rahim faces difficulties at all levels of the hierarchy because of a relatively less trained and under skilled employee base. Although Agora is now able to recruit and retain people according to their strategies and objectives, sustained effort is required to instill the communication skills and "people friendly" attitude necessary in service industries. At a higher level, because management challenges remain an issue, Agora continues to have a relatively centralized management, with Mr. Rahim retaining a great deal of control.

3.3.1.5.3 Competitive Positioning (Branding)

Initial research suggested that consumers associated higher prices with modern supermarkets but nevertheless demanded competitive prices in order to be convinced to shop at them, particularly for daily necessities and commodities. After two and a half years in operation, results appear to be mixed. New and occasional customers feel Agora's prices are higher than competitors, while existing customers do not complain about prices. The attempts to differentiate Agora from its competitors seem to be causing some of the confusing results.

Successful communication regarding Agora's superior service seems to be reinforcing consumer associations about higher prices and limiting the number of new customers. Successfully delivering superior service, on the other hand, seems to be generating satisfaction among those customers who have chosen to shop at Agora. The challenge then is to develop strategies to attract large numbers of new customers who will continue to shop at the stores. Advertisements that feature prices for specific product seem to generate more traffic from new and occasional customers, but featuring product prices tends to undermine positioning the Agora brand along non-price dimensions.

This positioning dilemma is creating uncertainty, particularly in the advertising decisions being taken to increase customer traffic volume. A related issue is the definition of competition. Agora's strategic position is to differentiate itself from the local Kaccha bazaars on all dimensions except price. Since Agora built its first supermarket at

Dhanmondi, the industry has seen several changes, including the appearance of other supermarkets offering products in environments similar to Agora's. It is not clear whether the target market's definition of "competition" is the same as Agora's strategic definition of competition. There did not appear to be any consistent pattern in the behavior of customers who seem to be floating from one store to another. The challenge is to successfully position Agora along relevant competitive dimensions.

3.3.1.5.4 Global versus local strategy

Rahimafrooz's global strategy regarding the shopping experience at any Agora outlet is inspired by the company's ultimate aspiration for food retailing in Bangladesh; its tactical implementation poses several challenges. Based on the experience of the first two stores at Dhanmondi and Gulshan, it is apparent that there are distinct differences in the buying patterns of the two target market areas. This has required several adjustments in product assortment, price comparisons, advertised products, in-store promotions, sales forecasts, and inventory management at the individual store level. While the continuous upgrading of operational software will provide the data necessary to make these adjustments on a timely basis, the managerial challenge is to determine how to balance global and local strategies. As Agora expands its operations to more neighborhoods within Dhaka and to markets outside Dhaka, these challenges will increase in magnitude. One consideration is the management structure and allocation of responsibility for global vs. local strategies. Currently the human resource constraint has created a centralized decision making system with Mr. Rahim retaining a great deal of control. Future success will depend on ways in which the management structure is able to balance the two levels of strategic implementation (Dholakia and Quader, 2004).

3.3.2 MEENA BAZAR

Meena Bazar is a well reputed retail supermarket chain in Bangladesh with International standards. It started its operation in 2002 and runs outlets in Dhaka, Chittagong and Khulna division. Every Meena Bazar outlet carries almost 6,000-8,000 products to sell. It provides convenient shopping experience, friendly customer service along with easy

parking provisions for its customers. Meena Bazar is a subsidiary of Gemcon Group. It also produces organic products, dairy items, prepared food & herbal products.

Meena Bazar is the first retail superstore in Bangladesh that has a website to shop online. They launched their website in April, 2012, and now we deliver in Dhaka, Khulna and Chittagong. We took this initiative to make customer life easier. Online shopping with Meena Bazar saves time and it is also very convenient for our customer as we face more traffic these days.

Meena Bazar not only sell the products to the customers but also try to convey the product benefits to them too. In order to provide the customers with the best possible value for their money, they procure the products directly from the farmers, removing the middlemen, while ensuring high quality, freshness and continuous availability. Meena Bazar is also known as one of the trustworthy food suppliers of the nation. Meena Bazar is committed to deliver the best available products to the customers and is now expanding more to serve Bangladeshi customers better (Meena Bazar, 2016).

3.3.2.1 Segmentation strategy:

Meena Bazar segments the market by the population density of particular area. It also considers the income and occupation of their target customer as segmentation bases. If we see the location of their branches, we'll find that most of the male members of family of these locations are of working class. Female participate in the buying activity. So they strongly consider the choice and buying pattern of female in segmenting their target market

3.3.2.2 Positioning strategy:

To build a long term relationship with customer by enhancing customer satisfaction is at the heart of Meena Bazar positioning. It aims to consistently provide a remarkably satisfying and valuable shopping experience through a business that improves the quality of life for customers and team members. Meena Bazar is endeavoring to fulfill the everyday shopping needs of the urbanites through fair price, right assortment, and best

quality. Meena Bazar is trying to provide the right quality, assortment and price through stores of various forms and sizes**.**

3.3.2.3 Marketing Strategies

Product

- The company sales products regarding Apparel, Bakery, Dairy ,Fruits-Vegetable, Gift Voucher Grocery Health-Beauty, House Hold, House wares, Meat-Fish, Sweets Stationer books, furniture, all type of baby, men and women wear, sports items, health care products, pharmaceutical products, jewelry, toys, photography, grocery and many more.
- Reliable and warranted system is provided to customers purchasing any type of goods either online or directly through mega stores.
- Initiatives have been taken for food item for maintaining their nutritional value, and the companies are consistently being asked for using environment friendly technologies.

Price

Most of the time it is seen that the price of the product is sent to the Electronic Point of Sale (EPOS) terminal when the product's bar code is read. In the past, every single item had a price sticker attached and when price change was required, new labels had to be placed over the old one. This was a time consuming task, as every single item on the shelves of the product requiring the price change required a new label. Mistakes were sometimes made and customers over and under charged. Now days there are no price labels attached to the products, neither does the packaging of the product show the price. The only reference to the price of the product is contained on a label attached to the shelf where the product is situated. The shelf tables are produced by the branch computer and are printed out in different sizes according to the size of the self display for a particular product. Special offers such as multiply - "Buy two and get one free" or Link Save -"Buy one product and save 50% on another" could not be offered before the introduction of Information Technology (Daula, 2000).

Place

- Meena bazar is a huge network of apparel stores, small markets, cash and carry stores, membership warehouse clubs, supercenters, food and drugs, general merchandise stores, soft discount stores and restaurants
- The outlets are huge buildings with an average covered area
- Total 15 mega stores are working in different countries with almost 500 employees serving there.

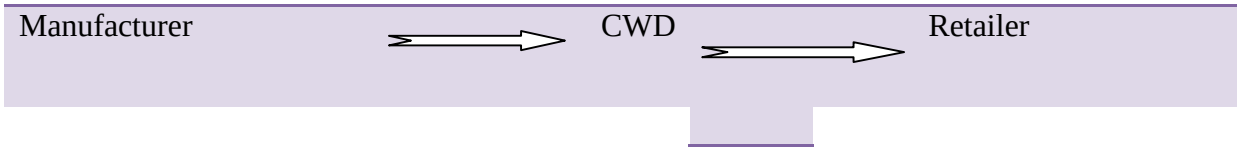
Promotion

- Online orders placing shipment to the desired place is major revenue earning source.
- Website of Meena bazar is very efficiently working and the data base is designed to facilitate the customers and the contents are very well managed.
- Basically the Meena bazar started operating at the discount principle, but still apart from using routine discount it offers seasonal and bulk discount also and sometimes products rates are fixed at very low price for a limited period of time.

3.3.2.4 Supply chain and the value addition of each stage of Meena Bazar:

Retailers always try to maintain an agreement with manufacture. They place order to their suppliers. Their order fulfillment process can be divided into two categories.

✓ Central warehouse delivery (CWD): There have no wholesalers. The supplier stores the product to the central warehouse of meena bazaar. Then the products are place according to the order of the outlets (Beef, potato).



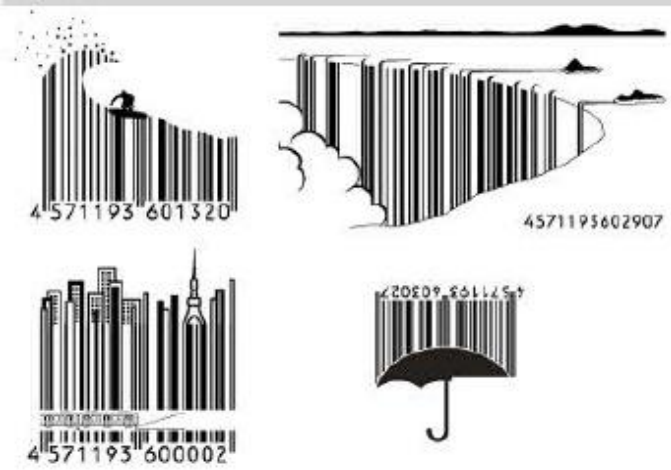
✓ Direct store delivery: In this placement the suppliers (wholesalers) directly supplies the order to the specific outlets according their order (Egg, milk).

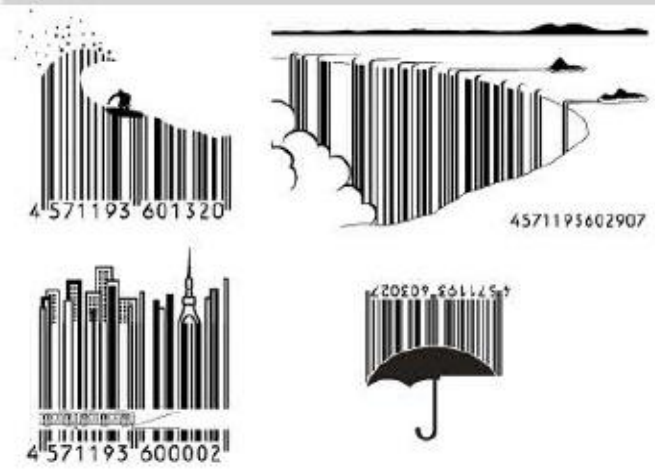
Manufacture	Distributor	Retailer(Menna bazar)

Menna Bazar tries to provide fresh food to the customers. To maintain the quality and freshness of the product they make a good relationship to the giant suppliers (wholesalers) of the products. Here we try to show the suppliers name and the prices of each stage. How price changes with the changing intermediaries.

3.3.2.5 Business Process

Meena Bazar use ELECTRONIC POINT OF SALE (EPOS) to develop strategic information system in their business process. Each product to be sold must have an identifying code number which is different from that of every other product. Different sizes of the same product even need different code numbers. These code numbers are printed onto the labels or packagings of the product in the form of bar codes (Daula, 2000).





3.3.3 PRINCE BAZAR

Prince Bazar is one of the leading super shops of this country. It holds the highest growth rate among all the super shops in Bangladesh. Its motto is to provide the quality products in lowest price and perfect customer service. Prince Bazar had been established on 2005 and successfully running till now. It is situated at Mirpur-1 (Near Bus stand) and fully desired to fulfill the demand of the people of that area.

Prince Bazar is one of the well decorated, modern super shops, which assures every kinds of product of people's needs. Different kinds of fruits, vegetables, fish-meat, groceries, chocolates, toys, Clothing, beverage, food items and a lot more products are available in Prince Bazaar. All the products of Prince Bazaar have a great qualitative value. Food items are healthy and hygienic. Fruits and vegetables are very fresh. It is very popular among the people of Mirpur as it successfully providing products and services to fulfill the needs of them. They can get whatever they want at close to their hand. It holds the

facility of full time air conditioning, escalator and trolley system, thus customers can shop comfortably.

Prince Bazar has a strong Board of Directors, who directly maintains the whole atmosphere, which can't be seen to any other super shops. They transmit innovative ideas to provide better product, service and solutions. Price is monitored every single day for customer's better satisfaction. Prince Bazaar doesn't compromise with the quality of products. People can also get some rare and foreign products, which they may not found elsewhere. A huge collection of many products including clothing are available in this super shop. So people can buy top to bottom of their necessary products from there. It has a group of skilled, trained and well educated employees who always help customers to find their desirable products .They are very friendly, co-operative and jolly. So people can get a full satisfaction shopping from Prince Bazaar (Prince Bazaar, 2016).

3.3.4 SHWAPNO

ACI Logistics Ltd. is launched with the dream to change the life of Bangladeshi Consumers with the Brand Name "**SHWAPNO**" in the form of retail chain in 2008. It opened the first outlet in Postogola Dhaka in 28 October 2008. Now, Shwapno has 59 outlets in 16 districts (Dhaka, Narayangonj, Mymensing, Chittagong, Feni, Sylhet, Moulvi bazar, Bogra, Nator, Rangpur, Khulna, Jessore, Jhinaidah, Narshingdi, Barishal, Pabna). More than 1300 people are working in this retail chain shop. Their product varieties are increasing day by day that is why people call it 'little Walmart' in Bangladesh. The opening hours of this superstores outlets varies place to place. You can get the idea of opening hours from their listing information of outlets (Shwapno, 2016).

Although the history of superstore is old in the world but this idea is not known to our country. The superstore called shwapno which established in 2009 and start their business with a lot of brunches around 39. Branches are situated around the Dhaka and Chittagong.Shwapno" is the place where ten million people expect that their dream will come true- the dream of getting fair price, weight and pleasant shopping experience.

Shwapno aspire to serve the community as “neighborhood chain store” across the country primarily from district level bringing all necessities under the same roof. Neighborhood chain store, the concept that Shwapno wants to apply, refers to the chain store that will exist in every locality with close proximity. Accordingly, ACI Logistics establishes “Shwapno” in the somewhat deep locality. In general, people have to visit in wet markets, which are full of mud, toxic air, and musty ambiance, for their everyday, weekly and even fortnightly shopping for perishable as well as fast moving consumer goods. Interestingly, people of Bangladesh are welcoming the concept of superstore or neighborhood chain store with lots of enthusiasm and excitement as the data shows the number of customers has been growing since the introduction of this concept. Shwapno, having a bit different concept of “neighborhood chain store”, entered in retail and wholesale trade, which account for more than 13 percent of GDP since fiscal 1999-2000, set off on October, 2008 with the aim of ensuring pleasant shopping experience, fair price and weight to both farmers and consumers.

Till now, ACI Logistics has established 59 “Shwapno” outlets, which range from 1500 to 6000 square feet having nearly 5000 SKUs, across the country predominantly in metropolitan cities. ACI Logistics aspires to expand its business to district level especially to every corner of Bangladesh so as to enable people to have modern shopping experience. These branches are situated around the Dhaka and Chittagong. They want to provide this superstore facility to the high level to low-level people. Shwapno has its own firm, so they can provide the fresh food to the people. They are introducing all the people with this superstore idea. There price is lower than market price. Its target is to provide the home service delivery all around the Bangladesh. (Md.Alauddin, Bonosree Branch manager, Shwapno superstore)The name of Shwapno is entwined with the glory of-the shwapno super store marketing policy “To create a best atmosphere for clients”. A man gifted with an inherent entrepreneurial sense. Shwapno super store’s state-of-the-art technology and creative strategy gave it an edge over its competitors at local market. Shwapno super store is a Dhaka-based supermarket chain. It is the largest retailer by domestic market share, leaving behind Agora, PQS, Mena Bazaar, Nandan Mega Shop, Pacific, Pick and Pay, Etc, Shop & Save and others. Originally specializing in food, it has

moved into areas such as clothes, consumer electronics, and consumer financial services, selling and renting DVDs, compact discs and consumer telecom accessories. Shwapno super market is an enterprise that combines industry and trade, mainly engages in retailing the quality products at the most lowest price in the market (Shwapno, 2016).

Vision

Shwapno was launched with a vision to change the lifestyle of Bangladeshi consumers.

Values

- Impeccable integrity - We are honest, transparent and ethical in all our dealings.
- Passion to win - We deliver what we promise by bringing the best in all of us
- Delightful experience -We win the hearts and minds of our employees and consumers by offering relevant quality, value and service.
- Living an enterprise culture - We believe in trust, truth and teamwork
- Making a better world - We compassionately contribute to the community we live in
- Continuous improvement - We constantly learn and innovate to create new paradigm
- Count every paisa - We treat every taka spent as our own for creating value for our consumers

3.3.5 NANDAN

Nandan Mega Shop is the newest example of Nandan Group's commitment to provide customers with the most convenient and enjoyable shopping experience ever in Dhaka. They mainly offered high-quality local & imported food, fresh fish, meat, poultry and household items. They offer a wide selection of delicious food and home supplies in our over 10,000-square feet store. As an International standard supermarket, they always care about their customers.

To provide a needed & much demanded convenient shopping solution, Nandan Group has launched supermarket in the country located in Gulshan, Dhaka. Nandan Mega Shop was established by a group of expatriate Bangladeshi entrepreneurs living in the UK and USA. Second Dhaka branch of Nandan Mega Shop open in Dhanmondi area of the city

end of 2005.Nandan Mega Shop offers customers a wide range & variety of products to choose from. There are over 25,000 items on display in a shopping area covering over 10,000 sq ft of floor space. Shoppers can come to shop at ease and comfort without all the hassles and troubles that they face at traditional bazaar. One of the biggest problems consumers face at any shopping mall or store in Dhaka is the lack of parking space. Nandan Mega Shop has a dedicated underground parking lot which can accommodate up to 45 vehicles (ASA University Bangladesh, 2006)

Value Statement of Nandan Mega Shop: Nandan Mega Shop is committed and feel proud to fulfill the following values:

- ✓ Transparency & integrity in all our dealings
- ✓ Excellence in everything we do
- ✓ Total commitment to customer satisfaction
- ✓ Thinking ahead and taking new initiatives

3.3.6 CARRE FAMILY

Bangladesh entered in the 'supermarket era' on August 24, 2001 with the launching of super store "Carre Family", a retail chain superstore in Bangladesh, introducing a new way to shop. The company has already opened two outlets – Mohammadpur and Mirpur in Dhaka – and many more are in progress in Chittagong and other cities of the country. The store's head office is at Satmashjid road, Dhaka. The superstores are open from 9 am to 8 pm every day. Rush of customers is experienced mostly in the morning and evening. Most of the employees of Agora are young and well-educated.

Carre Family is currently focused in food retailing, ranging from a wide variety of fresh vegetable, fruits, meat and fish to grocery, bakery, dairy, personal and household products. Carre Family provides its customers with guaranteed quality and freshness. It carries more than 30,000 items of products and has plans to expand its product portfolio to carry other ranges of consumer products in the coming years.

Carre Family continues to be the trend setter in Bangladesh. Carre Family has been the venue of launching of Thai products, which have by now become commonplace. The

products are procured under the direct supervision of its officials who maintain strict procurement and marketing standards. Products on the shelves are regularly monitored for expiry dates.

Supermarkets like “Carre family” with a small number of outlets collect this type of items from the traditional wholesale market through an intermediary. Vegetables and other items are move along traditional supply chains until they reach the wholesale market. Therefore, such supply chains are mere extensions of the existing traditional supply chains. Carre family does not adhere to quality standards stipulated by formal certificates. Rather, the quality parameters actually adopted are mostly related to the physical attributes of the product such as size, color, texture and whether the produce is free from pest and disease attacks. Producers sell the remaining part of their harvest (which is not of the quality required by the supermarket) to collectors in the traditional market or send them to commission agents at the wholesale market through transporting agents (ASA University Bangladesh, 2006)

3.3.7 SHOMOBY BAZAR/BDR SHOP

Bangladesh formally entered the supermarket era on August 24, 2001 with Rahimafrooz Superstores Ltd. BDR shop as a retail chain superstore in Bangladesh, introduces a new way to shop. In 2007, BDR jointly with a private company named Nirmal Udyog set up some well-furnished super stores in the capital. It had 11 shops including one in the BDR Pilkhana headquarters and the rest 10 in the different parts of the city. But things have changed after February 25-26 mutiny, 2009 when 74 people including 57 army officers (including the DG of BDR) killed in Pilkhana headquarters last year. Then there was a realization among the BDR authorities that it might have taken a wrong step by engaging the border troops in business activities. Bangladesh Rifles has initiated a move to shut down the BDR shops, a chain of business outlets believed to have done the border force more harm than good. Its Director General Major General Md Mainul Islam reckons that a disciplinary force like BDR should not be involved in commercial ventures.

Accordingly, BDR had written to the home ministry, saying it wants to close down the shops. Queried about the BDR's letter, Home Secretary Abdus Sobhan Sikder asked the local government ministry to take over the running of those shops, as it was on the LGED land where the businesses are located. In 2008, Nirmal Udyog gave BDR Tk 15 lakh in profit when Shakil was the DG. That was the first and last time it shared any profit with the force. After all the legal amendments, BDR shop renamed as Shomoby Bazar and the government of Bangladesh took over all the shops under cooperative ministry. Now all the functions of Shomoby Bazar are performed through cooperative society of the govt. of Bangladesh. There are at least 80 branches across the country which is the largest of all the superstores of our country.

The stores are open from 9 am to 8 pm every day. Rush of customers is experienced in the morning and evening. Shomoby Bazar superstores are currently focusing in food retailing, ranging from a wide variety of fresh vegetables, meat and fish to grocery, bakery, dairy, personal and household products. Shomoby Bazar provides its customers with guaranteed quality and freshness. Now it has plans to expand its product portfolio to carry other ranges of consumer products in the coming years. Other supermarket brands have since emerged but Shomoby Bazar continues to be the leader and trendsetter (ASA University Bangladesh, 2006)

3.3.8 SHOP N SAVE

Shop N Save is one of the leading super shops of this country. It holds the highest growth rate in super shop business in Bangladesh. Its motto is to provide the quality products in lowest price and perfect customer service. **Shop N Save** had been established on 2001 and successfully running till now at Uttara sector-4

Shop N Save is one of the well decorated, modern super shops, which assures every kinds of product of people's needs. It has a group of skilled, trained and well educated employees who always help customers to assure their desirable products .They are very friendly, co-operative and jolly. **Shop N Save** doesn't compromise with the quality of products. Different kinds of fruits, vegetables, fish-meat, groceries, chocolates, toys, Clothing, beverage, food items and a lot more products are available. Fruits and vegetables are very fresh and they can get whatever they want at close to their hand. People can also get some rare and foreign products, which they may not gate elsewhere. A huge collection of many products including clothing are available in this super shop (ASA University Bangladesh, 2006)

Shop N Save has a strong Board of Directors, who directly maintains the whole atmosphere. Price is monitored every single day for customer's better satisfaction. So people can buy top to bottom of their necessary product from here. So people can get a full satisfaction shopping from our shop **"Shop N Save"**

3.4 Market Share of Different Super Market

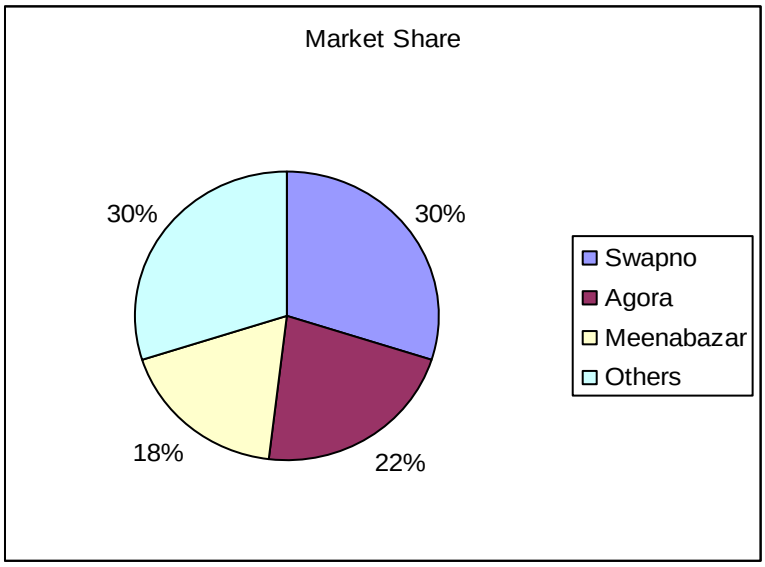
Since the inception of Agora's journey in 2001, the Bangladeshi supermarket sector has taken a steady and assuring stride forward. After 12 years and with 107 stores, the domestic industry now stands at around BDT 1,500 crore. As Bangladesh shifts towards

the middle income status, all the subsequent advantages, such as higher income per capita and urbanization will further expedite the industry's profitability.

According to the BSOA (Business Supermarkets Owners' Association), currently there are 121 supermarkets in the country. However, the industry is largely dominated by three major players – Shwapno (59 Outlets), Agora (13 Outlets) and Meena Bazar (18 Outlets). Once a key competitor, Nandan, now holds just two stores.

In terms of distribution network and competitive prices, Swapno has entrenched itself as the market leader, whereas, Agora and Meena Bazar are viewed as market leaders in terms of quality and services.

Figure 3.1: Market Share of Different Supermarket



Source: Rahimafrooz and Lanka Bangla Primary Research, 2014

With rapid urbanization, the industry is expected to grow by almost 15 times its current size by 2021. Positive economic externalities such as generation of employment via SMEs, higher food safety and security, price stability, and inclusive business development are expected to accompany this growth.

3.5 Industry drivers

The key cost and revenue drivers of the industry are listed below:

Figure 3.2: Supermarket Industry Drivers in Bangladesh

Source: Lightcastle Primary Research, 2014

- **Change in social structure:** The steady rise of nuclear families, coupled with the influx of women in the workforce means less time for shopping. Thus, it is becoming increasingly important to have a huge variety of products under one roof.

- **Change in per Capita Income:** Per capita income has increased to above USD 1,000 in 2013 and is expected to grow further, especially in urban areas. This change in socio-economic structure has given rise to a new breed of middle-class

who are willing to spend their higher disposable income in supermarkets rather than wet markets in pursuit of convenience and social status.

- **Change in Taste and Fashion:** Globalization through internet penetration, international trade, and myriad of international television channels have exposed consumers to new ideas. Shopping from supermarkets, long considered a Western concept, is slowly being accepted by mainstream consumers in Bangladesh.

- **Consumer Awareness:** Due to widespread media coverage over usage of formalin and chemical contaminated consumable products; consumers are more aware of possible health repercussions of consuming these products. Moreover, since supermarkets promise unadulterated produce, many conscious customers are slowly turning away from the traditional wet markets.

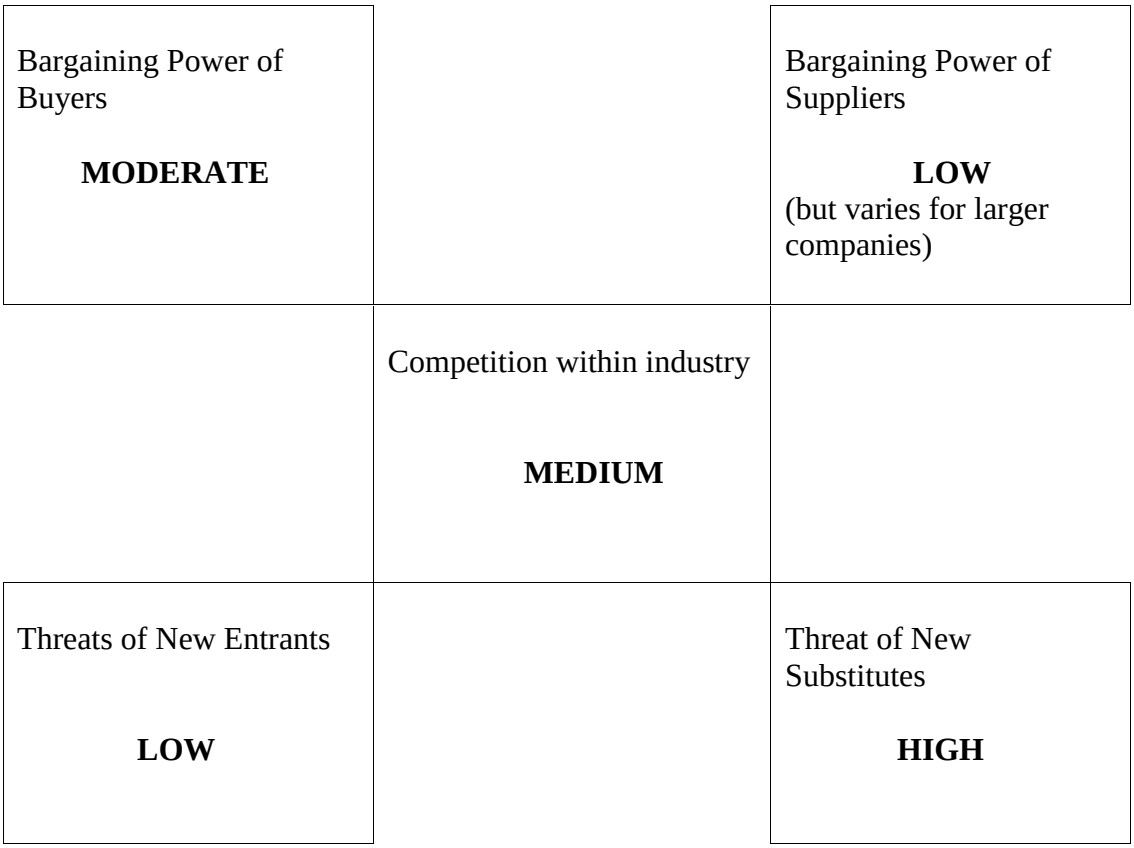
3.6 Industry analysis

3.6.1 Porter's Five Forces Model

From the model it is conclusive that stiff competition exists among the major firms which are backed by the rich capital of their respective parent companies. Such superfluity acts as a barrier to entry for new firms. Recently, several e-commerce platforms have stepped up to offer essential commodities with zero cost home delivery facilities. In the long run, as they gain traction, strong competitors might arise from them.

The present scenario is such that a customer might visit the store at the month's start, but the same person might prefer the wet markets to meet immediate needs, provided no supermarket exists in close proximity. Reasonable pricing, credit facility (from retailers), and convenience also drive customers to these wet markets. There are also general stores in almost every neighborhood where customers can purchase their basic daily needs. But even with this looming threat, buyers have little influence over price, since they only procure in small quantities. Suppliers have a similar minimal impact on the supermarkets' profitability (Lightcastlebd, 2015).

Figure 3.3: Porter's Five Forces Analysis on Bangladesh Supermarket Industry



Source: LightCastle Primary Research 2014

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procure in small quantities. Suppliers have a similar minimal impact on the supermarkets' profitability.

3.6.2 Supermarket SWOT Analysis

Below is a thorough analysis of the internal and external environment of the industry.

Figure 3.4: SWOT Analysis of Supermarket

STRENGTHS • Major players have deep pockets allowing investment in supply chain infrastructure, outlets and promotion • Bulk buying to some extent allows lower costs and deeper discount for consumers. • The sector demand is increasing as the growing middle-class prefer the convenience of supermarkets • As the sector enters its second decade, a certain level of sector specialization has developed with a local supply chain model and efficient middle management.	**WEAKNESSES** • Due to huge number of items sold, supermarkets have to rely increasingly on middle-men and Dhaka based market hubs, especially for perishables. • Although some supermarkets have 10-20 outlets, most other players have fewer outlets to benefit from bulk buying. • Although the contract farming model has been tried by major supermarkets like Agora and Meena Bazar, it has not seen much success yet.
OPPORTUNITIES • Urban consumers are more conscious of the prevalence of contaminated perishables and protein items e.g. vegetables, fruits and fish; allowing supermarkets to capture higher market share. • Increasing per capita income has made consumers less price sensitive and more focused toward product quality. • Some super markets are starting to build a robust contract farming which has prospect for scalability and is replicable.	**THREATS** • Political unrest and frequent disruption by law enforcement agencies disrupt supply chain and cost competitiveness. • Rapidly increasing real estate rental costs will add to total expansion costs and deter supermarkets to expand. • Supermarkets market share constitute only 2% of the total market and mainly concentrated in urban areas. Intense price competition among existing players may hamper sector growth

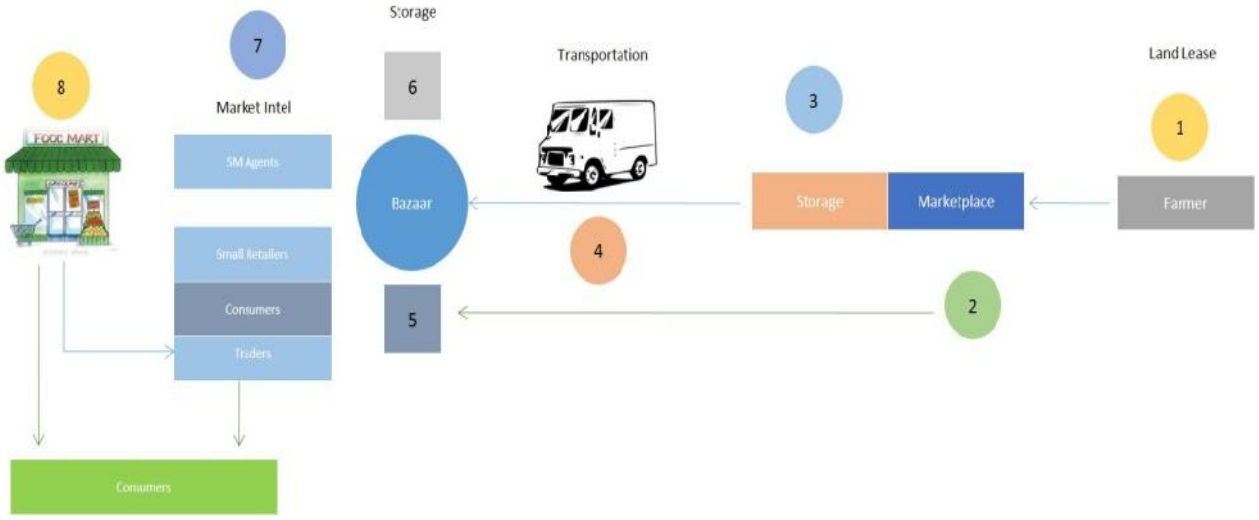
Source: Lightcastle Primary Research, 2014

In the last part we tried to cover the dynamics of the supermarket industry in Bangladesh. In this final part we will look into the sourcing methods, challenges and the ways to overcome them and take this industry further.

3.7 Existing Supply Chain Models of Supermarkets

Supermarkets in Dhaka city procure vegetables directly from the farmers and through middlemen (indirectly). Though, most of them procure all of their vegetables indirectly i.e through middlemen, few of them procure some of their vegetables directly from the producer occasionally.

Figure3.5: Supermarkets Value Chain – Indirect Sourcing

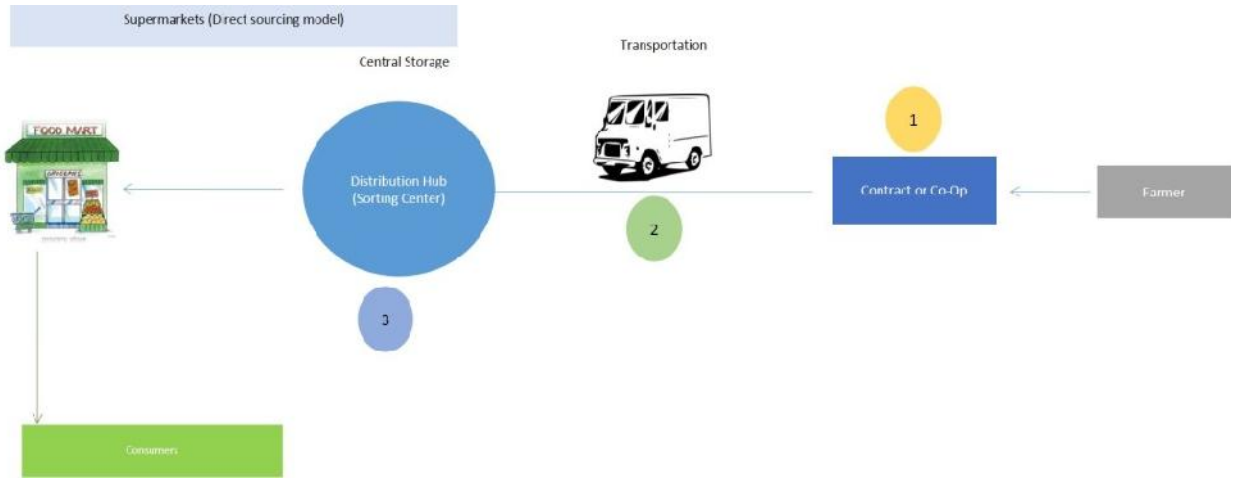


Source: Lightcastlebd, 2015a

When a direct sourcing chain is not maintained, as depicted in the diagram above, several intermediaries take a chunk of the profits, leaving a reduced amount for the supermarket and the farmers. Typically, a 30 percent margin exists between the original producer and the end consumer. Supermarkets, via this model, command about 10 to 12 percent of this margin and farmers get about 3 to 4 percent. The rest 14 to 15 percent is taken by the intermediaries, which are about 4 to 8 in number. Except for the bigger players, who have investment to help them sustain, this anomaly has led to the closure of many smaller

superstores. Sharp rise in overheads – rent, utilities, salaries and maintenance costs have also contributed. Furthermore, the market growth is also affected as higher prices mean a significant portion of the middle class is remaining untapped.

Figure 3.6: Supermarkets Value Chain – Direct Sourcing



Source: Lightcastlebd, 2015a

In case of direct sourcing model, the number of actors in the value chain decreases to 3. This enables the supermarkets to command a higher profit margin, usually in the range of 12 to 18 percent. Naturally, it also translates to higher return for the farmers (3 to 6 percent). The rest goes on to provide competitive prices to the consumers. As for Agora, it regularly surveys wet markets so that it can match their prices. At Agora, perishables and commodities are charged at the market rate, or lower. But, proteins (fishes and meats) are still charged higher than the conventional wet markets.

In the direct sourcing model, the supermarkets have to employ rural buying agents, contract farming or co-operative models, forward purchase, transportation risks and also deduct the suppliers' credit. Additionally, they also have to deal with post-harvest loss. A more streamlined value chain, however, would mean a larger share of the margin for both parties. Compared to India where supermarkets command a margin of almost 30 percent, Bangladesh can only entail around 12 percent.

Vegetables at Superstores

People of higher level and mid level income are the target customers of superstores. Due to increase in per capita income, people of these classes are aware of the quality of products. As far as vegetables are concerned, these people want to buy fresh products from the market. People visiting superstores usually are more interested to buy other consumer items than vegetables.

Superstores collect vegetables mainly from the wholesalers and little amount from the producers (i.e. farmers). The most important factor considered by the superstores while buying vegetables is freshness. Superstores usually have limited information about the origin and the quality attributes of fresh produce because of collecting from the wholesaler. Consumers prefer vegetables of medium size rather than larger or smaller sizes. Superstores try to purchase their vegetables supply according to customers requirements. Frequency of purchase for the superstores is quiet high as they cannot store large quantities of vegetables due to lack of refrigerating facilities (Kabir, 2006).

3.8 Way forward

As of now, the supermarket industry captures only 2 percent of the market. Increasing awareness about food contamination, rise of income levels, and the expansion of urbanization is likely to have a constructive impact on the future of the supermarket industry. If the number of players can be decreased, the existing chain of operation will become more robust. Supermarkets will place weekly order with the sourcing firm which will in turn buy in bulk and supply to individual outlets. Large scale buying will allow firms to cut down the middle-men and ensure higher revenues for farmers and lower prices for the end clients. The sourcing firm will also engage in grading the quality of the commodities. This development, along with each shop's ambience, product quality, and convenience factors will lure customers into shopping at the supermarkets in Bangladesh. The large portion of customers, who are generally more price sensitive, will then see an added incentive to shop at the cities finest.

3.8 Chapter Summary

This chapter summarizes retail market in Bangladesh, types of retail shops, the growth of super market in Bangladesh, challenges of super market in Bangladesh. This chapter also discusses key players of super markets- Agora, Meena bazar, Prince bazar, Shwapno, Nandan mega shop, Carrefamily, Shomoby bazaar(BDR shop), Shop N save and their 4P (Product, Price, Place and Promotion) and STP (Segmentation, Targeting and Positioning) strategy. Moreover, the chapter highlights market share of different super markets, porters five forces model and SWOT analysis of super markets.

4.1 Introduction

This chapter presents a comprehensive view of the methodology adopted for the present investigation viz. The approaches of the study, the nature and sources of data collection, sampling techniques, the sample size, the analytical tools and techniques used for an evaluation of the objectives of the study. Here the primary data are collected with the help of structured and unstructured questionnaire and secondary data has been collected from text book, article, internet and different published sources.

4.2 Research Approaches

One of the questions that a researcher must decide before conducting any research is which research approach will be most appropriate. The approach chosen will depend on the research question and the types of information are seeking. There are three general research approaches; descriptive, exploratory and causal (Kolb, 2008).

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4.1.1 Descriptive research

Descriptive research is used when statistical data are needed on a fact. The tool used to conduct descriptive research is almost always surveys (Kolb, 2008).

Table 4.1: Research studies and their use

Method	When to Use	How to Use
Descriptive	Use when details and numbers are needed	Research on customer demographics or purchase frequencies
Exploratory	Use when seeking insights on motivation/behavior	Research on purchase motivation or attitude toward the company
Causal	Use when needing to determine effect of change	Research on effect of product of promotion change on purchase

Source: Kolb, 2008

4.1.2 Exploratory research

Researchers use exploratory research when a research question deals with finding information on consumer attitudes, opinions and beliefs. Such exploratory research can be useful even when there is no specific problem to investigate.

4.1.3 Causal research

Causal research is conducted to discover whether the change a company is planning to make will have a positive or negative effect on consumers. Research questions that require causal research have a cause and effect – for example, such questions as 'Will a new promotion campaign using a celebrity increase purchases of books among young people'? or 'Will customers at the cinema purchase more refreshments if we have a new menu'? These issues can also be explored using qualitative techniques. Even the effect of intangible factors, such as smell and sound, on sales can be researched (Spangenberg et al., 2005).

In this study, we applied both quantitative (descriptive) and qualitative research (exploratory) i.e. mixed method design.

4.3 Sampling Technique

All sample designs fall into one of two categories: probability or non-probability sampling. **Probability samples** are samples in which members of the population have a known chance (probability) of being selected into the sample. **Nonprobability samples**, on the other hand, are samples where the chances (probability) of selecting members from the population into the sample are unknown. There are four probability sampling methods: simple random sampling, systematic sampling, cluster sampling, and stratified sampling.

Table 4.2: Four Different Probability Sampling Methods

Simple Random Sampling

The researcher uses random numbers from a computer, random digit dialing, or some other random selection procedure that guarantees each member of the population in the sample frame has an identical chance of being selected into the sample.

Systematic Sampling

Using a sample frame that lists member of the population, the researcher selects a random starting point for the first sample member. A constant *skip interval,* calculated by dividing the number of population members in the sample frame by the sample size, is then used to select every other sample members from the sample frame. A skip interval must be used so that the entire list is covered, regardless of the starting point. This procedure accomplishes the same end as simple random sampling, and it is more efficient.

Cluster Sampling

The sample frame is divided into groups called clusters, each of which must be considered to be similar to the others. The researcher can then randomly select a few clusters and perform a census of each one (one stage). Alternatively, the researcher can randomly select more clusters and take samples from each one (two stage). This method is desirable when highly similar clusters can be easily identified, such as subdivisions spread across a wide geographical area.

Stratified Sampling

If the population is believed to have a skewed distribution for one or more of its distinguishing factors (e.g., income or product usage), the researcher identifies subpopulations in the sample frame called strata. A simple random sample is then taken of each stratum. Weighting procedures may be applied to estimate population values, such as the mean. This approach is better suited than other probability sampling methods for populations that are not distributed in a bell-shaped pattern (i.e., skewed).

Source: Burns and Bush, 2014

All of the sampling methods we have described thus far embody probability sampling assumptions. In each case, the probability of any unit being selected from the population

into the sample is known, even though it cannot be calculated precisely. There are four types of non-probability sampling methods. These are briefly described below.

Table 4.3: Four Types of Non-probability Sampling Methods

Convenience Sampling The researcher or interviewer uses a high-traffic location, such as a busy pedestrian area or a shopping mall as the sample frame from which to intercept potential respondents. Sample frame error occurs in the form of members of the population who are infrequent or nonusers of that location. Other error may result from any arbitrary way the interviewer selects respondents from the sample frame.
Purposive Sampling The researcher uses his or her judgement or that of some other knowledgeable person to identify who will be in the sample. Subjectivity and convenience enter in here; consequently, certain members of the population will have a smaller chance of selection than will others.
Referral Sampling Respondents are asked for the names or identities of others like themselves who might qualify to take part in the survey. Members of the population who are less well known or disliked or whose opinions conflict with the selected respondents have a low probability of being selected.
Quota Sampling The researcher identifies quota characteristics, such as demographic or product use factors, and uses these to set up quotas for each class of respondent. The sizes of the quotas are determined by the researcher's belief about the relative size of each class of respondent in the population. Often, quota sampling is used as a means of ensuring that convenience samples will have the desired proportion of different respondent classes.

Source: Burns and Bush, 2014

TABLE 4.4: Choosing Non-probability versus Probability Sampling

Factors	Conditions favouring the use of	
	Non-probability Sampling	**Probability Sampling**
Nature of Research	Exploratory	Conclusive
Relative magnitude of sampling and non-sampling errors	Non-sampling errors are larger	Sampling errors are larger
Variability in the population	Homogenous (low)	Heterogeneous (High)
Statistical Considerations	Unfavorable	Favorable
Operational Considerations	Favorable	Unfavorable
Time	Favorable	Unfavorable
Cost	Favorable	Unfavorable

Source: Malhotra, 2010

In our study, we have considered convenience sampling procedure when selecting consumers. Moreover, for selecting farmers and middlemen we have applied judgement sampling procedure.

4.4 Sample Plan

Up to this point, we have discussed various aspects of sampling as though they were discrete and seemingly unrelated decisions. However, they are logically joined in a definite sequence of steps, called the **sample plan**, which the researcher goes through to draw and ultimately arrive at the final sample. These steps are listed and described in the following table.

Table 4.5: Steps in a Sample Plan

Step	Action	Description
1	Define the population	Create a precise description of the group under investigation using demographics, buyer behaviour, or other relevant constructs.
2	Obtain a sample frame	Gain access to some master source that uniquely identifies all the units in the population with minimal sample frame error.
3	Decide on the sample method	Based on survey objectives and constraints, endeavour to select the best probability sample method, or alternatively, if appropriate, select the best non-probability sample method.
4	Decide on sample size	If a probability sampling plan is selected, use a formula.
5	Draw the sample	Using the chosen sample method, apply the necessary steps to select potential respondents from the sample frame.
6	Validate the sample	Inspects some relevant characteristics of the sample (such as distribution of males and females, age range etc.) to judge how well it matches the known distribution of these characteristics in the population.

Source: Burns and Bush, 2014

4.4.1 The Confidence Interval Method of Determining Sample Size

The most correct method of determining sample size is the **confidence interval approach**, which applies the concepts of accuracy (margin of sample error), variability, and confidence interval to create a "correct" sample size. This approach is used by national opinion polling companies and most marketing researchers. To describe the

confidence interval approach to sample size determination, we first must describe the four underlying concepts.

Sample size and accuracy

The first axiom, "***The only perfectly accurate sample is a census,***" is easy to understand. We are aware that a survey has two types of error: non-sampling error and sampling error.

Non-sampling error pertains to all sources of error other than the sample selection method and sample size, including problem specification mistakes, question bias, data recording errors, or incorrect analysis. **Sampling error** involves both sample selection method and sample size. With a census, every member of the population is selected, so there is no error in selection. Because a census accounts for every single individual, and if we assume there is no non-sampling error, it is perfectly accurate, meaning that it has no sampling error.

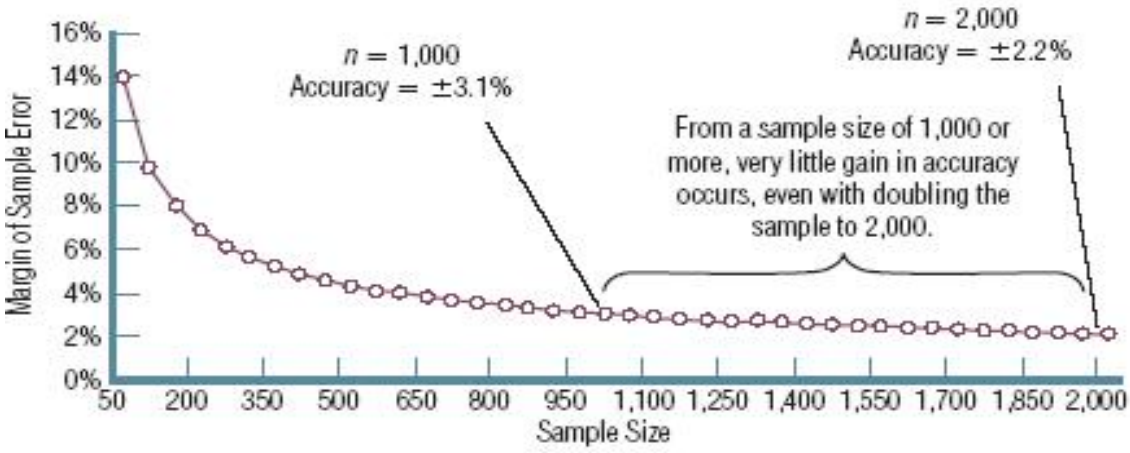
However, a census is almost always infeasible due to cost and practical reasons, so we must use some random sampling technique. This fact brings us to the second axiom, "***A random sample will always have some inaccuracy, which is referred to as 'margin of sample error' or simply 'sample error***.' " This axiom emphasizes that no random sample is a *perfect* representation of the population. However, it is important to remember that a random sample is nonetheless a *very good* representation of the population, even if it is not perfectly accurate.

The third axiom, ***"The larger a random sample is, the more accurate it is, meaning the less margin of sample error it has"*** serves notice that there is a relationship between sample size and accuracy of the sample. This relationship is presented graphically in Figure. In this figure, margin of sample error is listed on the vertical axis, and sample size is noted on the horizontal axis. The graph shows the sample error levels for samples ranging in size from 50 to 2,000. The shape of the graph is consistent with the third axiom because margin of sample error decreases as sample size increases. However, we

notice that the graph is not a straight line. In other words, doubling sample size does not result in halving the sample error. The relationship is an asymptotic curve that will never achieve 0% error.

There is another important property of the sample error graph. If we look at the graph, we see that at a sample size of around 1,000, the margin of sample error is about ±3% (actually ±3.1%), and it decreases at a very slow rate with larger sample sizes. In other words, once a sample is greater than, say, 1,000, large gains in accuracy are not realized even with large increases in the size of the sample. In fact, if it is already ±3.1% in accuracy, little additional accuracy is possible.

Figure 4.1: The Relationship Between Sample Size and Sample Error



Source: Burns and Bush, 2014

With the lower end of the sample size axis, however, large gains in accuracy can be made with a relatively small sample size increase. One can see this vividly by looking at the sample errors associated with smaller sample sizes in Table 5 . For example, with a sample size of 50, the margin of sample error is ±13.9%, whereas with a sample size of 200 it is ±6.9%, meaning that the accuracy of the 200 sample is roughly double that of the 50 sample. But as was just described, such huge gains in accuracy are not the case at the other end of the sample size scale because of the nature of the curved relationship.

For example, comparing the sample error of a sample size of 2,000 (±2.2%) to that of a sample size of 10,000 (±1.0%): with 8,000 more in the sample, we have improved the accuracy only by 1.2%. So, while the accuracy surely does increase with greater and greater sample sizes, there is only a minute gain in accuracy when these sizes are more than 1,000 respondents.

The sample error values and the sample error graph were produced via the fourth axiom: *"Margin of sample error can be calculated with a simple formula, and expressed as a ±% number."* The formula follows:

4.4.2 Margin of sample error formula

$$\pm \text{ Margin of Sample Error} = 1.96 \times \sqrt{\frac{p \times q}{n}}$$

Table 4.6: Sample Sizes and Margin of Sample Error

Sample Size (n)	Margin of Sample Error (Accuracy Level)
10	±31.0%
50	±13.9%
100	±9.8%
200	±6.9%
400	±4.9%
500	±4.4%
750	±3.6%
1,000	±3.1%
1,500	±2.5%
2,000	±2.2%

5,000	±1.4%
10,000	±1.0%

Source: Burns and Bush, 2014

4.4.3 The Sample Size Formula

To calculate the proper sample size for a survey, only three items are required: (1) the variability believed to be in the population, (2) the acceptable margin of sample error, and (3) the level of confidence required in your estimates of the population values. This section will describe the formula used to compute sample size via the **confidence interval method**. As we describe the formula, we present some of the concepts more formally.

4.4.3.1 Determining Sample Size via The Confidence Interval Formula

There is a formula that includes our three required items. When considering a percentage, the formula is as follows:

Standard sample size formula

$$n = \frac{z^2 (pq)}{e^2}$$

Where

n = the sample size

z = standard error associated with the chosen level of confidence (typically, 1.96)

p = estimated percent in the population

q = $100 - p$

e = acceptable margin of sample error

4.4.3.2 Sample Size Using Non-probability Sampling

The sample size formula and other statistical considerations of this chapter assume that some form of probability sampling method has been used. In other words, the sample must be random with regard to selection, and the only sampling error present is due to sample size. We know that sample size determines the accuracy, not the representativeness, of the sample. The sampling method determines the representativeness. All sample size formulas assume that representativeness is guaranteed with use of a random sampling procedure.

The only reasonable way of determining sample size with nonprobability sampling is to weigh the benefit or value of the information obtained with that sample against the cost of gathering that information. Ultimately, this is a subjective exercise, as the manager may place significant value on the information for a number of reasons. For instance, the information may crystallize the problem, it may open the manager's eyes to vital additional considerations, or it might even make him or her aware of previously unknown market segments. But because of the unknown bias introduced by a haphazard sample selection process, it is inappropriate to apply sample size formulas. For nonprobability sampling, sample size is a judgment based almost exclusively on the value of the biased information to the manager, rather than desired precision, relative to cost. Many researchers do select non-probability sampling plans, knowing their limitations. In these cases, the sample size question is basically, "How many people will it take for me to feel comfortable in making a decision." (Burns and Bush, 2014).

In our study, we have applied finite sample size formula for selecting consumers. In our study, we administered our survey on 332 customers from different supermarkets of Dhaka city. For selecting farmers and middlemen, we didn't apply any type of sample size determination formula. But we select both farmers and middlemen because they are involved with vegetable supply chain of supermarkets. We administered our interview schedule on 40 farmers and 60 middlemen. In the case of farmers, we administered our interview schedule on Bogra, Jessore, and

Dinajpur. In the case of middlemen, we administered our interview schedule on Dhaka, Bogra, Jessore, and Dinajpur. Basically we administered our interview schedule on Arathdar, Bepari, Wholesaler, Retailer (Supermarkets). Study assessed mainly the vegetable items sold in supermarket in Dhaka city. However, four types of vegetables has been selected based on their sales performance in the supermarkets, these are Brinjal, Cauliflower, Cabbage and Tomato.

4.5 Scaling Technique

In our study, we employed Likert scale for measuring customer's attitude of supermarkets.

In using, evaluating, or developing multi-item scales, we applied a number of guidelines and procedures to help ensure that the measure is as psychometrically sound as possible. These procedures are outlined in the psychometric literature, and the discussion that follows borrows heavily from this literature. Also, the discussion that follows should not be interpreted as a definitive guide to scale development. (e.g., Churchill 1979; Clark and Watson 1995; Cortina 1993; DeVellis 2003; Netemeyer, Bearden, and Sharma 2003; Nunnally and Bernstein 1994; Peter 1979, 1981; Robinson, Shaver, and Wrightsman 1991).

First, the scale is developed based on a solid theoretical definition with the construct's domain thoroughly delineated and outlined. This definition and attendant description entail what is included in the domain of the construct, what is excluded from the construct's domain, and the *a priori* dimensionality of the construct's domain. The theoretical definition, the domain of the construct, and its dimensionality are derived from a thorough review of the existing literature and, ideally, expert opinion. (Bearden et al. 2011)

We have also evaluated the content validity of scale. Content and face validity reflect the extent to which a construct is translated into the operationalization of the construct (Trochim, 2002). Specifically, content validity represents the degree to which elements of

a measurement instrument are relevant to and representative of the target construct for a particular assessment purpose (Haynes, Richard, and Kubany 1995). Face validity, then, represents one aspect of content validity (Nunnally and Bernstein 1994).

Evidence of face validity is measured by 1) post hoc evaluation that the items in a scale adequately measure the concept (Rossiter 2002) and 2) *a priori* theoretical item generation and judging efforts. In scale development then, it is generally recommended that a number of items be generated that tap the domain of the construct, that the items be screened by judges with expertise in the literature, and that several pilot tests on samples from relevant populations be conducted to trim and refine the pool of items (Churchill 1979; DeVellis 2003; Netemeyer et al. 2003). Furthermore, shorter and simpler items (ones that are easier to process and understand) are generally easier to respond to and are more reliable (Churchill 1979; Churchill and Peter 1984; Converse and Presser 1986; DeVellis 2003; Netemeyer et al. 2003; Sudman and Bradburn 1982).

4.6 Reliability

There are two broad types of reliability referred to in the psychometric literature: 1) test-retest, the correlation between the same person's score on the same set of items at two points in time, and 2) internal consistency, the correlation among items or sets of items in the scale for all who answer the items.

4.6.1 Test-Retest

The stability of a respondent's item responses over time has not been assessed in scale use or development as frequently as internal consistency. This has been the case across disciplines (Robinson et al. 1991), and marketing and consumer behaviour are no exceptions. Less than half of the scales in this text offer test-retest coefficients, but the overwhelming majority offer some estimate of internal consistency. It is unfortunate that test-retest estimates are available for so few of the scales in the marketing and consumer behaviour literature. Researchers planning scale development work should give *a priori*

consideration to assessing test-retest reliability in addition to other procedures of evaluating reliability and validity.

4.6.2 Internal Consistency

Items composing a scale (or subscale) should show high levels of internal consistency. Some commonly used criteria for assessing internal consistency are individual corrected item-to-total correlations, the inter-item correlation matrix for all scale items or items proposed to measure a given scale dimension, and a number of reliability coefficients (Churchill 1979; Cortina 1993; DeVellis 2003; Netemeyer et al. 2003; Nunnally and Bernstein 1994). A rule of thumb for corrected item-to-total correlations is that they should be 0.50 or greater to retain an item (e.g., Bearden, Netemeyer, and Teel 1989). Rules of thumb for individual correlations in the interitem correlation matrix vary. For example, Robinson et al. (1991) recommend levels of 0.30 or better as exemplary, and Clark and Watson (1995) suggest 0.40 to 0.50 for narrowly defined constructs.

The most widely used internal consistency reliability coefficient is Cronbach's (1951) coefficient alpha. (Others, such as split-halves and rank-order coefficients are available, but we will limit our discussion to coefficient alpha given its widespread use.) A number of rules of thumb for what constitutes an acceptable level of coefficient alpha also exist. Some estimates go as low as 0.70 or 0.60 (Robinson et al. 1991). Regardless, scale length must be considered. As the number of items increases, *ceteris paribus,* alpha will tend to increase, and since parsimony is also a concern in measurement (Clark and Watson 1995; Cortina 1993; Netemeyer et al. 2003), an important question is "How many items does it take to measure a construct?" The answer to this question depends partially on the domain and dimensions of the construct. Naturally, a construct with a wide domain and multiple dimensions will require more items to adequately tap the domain/dimensions than a construct with a narrow domain and few dimensions. However, given that most scales are self-administered and respondent fatigue and/or non-cooperation need to be considered, scale brevity is often a concern (Churchill and Peter 1984; Cortina 1993;

DeVellis 2003; Nunnally and Bernstein 1994; Peterson 1994; Richins 2004; Stanton et al. 2002).

With structural equation modelling, other tests of internal consistency are available. Composite reliability, which is similar to coefficient alpha, can be calculated directly from the LISREL, EQS, or AMOS output (Fornell and Larcker 1981). A more stringent test of internal stability involves assessing the amount of variance captured by a construct's measure in relation to the amount of variance due to measurement error. A rigorous rule of thumb is that the variance extracted by the construct's measure is > 0.50 (Fornell and Larcker 1981). By using a combination of the criteria above (i.e., corrected item-to-total correlations, examining the inter item correlation matrix, coefficient alpha, composite reliability, and variance extracted estimates), scales are developed in an efficient manner that maximizes both internal consistency and content validity.

4.7 Construct Validity

Beyond content validity, dimensionality, and reliability, a number of other validity issues have been considered in scale use and development, including convergent, discriminant, nomological, and known group validity. (These types of validity have been collectively referred to as construct validity.) Again, a number of procedures and rules of thumb exist and should be considered.

4.7.1 Convergent, Discriminant, and Nomological Validity

Convergent validity refers to the degree to which two measures designed to measure the same construct are related. Convergence is found if the two measures are highly correlated. Discriminant validity assesses the degree to which two measures, designed to measure similar but conceptually different constructs, are related. A low to moderate correlation is often considered evidence of discriminant validity.

Multitrait-multimethod matrices (MTMM) have often been used to assess convergent and discriminant validity where maximally different measurement methods (e.g., self report vs. observational) are required (Campbell and Fiske 1959; Churchill 1979; Peter 1981).

An early advocated rule of thumb for convergent validity is that the correlation between two measures designed to assess the same construct should be statistically significant and "sufficiently large to encourage further examination of validity" (Campbell and Fiske 1959). Early advocated criteria for discriminant validity were 1) entries in the validity diagonal should be higher than the correlations that occupy the same row and column in the heteromethod block, 2) convergent validity coefficients should be higher than the correlations in the heterotrait mono-method triangles, and 3) the pattern of correlations should be the same in all the heterotrait triangles (Campbell and Fiske 1959). Though these criteria have been criticized as problematic and vague (Peter 1981), they do offer some guidance as to what constitutes convergent and discriminant validity. Also, our discussion of MTMM here has been extremely brief and over-simplified, and we strongly urge the reader to consult the original source (Campbell and Fiske 1959) and a number of critical evaluations and updates (e.g., Bagozzi, Yi, and Phillips 1991; Kenny and Kashay 1992; Kumar and Dillon 1992; Lance, Noble, and Scullen 2002; Schmitt and Stults 1986).

Nomological validity has been defined as the degree to which predictions from a formal theoretical network containing the concept under scrutiny are confirmed (Campbell 1960). It assesses the degree to which constructs that are theoretically related are actually empirically related (i.e., their measures correlate significantly in the predicted direction). As with internal consistency, structural equation packages have been used to assess the convergent, discriminant, and nomological validity of scale measures. MTMM procedures via structural equations are tenable where variance in the measures is partitioned as trait, method, and error variance (e.g., Bollen 1989; Kenny and Kashay 1992; Kumar and Dillon 1992; Lance et al. 2002; Schmitt and Stults 1986; Widaman 1985). Convergent and discriminant validity can be assessed via chi-square maximum likelihood tests and related fit statistics.

Similarly, the empirical relationships among theoretically related measures (nomological validity) can also be assessed with structural equation models. Several books (e.g., Bollen 1989; Hoyle 1995; Schumacker and Lomax 2004) and classic articles (e.g., Anderson and

Gerbing 1988; Bagozzi et al. 1991) illustrate modelling techniques, evaluative criteria, and rules of thumb for what constitutes an acceptable level of validity.

4.7.2 Known Group Validity

Known group validity asks the question "Can the measure reliably distinguish between groups of people who should score high on the trait and low on the trait?" As examples, a person who is truly conservative should score significantly higher on a conservatism scale than a person who is liberal, and salespeople in the retail car business and the large computer business should differ in their levels of customer orientation (Saxe and Weitz 1982). Thus, mean score differences between groups for a given measure can be used as evidence of known group validity. An excellent application of known group validity testing can be found in Jarvis and Petty (1996).

In our study, we have employed Cronbach's alpha test for measuring reliability of survey. The overall Cronbach's alpha value in our study was .929.We applied this reliability statistics on 28 independent / observed variables. Most of value of reliability statistics was more than 0.9. We analyzed our data by employing descriptive statistics and factor analysis. For the study, the entire analysis is done by personal computer (PC). A well known statistical package SPSS (Statistical Package for Social Sciences) 20 Version was used in order to analyze the data.

5.1 Producers Opinion

Table 5.1: Age (in Years)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 30	15	25.0	25.0	25.0
	31-35	15	25.0	25.0	50.0
	36-45	10	16.7	16.7	66.7
	46-55	10	16.7	16.7	83.3
	>55	10	16.7	16.7	100.0
	Total	60	100.0	100.0	

Table 5.1 shows that 25 percent of the respondents belong to age group less than 30, 25 percent of the respondents belong to age group 31 to 35 years, 16.7 percent of the respondents belong to age group 36 to 45 years, 16.7 percent of the respondents belong to age group 46 to 55 years and 16.7 percent of the respondents belong to age group above 55 years.

Table 5.2: Year of Schooling

	Frequency	Percent	Valid Percent	Cumulative Percent
0	52	86.7	86.7	86.7
1-10	4	6.7	6.7	93.3
11-15	2	3.3	3.3	96.7
>15	2	3.3	3.3	100.0
Total	60	100.0	100.0	

Table 5.2 shows that 86.7 percent respondents illiterate, 6.7 percent respondents completed 1 to 10 years of schooling, 3.3 percent respondents completed 11 to 15 years of schooling and 3.3 percent respondents completed more than 15 years of schooling.

Table 5.3: Farm Income (Monthly)(Taka)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up to 2500	1	1.7	1.7	1.7
	2501-5000	7	11.7	11.7	13.3
	5001-10000	11	18.3	18.3	31.7
	10001-20000	17	28.3	28.3	60.0
	20001-35000	16	26.7	26.7	86.7
	35001-50000	6	10.0	10.0	96.7
	50001-100000	1	1.7	1.7	98.3
	Above 100000	1	1.7	1.7	100.0
	Total	60	100.0	100.0	

Table 5.3 shows that 1.7 percent respondents earn up to 2500 Tk., 11.7 percent respondents belong to income group 2501-5000Tk., 18.3 percent respondents belong to income group 5001-10000Tk., 28.3 percent respondents belong to income group 10001-20000Tk, 26.7percent respondents belong to income group 20001-35000Tk, 10 percent respondents belong to income group 35001-50000Tk, 1.7 percent respondents belong to income group 50001-100000Tk and 1.7 percent respondents earn above 100,000Tk.

Table 5.4: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	12	20.0	20.0	20.0
	Male	48	80.0	80.0	100.0
	Total	60	100.0	100.0	

Table 5.4 shows that 12 percents respondents were female and 80 percent respondents were male.

Table 5.5: Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	13	21.7	21.7	21.7
	Married	42	70.0	70.0	91.7
	Divorced	3	5.0	5.0	96.7
	Widow	2	3.3	3.3	100.0
	Total	60	100.0	100.0	

Table 5.5 shows that 21.7 percent respondents were single, 70 percent respondents were married, 5 percent respondents were divorced and 3.3 percent respondents were widow.

Table 5.6: Farming/Experience(Years)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 20	19	31.7	31.7	31.7
	21-40	21	35.0	35.0	66.7
	41-60	19	31.7	31.7	98.3
	> 60	1	1.7	1.7	100.0
	Total	60	100.0	100.0	

Table 5.6 shows that 31.7 percent farmers acquire less than 20 years of farming experience, 35 percent farmers acquire 21 to 40 years of farming experience, 31.7 percent farmers acquire 41 to 60 years of farming experience and 1.7 percent farmers acquire more than 60 years of farming experience.

Table 5.7: Farm Size (acres)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small farm(0.05-2.49 acres)	41	68.3	68.3	68.3
	Medium farm(2.50-7.49 acres)	18	30.0	30.0	98.3
	Large farm(7.50 acres and above)	1	1.7	1.7	100.0
	Total	60	100.0	100.0	

Table 5.7 shows that 68.3 percent farmers belong to small farm groups, 30 percent farmers belong to medium farm groups and 1.7 farmers belong to large farm groups.

Table 5.8: Land Tenure/Ownership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Personal	19	31.7	31.7	31.7
	Rented	39	65.0	65.0	96.7
	Others	2	3.3	3.3	100.0
	Total	60	100.0	100.0	

Table 5.8 shows that 31.7 percent farmers own personal land, 65 percent farmers plough rented land and 3.3 percent farmers plough others category land.

Table 5.9: Non-farming Activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	46	76.7	76.7	76.7
	Yes	14	23.3	23.3	100.0
	Total	60	100.0	100.0	

Table 5.9 shows that 76.7 percent farmers didn't involve with any non-farming activities and on the other hand, 23.3 percent respondents involve with non-farming activities.

Table 5.10: Comparative cost and return of vegetables producer (per hectare)

Items	**Unit**	**Brinjal**		**Cauliflower**		**Cabbage**		**Tomato**	
		Quantity	Tk.	Quantity	Tk.	Quantity	Tk.	Quantity	Tk.
A. Gross returns	Kg/ Piece	24,175	484,500	25,774	347,028	34,707	494,140	27,345	567467
Variable Cost									
Human labor	Man/ day	315	82019 (33.99)	141	88887 (54.75)	392	101920 (49.92)	372	120000 (58.39)
Animal labor /Power Tiller	Tk.				5400 (3.36)		3027 (1.48)		4050 (1.97)
Land Preparation	Tk.		11708 (4.85)		3000 (1.85)				
Seeds	Kg	1.71	15446 (6.40)	41.8	2090 (1.28)	0.3	3900 (1.91)	1.4	3100 (1.51)
Urea	Kg	278	5563 (2.30)	48.75	975 (0.60)	377	7540 (3.69)	287	5600 (2.72)
TSP	Kg	236	8274 (3.43)	81.71	3000 (1.85)	245	8575 (4.20)	345	10450 (5.08)
DAP	Kg	122	4293 (1.78)	23.41	796 (0.49)	250	8500 (4.16)	56.5	2120 (1.03)
MP	Kg	64	1800 (0.74)	53.57	1500 (0.92)	260	4680 (2.29)	86.24	1740 (0.84)
Gypsum	Kg	13	337 (0.14)	5.04	126 (0.08)	100	1000 (0.48)	11.25	112 (0.05)
Cow dung	Kg	15248	11436 (4.73)	7657	5743 (3.54)	6540	5770 (2.82)	6600	4345 (2.11)
Boron	Kg	36	2948 (1.22)						
Zinc	Kg	135	5287 (2.19)						
Irrigation Charge	Tk.		14377 (5.95)		7475 (4.60)		6739 (3.30)		4350 (2.17)
Insecticides	Tk.		28580 (11.84)		11884 (7.32)		2500 (1.22)		6000 (2.92)
B.Total Variable Cost	**Tk.**		**192068 (79.60)**		**130876 (80.62)**		**154152 (75.50)**		**161867 (78.76)**
Land use cost	Tk.		44909 (18.62)		29940 (18.44)		45000 (22.04)		42000 (20.43)
Interest on Capital	Tk.		4298 (1.78)		1521 (0.93)		5000 (2.45)		1645 (0.80)
C. Total Fixed Cost	Tk.		49207 (20.40)		31461 (19.38)		50000 (24.49)		43645 (21.23)
D. Gross Cost (B+C)	**Tk.**		**241277 (100)**		**162337 (100)**		**204152 (100)**		**205512 (100)**
E. Gross margin (A-B)	**Tk.**		**292432**		**216152**		**339988**		**405600**
F. Net returns(A-D)	**Tk.**		**243223**		**184691**		**289988**		**361955**
G. BCR (A/D)			2.008		2.14		2.42		2.76

Source: Field Survey

A comparison has been made to assess per hectare relative profitability of growing brinjal, cauliflower, cabbage and tomato. The table 5.10 shows that net returns of tomato were higher than brinjal, cauliflower and cabbage. On the other hand, cost of production per hectare was higher for brinjal than for tomato, cauliflower and cabbage.

5.2 Middlemen Opinion

Table 5.11: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	32	80.0	80.0	80.0
	Female	8	20.0	20.0	100.0
	Total	40	100.0	100.0	

Table 5.11 depicts that 80 percent middlemen were male and 20 percent middlemen were female.

Table 5.12: Educational Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Illiterate	21	52.5	52.5	52.5
	Primary	13	32.5	32.5	85.0
	Secondary	4	10.0	10.0	95.0
	Higher Secondary	1	2.5	2.5	97.5
	Above Higher Secondary	1	2.5	2.5	100.0
	Total	40	100.0	100.0	

Table 5.12 shows that 52.5 percent middlemen were illiterate, 32.5 percent middlemen completed up to primary level of education , 10 percent middlemen completed up to

secondary level, 2.5 percent middlemen completed up to higher secondary level and 2.5 percent middlemen completed above higher secondary level of education.

Table 5.13: From Whom to Purchased

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Farmer	10	25.0	25.0	25.0
	Trader	11	27.5	27.5	52.5
	Commission Agent	11	27.5	27.5	80.0
	Cold Storage	4	10.0	10.0	90.0
	Others	4	10.0	10.0	100.0
	Total	40	100.0	100.0	

Table 5.13 shows that 25 percent middlemen purchase vegetables from farmers, 27.5 percent middlemen purchase vegetables from traders, 27.5 percent middlemen purchase vegetables from commission agent, 10 percent middlemen purchase vegetables from cold storage and 10 percent middlemen purchase vegetables from other sources.

Table 5.14: To Whom to Sold

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Trader	12	30.0	30.0	30.0
	Commission Agent	12	30.0	30.0	60.0
	Retailer	9	22.5	22.5	82.5
	Consumer	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Table 5.14 shows that 30 percent middlemen sold vegetables to the traders, 30 percent middlemen sold vegetables to the commission agents, 22.5 percent middlemen sold vegetables to the retailers and 17.5 percent middlemen sold vegetables to the consumers.

Table 5.15: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age (Years)	40	23	65	40.02	12.998
Years of Experience in Current Profession	40	12	43	23.97	6.282
Valid N (list wise)	40				

Table 5.15 shows that mean age of the middlemen were 40 years and mean years of experience of middlemen were 24 years.

Table 5.16: Vegetables Frequencies

		Responses		Percent of Cases
		N	Percent	
Vegetables	Onion	18	9.7%	45.0%
	Tomato	24	13.0%	60.0%
	potato	30	16.2%	75.0%
	Cucumber	30	16.2%	75.0%
	Cauliflower	28	15.1%	70.0%
	Cabbage	28	15.1%	70.0%
	Carrot	16	8.6%	40.0%
	Brinjal	11	5.9%	27.5%
Total		185	100.0%	462.5%

Table 5.16 shows that 45 percent middlemen sold onion, 60 percent middlemen sold tomato, 75 percent middlemen sold potato, 75 percent middlemen sold cucumber, 70 percent middlemen sold cauliflower, 70 percent middlemen sold cabbage, 40 percent middlemen sold carrot and 27.5 percent middlemen sold brinjal.

Table 5.17: Vegetables Rural Wholesale Market Cost (Per quintal)

Cost factor	Brinjal (Tk.)	Cauliflower (Tk.)	Cabbage (Tk.)	Tomato (Tk.)
C1: Farmers Price	2100	1170	1320	1910
C2: Truck Rent	150	150	150	150
C3: Extra fee for overloading	40	40	40	40
C4: Unlawful money collection on road	40	40	40	40
C5: Cost of wastage				80
C6: Unlawful money collection at local wholesale market	40	40	40	40
C7: Fees at wholesale market	50	50	50	50
Rural Wholesale Market Cost	**2420**	**1490**	**1640**	**2310**

Source: Field Survey

Table 5.17 shows that both farmers price and rural wholesale market cost was higher in the case of brinjal compare to cauliflower, cabbage and tomato.

Table 5.18 Vegetables Urban Wholesale Market Cost (Per quintal)

Cost factor	Brinjal (Tk.)	Cauliflower (Tk.)	Cabbage (Tk.)	Tomato (Tk.)
C1: Rural wholesale market cost	**2420**	**1490**	**1640**	**2310**
C2: Truck Rent	334	334	334	334
C3: Extra fee for overloading	40	40	40	40
C4: Unlawful money collection on road	30	30	30	30
C5: Money for quick serial on ferri	20	20	20	20
C6: Cost of wastage for traffic jam & other reasons				120
C7: Unlawful money collection at Urban wholesale market	40	40	40	40

C8: Fees at urban wholesale market	40	40	40	40
Urban Wholesale Market Cost	**2924**	**1994**	**2144**	**2934**
Urban Retail Market Price	6000	3000	3500	7200
Middlemen Margin	**3036**	**1006**	**1356**	**4226**

Source: Field Survey

Table 5.18 shows that both urban wholesale market cost and middlemen margin was higher in tomato compare to brinjal, cauliflower and cabbage.

Table 5.19: Price variations of different vegetables in different super markets

Vegetables	**Unit**	**Wholesale Price (Tk)**	**Super Market Price(Tk)**			
			Prince Bazaar	**Meena Bazaar**	**Agora**	**Swapno**
Onion(Local)	Per Kg	23-28	30	38	40	38
Onion(Imported)	Per Kg	18-20	19	20	19	30
Potato	Per Kg	19-20	25	26	26	25
Brinjal	**Per Kg**	**30-50**	**64**	**80**	**75-80**	**70-85**
Pumpkin	Per Kg	20-22	30	32	29	38
Cucumber	Per Kg	30-35	29	40	45	55
Green Papaya	Per Kg	16-18	15	21	22	30
Carrots	Per Kg	24-30	-	110	100	85
Tomato	**Per Kg**	**50-55**	**75**	**85**	**80**	**80**
Cabbage	**Per Piece**	**15-20**	**25**	**27**	**30**	**25**
Okra	Per Kg	30-40	56	60	65	75
Cauliflower	**Per piece**	**15-20**	**25**	**30**	**25**	**25**

Source: Directorate of Agriculture Marketing, GOB, Date: 30th October 2016.

Table 5.19 shows that prince bazaar offered brinjal and tomato at lower price compare to other super markets.Both Agora and Meena bazaar charge higher price in the case of cabbage and cauliflower.

5.3 Consumers Opinion

Table 5.20: Age(in Years)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	≤ 30	21	6.3	6.3	6.3
	31-35	77	23.2	23.2	29.5
	36-45	**133**	**40.1**	**40.1**	69.6
	46-55	49	14.8	14.8	84.3
	>55	52	15.7	15.7	100.0
	Total	332	100.0	100.0	

Table 5.20 shows that 40 percent respondents belong to age group 36 to 45 years, 23 percent respondent belongs to 31 to 35 years and only 6 percent respondents belong to less than 30 years.

Table 5.21: Year of Schooling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	21	6.3	6.3	6.3
	1-10	49	14.8	14.8	21.1
	11-15	**129**	**38.9**	**38.9**	59.9
	>15	21	6.3	6.3	66.3
	Missing	112	33.7	33.7	100.0
	Total	332	100.0	100.0	

Table 5.21 shows that 39 percent respondents completed 11 to 15 years of education, around 15 percent respondents completed 1 to 10 years of education and only 6 percent respondent's illiterate.

Table 5.22: Monthly Income(in Taka)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upto 2500	1	.3	.3	.3

	2501-5000	1	.3	.3	.6
	5001-10000	1	.3	.3	.9
	10001-20000	**86**	**25.9**	**25.9**	26.8
	20001-35000	**87**	**26.2**	**26.2**	53.0
	35001-50000	66	19.9	19.9	72.9
	50001-100000	45	13.6	13.6	86.4
	Above 100000	45	13.6	13.6	100.0
	Total	332	100.0	100.0	

Table 5.22 depicts that 26 percent respondents belong to income group 20,001 to 35,000Tk. and 14 percent respondents earn more than 1,00,000Tk.

Table 5.23: Sources of Information

		Frequency	Percent	Valid Percent	Cumulative Percent
	TV advertisement	1	.3	.3	.3
	Newspaper	81	24.4	24.4	24.7
	Friends	4	1.2	1.2	25.9
	Seen on the Street	**123**	**37.0**	**37.0**	63.0
Valid	Magazine	24	7.2	7.2	70.2
	Radio	24	7.2	7.2	77.4
	Online/Social Media	50	15.1	15.1	92.5
	Others	25	7.5	7.5	100.0
	Total	332	100.0	100.0	

Table 5.23 shows that 37 percent respondents find information from seen on the street, 15 percent respondents get information from social media like face book, twitter etc. and only 1.2 percent respondents get information about super market from friends.

Table 5.24: Shopping Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Every day	2	.6	.6	.6
	Twice a week or more	**127**	**38.3**	**38.3**	38.9
	Once a week	87	26.2	26.2	65.1
	1-3 times a month	58	17.5	17.5	82.5
	Less than once a month	29	8.7	8.7	91.3
	Never	29	8.7	8.7	100.0
	Total	332	100.0	100.0	

Table 5.24 shows that 38 percent respondents purchase commodities from super market twice a week or more, 26 percent respondents purchase commodities from super market once a week and only 9 percent respondents purchase commodities from super market less than once a month.

Table 5.25: Number of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agora	153	46.1	46.1	46.1
	Swapno	95	28.6	28.6	74.7
	Meena Bazar	42	12.7	12.7	87.3
	Prince Bazar	42	12.7	12.7	100.0
	Total	332	100.0	100.0	

Table 5.25 depicts that 46 percent respondents purchase commodities from Agora, 29 percent respondents purchase commodities from Swapno and 13 percent respondents purchase commodities from Prince Bazar.

Table 5.26: Kinds of Goods Purchased

		Responses		Percent of Cases
		N	Percent	
Kinds of Goods Purchased	Toiletries	260	12.8%	78.3%
	Household amenities	144	7.1%	43.4%
	Confectionery	144	7.1%	43.4%
	Frozen food	120	5.9%	36.1%
	Drinks	264	13.0%	79.5%
	Processed food	96	4.7%	28.9%
	Fresh food	120	5.9%	36.1%
	Personal care products	192	9.4%	57.8%
	Ready to eat food	72	3.5%	21.7%
	Cloths	96	4.7%	28.9%
	Consumer durables	144	7.1%	43.4%
	Foot wear	120	5.9%	36.1%
	Vegetables	**260**	**12.8%**	**78.3%**
Total		2032	100.0%	612.0%

Table 5.26 depicts that 13 percent respondents purchase vegetables, 13percent respondents purchase drinks and 4 percent respondents purchase ready to eat food.

Table 5.27: Type of Vegetable Purchases

	Responses		Percent of Cases
	N	Percent	
Onion (local)	240	8.0%	72.3%
Onion (Indian)	284	9.5%	85.5%
Tomato	144	4.8%	43.4%
Potato	288	9.6%	86.7%
Brinjal	216	7.2%	65.1%
Cucumber	264	8.8%	79.5%
Cauliflower	264	8.8%	79.5%
Cabbage	144	4.8%	43.4%

	Carrot	264	8.8%	79.5%
	Lemon	288	9.6%	86.7%
	Green Chili	168	5.6%	50.6%
	Pottol	120	4.0%	36.1%
	Green Papaya	216	7.2%	65.1%
	Others	96	3.2%	28.9%
Total		2996	100.0%	902.4%

Table 5.27 depicts that 8.8 percent respondents purchase Cauliflower, 7.2 percent respondents purchase Brinjal and 4.8 percent respondents purchase Cabbage.

Table 5.28: Reliability Statistics

Cronbach's Alpha	N of Items
.929	28

	Cronbach's Alpha
Appropriates of Weight	.929
Self Service	.924
Guarantee of Quality	.923
Fixed Price	.921
Safe and Clean	.926
The ability to search for something unique	.933
One stop service	.935
Enjoyable and relaxing	.927
To buy everyday necessities	.923
Good service of sales persons	.923
Reasonable prices	.925
Freshness	.929
Quick examination of prices	.932
Curiosity	.923
Prestige/image	.931
Air conditioning	.923
Parking lot	.923
Scale of store	.920

Decorations and advertising at stores	.924
Return and adjustment	.932
Location of store	.933
Fashionable	.927
Convenience for shopping	.921
Well known brand names	.922
Variety of product lines	.924
Shopping atmosphere	.928
Availability of product	.931
Quick service	.921

Table 5.28 demonstrates the high internal consistency of the constructs and their stability (Nunnally and Bernstein 1994). In each case, Cronbach's alpha far exceeded Nunnally and Bernstein's (1994) recommendation of 0.7 and Bagozzi and Yi's (1988) of 0.6.Thus, the scales are sufficiently reliable for data analysis.

Table 5.29: Communalities

	Initial	Extraction
Appropriates of Weight	1.000	.730
Self Service	1.000	.890
Guarantee of Quality	1.000	.771
Fixed Price	1.000	**.905**
Safe and Clean	1.000	.825
The ability to search for something unique	1.000	.801
One stop service	1.000	.700
Enjoyable and relaxing	1.000	.845
To buy everyday necessities	1.000	.884
Good service of sales persons	1.000	.800
Reasonable prices	1.000	.831
Freshness	1.000	.895
Quick examination of prices	1.000	.842
Curiosity	1.000	.805
Prestige/image	1.000	.831
Air conditioning	1.000	**.906**
Parking lot	1.000	.749
Scale of store	1.000	**.937**
Decorations and advertising at stores	1.000	**.918**

Return and adjustment	1.000	.868
Location of store	1.000	.847
Fashionable	1.000	.782
Convenience for shopping	1.000	**.905**
Well known brand names	1.000	**.935**
Variety of product lines	1.000	.885
Shopping atmosphere	1.000	**.955**
Availability of product	1.000	.896
Quick service	1.000	**.907**

Extraction Method: Principal Component Analysis.

Table 5.29 shows that Shopping atmosphere (.955), Scale of store (.937), Well known brand names (.935) and Decorations and advertising at stores (.918) are important independent variables due to high commonalities scores.

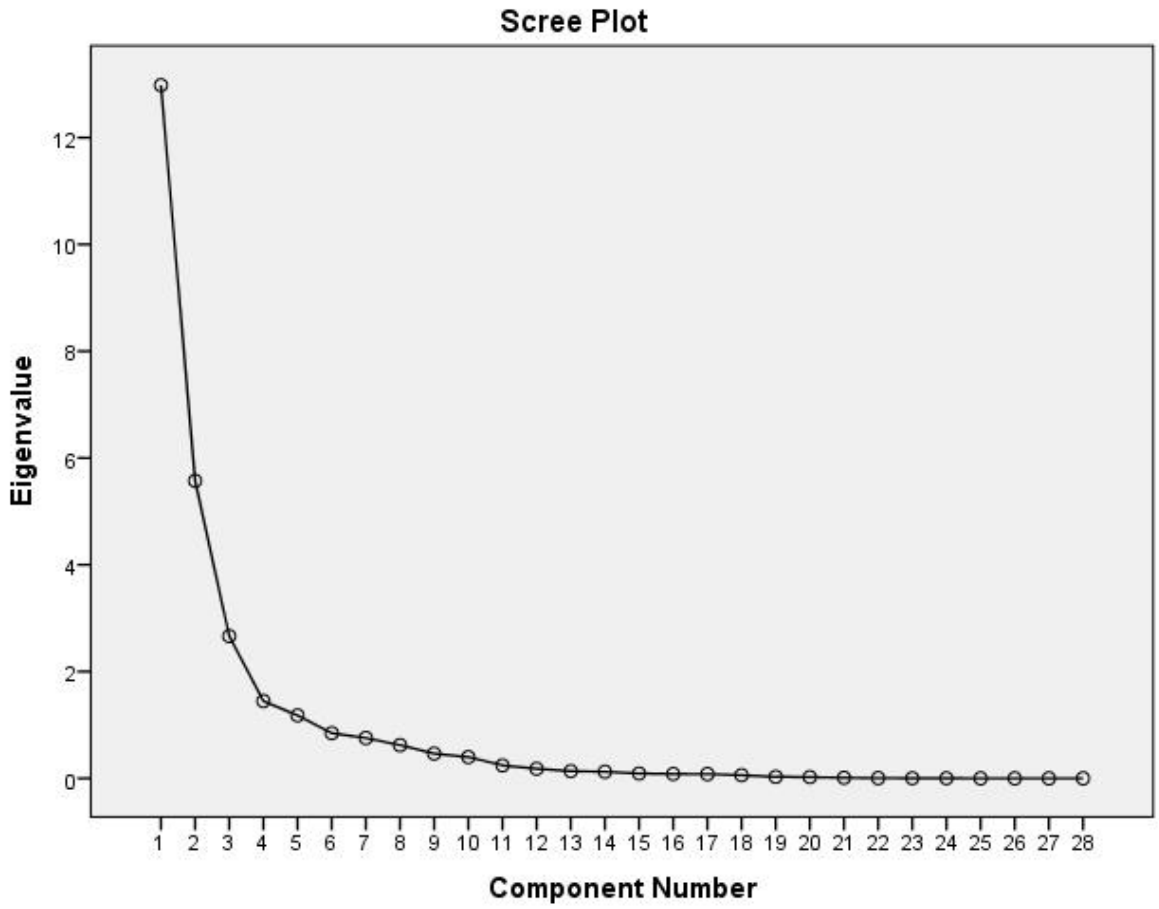
Table 5.30: Eigen Values

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	**12.981**	**46.361**	**46.361**
2	**5.573**	**19.903**	**66.264**
3	**2.663**	**9.512**	**75.776**
4	**1.449**	**5.174**	**80.950**
5	**1.179**	**4.210**	**85.160**
6	.846	3.022	88.182
7	.756	2.700	90.882
8	.622	2.222	93.104
9	.463	1.654	94.759
10	.399	1.423	96.182
11	.243	.868	97.050
12	.179	.638	97.688
13	.136	.487	98.174
14	.125	.446	98.620
15	.092	.329	98.949
16	.081	.291	99.240
17	.080	.285	99.526
18	.059	.210	99.735

19	.029	.104	99.840
20	.023	.082	99.922
21	.012	.045	99.967
22	.005	.017	99.984
23	.003	.009	99.993
24	.002	.007	100.000
25	6.980E-016	2.493E-015	100.000
26	-5.121E-016	-1.829E-015	100.000
27	-6.783E-016	-2.422E-015	100.000
28	-1.625E-015	-5.805E-015	100.000

Table 5.30 shows all the factors extractable from the analysis along with their eigenvalues, the percent of variance attributable to each factor, and the cumulative variance of the factor. Notice that the first factor accounts for 46.36% of the variance, the second 19.903%, the third 9.512%, the fourth 5.174% and the fifth 4.210%. Results also show that there are fifth factors that influence to select super market. The factors having latent roots or Eigen values greater than 1 are considered significant; all factors with latent roots less than 1 are considered insignificant and are disregarded (Hair et al., 2003).These factors together explain about 85 percent of the variance indicating higher level of importance of the factors (Table 5.30).

Figure 5.1: Scree Plot



The scree plot is a graph of the eigenvalues against all the factors. The graph is useful for determining how many factors to retain. The point of interest is where the curve starts to flatten. It can be seen that the curve begins to flatten between factors 6 to 28. Note also that factor 6 has an eigenvalue of less than 1, so only five factors have been retained (Figure 5.1).

Table 5.31: Rotated Component Matrix[a]

Table 5.31: Rotated Component Matrix[a]	Component				
	Necessities and Cleanliness	Quality and Environment	Availability and Price examination	Image and Store location	Enjoyable and fashionable
To buy everyday necessities	**.901**	.116	-.146	.040	.189
Safe and Clean	**.890**	.085	.003	.161	-.010
Convenience for shopping	**.864**	.337	.080	.128	.151
Fixed Price	**.859**	.363	.106	.118	.104
Decorations at stores	**.830**	.361	.210	.231	-.032
Scale of store	**.794**	.525	.162	.060	.034
Curiosity	**.750**	.284	-.009	.150	.373
Quick service	**.743**	.444	.182	.194	.295
Good service of salesmen	**.629**	.250	.482	.065	.324
Well known brand names	**.623**	.346	.552	.178	.300
Reasonable prices	**.528**	.516	-.367	-.019	.388
Guarantee of Quality	.338	**.751**	.148	.021	.266
Air conditioning	.549	**.735**	-.200	.122	.097
Self Service	.470	**.732**	-.317	.080	.161
Parking lot	.416	**.717**	.158	-.022	.191
Variety of product lines	.495	**.626**	-.305	-.160	.358
Availability of product	.130	-.010	**.917**	-.195	-.021
Quick examination of prices	.086	-.083	**.880**	-.223	.067
Freshness	.309	.335	**-.641**	.485	.204
Return and adjustment	.353	-.001	**.624**	-.331	-.494
Shopping atmosphere	.286	.491	**-.559**	.479	.300
Prestige/image	.146	.268	-.045	**.849**	-.121
Location of store	-.198	.274	.236	**-.818**	.092
One stop service	-.226	.024	.164	**-.788**	-.003
Appropriates of Weight	.101	.542	-.177	**.622**	-.088
The ability to search for something unique	.234	.147	.458	**-.585**	-.416
Enjoyable and relaxing	.351	.245	.016	-.048	**.812**
Fashionable	.260	.257	-.043	-.167	**.787**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

Principal component factor analysis with rotated factor loadings (Table 5.31) was performed on the survey data. Principal Component Analysis (PCA) is the commonly used method for grouping the variables under few unrelated factors. Variables with a factor loading of higher than 0.5 are grouped under a factor. A factor loading is the correlation between the original variable with the specific factor and the key to understanding the nature of that particular factor (Debasish, 2004). Table 31 provides the rotated factor loadings against the 28 observed variables. Moreover, Factor analysis using Varimax rotation finds five derived factors. Factor 1 named as 'Necessities and Cleanliness' consisted of eleven variables. Factor 2 named as 'Quality and Environment'. The factor is constituted by five variables. Factor 3 named as 'Availability and Price examination'. The factor is constituted by five variables. Factor 4 named as 'Image and Store location'. This factor consists of five variables. Factor 5 named as 'Enjoyable and fashionable'. This factor consists of two variables.

5.4 Chapter Summary

The chapter highlights the demographic and socioeconomic background (age, gender, educational background, marital status, farm income) of the farmers. Moreover, the chapter focuses on farming experience, farm size, land tenure, non-farming activities, cost and return of vegetable producers. The chapter also demonstrates gender, educational background, age, purchase and sell, years of experience, type of vegetables sold, cost and margin of middlemen. The chapter also illustrates price variations of different vegetables in different super markets. The chapter shows that age, year of schooling, monthly income, shopping frequency, types of vegetables purchased by customers. For selecting supermarkets, customers considered number of independent variables. Based on independent variables, we apply reliability test and factor analysis techniques.

6.1 Introduction

Nearly 100 different types of vegetables comprising both local and exotic types are grown in Bangladesh. Some major vegetables are egg plants, cucumbers, yard long bean, okra, radish, cauliflower, cabbage, tomato, beans, aroids, carrot, leafy vegetables etc. It is mentionable that the farmers engaged in vegetable production earn higher than cereal crop grower. Vegetables like eggplant, cauliflower, cabbage and pumpkin give return at least three times higher than rice. But there is still a gap between the estimated demand, at 11.68 million metric tons (MT), and supply, hovering at around 3.50 million MT, which is vast.

Vegetable farming in Bangladesh can be grouped into 3 categories based on scale of production and objectives of farming:

1. Vegetable production on homestead
2. Vegetable production for commercial market, and
3. Vegetable farming for seed production.

Since this study was on forward market, the commercial vegetable production was taken into special consideration.

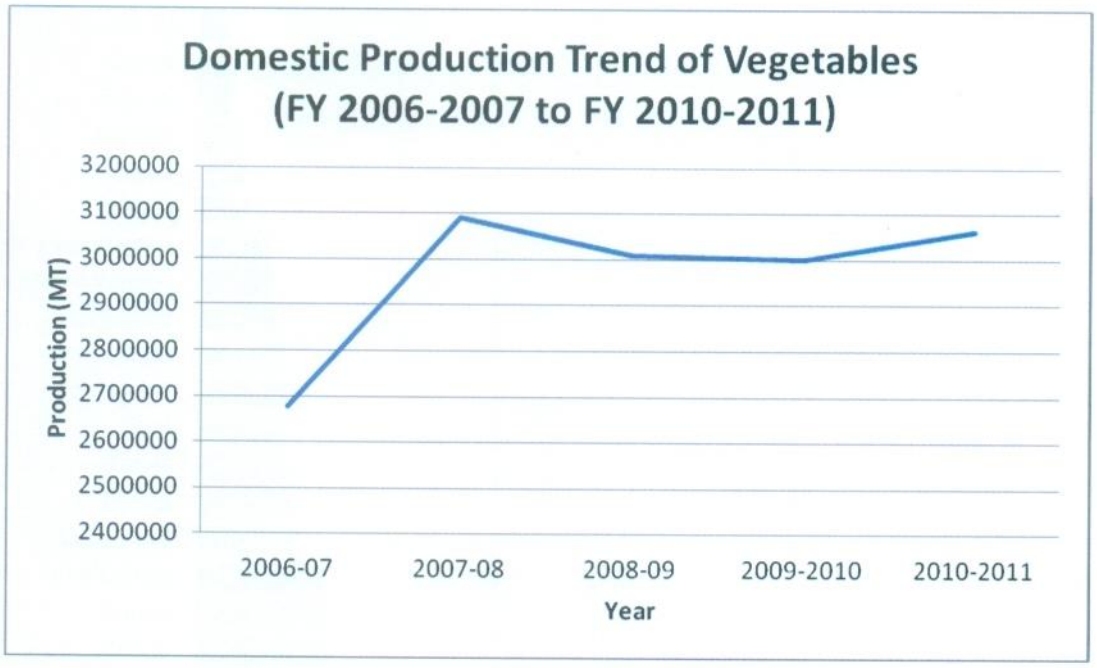
Because of seasonality vegetables are categorized as winter and summer vegetables though the major portion of the vegetables is grown in winter season (60% land under vegetable). Some year round of distinct varieties and species are also available5.Though vegetable has market value both in domestic and export markets, the farmers do not get proper price for their products due to improper marketing system of agricultural products (Georgy, 2016).

6.2 Production Scenario of vegetables

In Bangladesh there are more than 100 types of vegetables which are grown by farmers. The trend line shows that the annual domestic production of vegetables is increasing annually. The sharp rise in production from FY 2006-2007 onwards was due to the

introduction of hybrid varieties of vegetables.

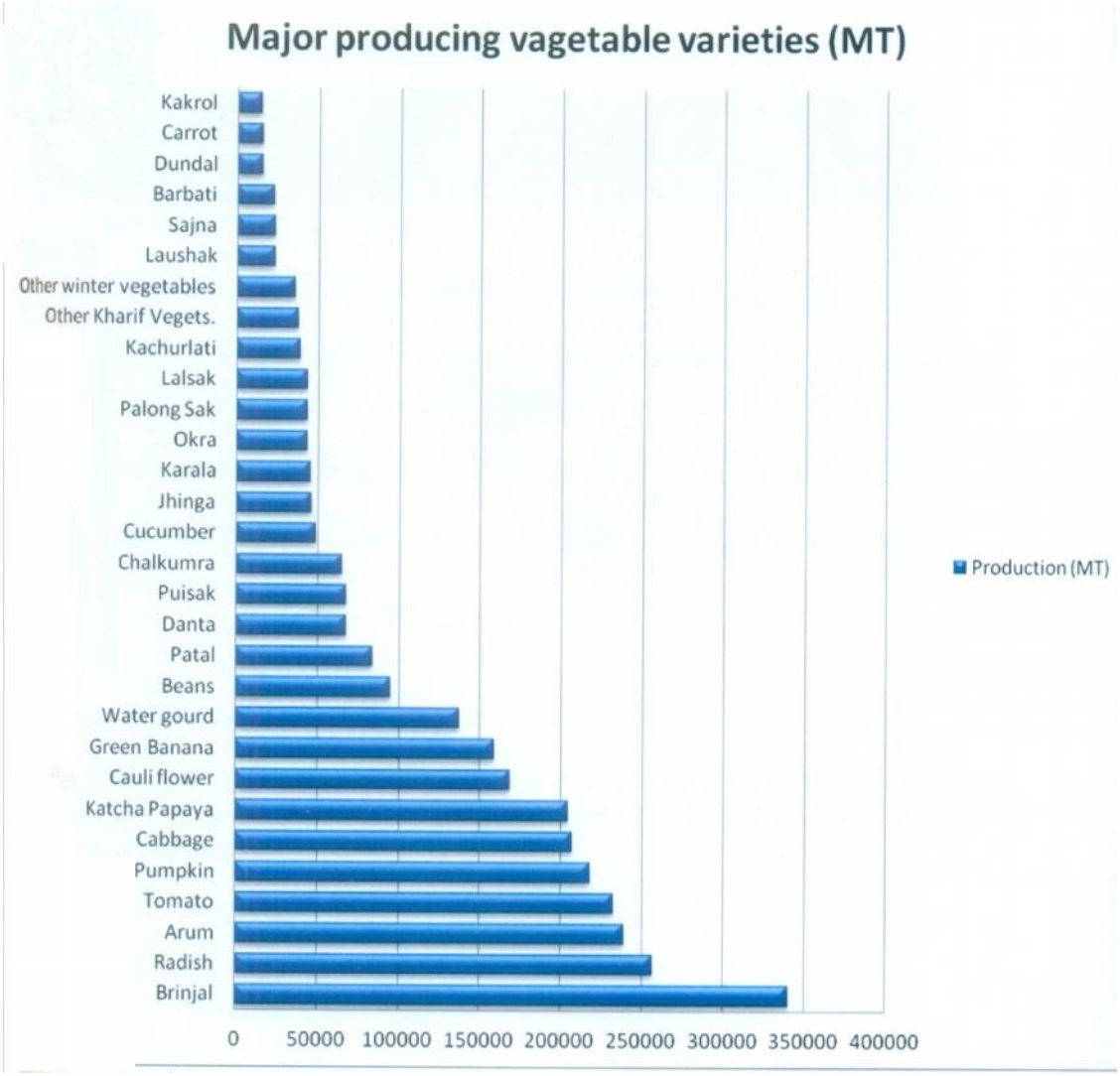
Fig 6.1: Domestic Production Trends of Vegetables



Source: Agricultural Statistics Yearbook 2010-2011, Bangladesh Bureau of Statistics.

The 30 major vegetables which are grown is shown in the graph below, which shows the total crop wise production of vegetables for the FY 2010-2011 in ascending order.

Fig 6.2: Major Producing Vegetable Varieties (Metric tons)



Total crop wise production of vegetables for the FY 2010-2011 (ascending order)

Source: Agricultural Statistics Yearbook 2010-2011, Bangladesh Bureau of Statistics.

From the above graph a selection/short-listing of the top 20 major vegetables (in terms of production) can be done. These top 20 vegetables are shown in the table below:

Table 6.1: Total annual production (FY 2010-2011) of top 20 vegetables in descending order

SL	Vegetable	Production (MT)	SL.	Vegetable	Production (MT)
1	Brinjal	339,874	11	Beans	94,756
2	Radish	256,711	12	Patal	83,246
3	Arum	238,645	13	Danta	67,358
4	Tomato	232,459	14	Puisak	66,994
5	Pumpkin	218,167	15	Chalkumra	64,898
6	Cabbage	206,851	16	Cucumber	48,448
7	Katcha Papaya	204,221	17	Jhinga	45,942
8	Cauli flower	168,238	18	Karala	45,097
9	Green Banana	158,365	19	Okra	43,212
10	Water gourd	137,301	20	PalongSak	43,193

Source: Agricultural Statistics Yearbook 2010-2011, Bangladesh Bureau of Statistics.

6.3 Major Trading Hubs

There is an extensive network of agricultural markets across Bangladesh with diverse economic activities and market players including producers, traders, wholesalers, and retailers. The major landing centers are the regional! semi-urban/ urban/distant market arots/haats. According to to the Upazilla-based Local Government Engineering Department (LGED) of Bangladesh, there are 17,121 rural markets, while a survey by the Department of Agricultural Marketing (DAM) states there are 16, 476 rural markets.

A rural vegetable landing center in Jessore

The farmers and forias bring their vegetables to the regional/ semi-urban arots/haats to sell to baparis/arotdars, who then send these vegetables to the urban/distant market arots. While the core function of the arots/haats is to facilitate trade in a geographic area, some of the activities of these arots/haats vary from place to place based on geographic, social, economic, value chain governance and other dynamics, especially when considering the rural and urban/ distant market arots (Georgy, 2016).

Rural/Regional

Hoots are one of the most basic and predominant units of rural market organization as well as the economic, social, and cultural centers of village life. Generally held in the

open air, rural arots/haats provide the first-contact point with an organized market system and provide the basic physical venue and processes for buyers and sellers of all sizes to congregate, exchange information and perform transactions.

6.3.1 A rural vegetable landing center

These are big landing centers around most of the production clusters throughout the country where bulk transactions take place. Wide open spaces both semi-structured and unstructured are used as a rots for bulk transaction in different locations.

Haats also play vital role in the rural economy by allowing producers and farmers to procure essential inputs and raw materials, avail services, gather market information, and sell produce through retail or wholesale trading. Haats have also been used as promotional platforms to raise mass awareness for both commercial marketing (brand activation, demos) and social marketing (family planning, health).

6.3.2 Urban landing/National landing center

Urban landing centers are the landing hubs for produces arriving from various rural landing centers. In other words these are the distant market arots, which provides a trading platform for rural traders in the urban market. Examples of major urban landing centers can be Dhaka's Karwan bazaar and Jatrabari arot.

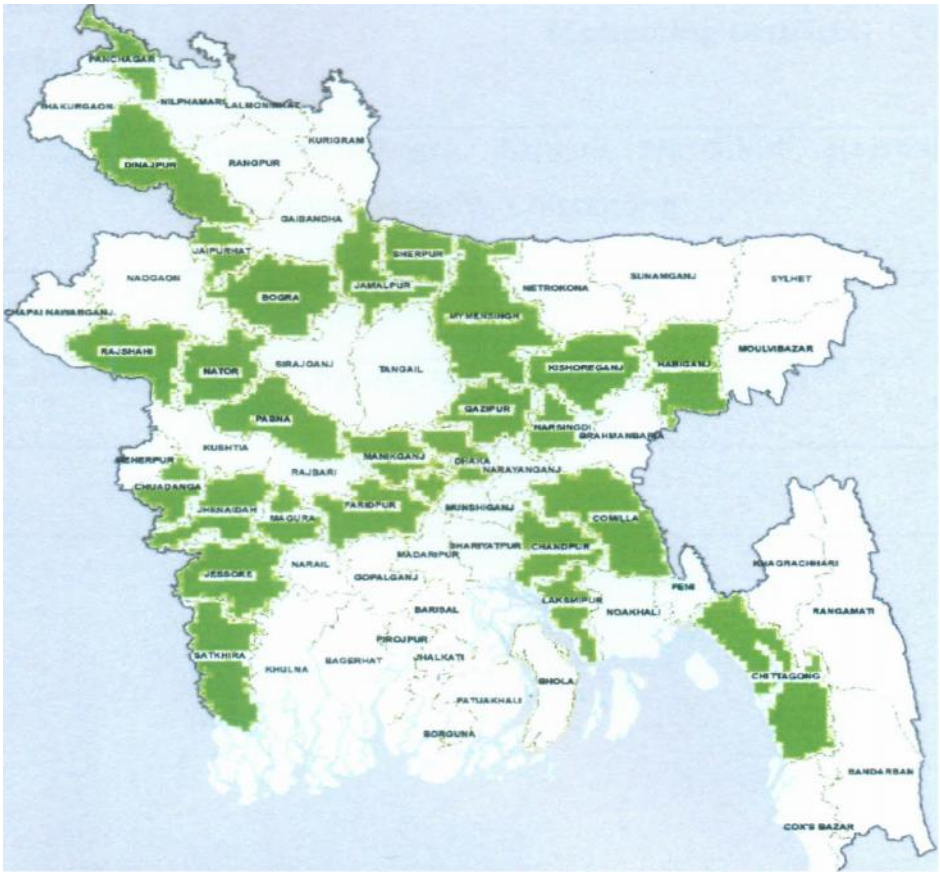
An Urban landing center at Jatrabari in Dhaka

Baparis send their produces to the urban/distant market arots where usually the arotdars trade on behalf of the baparis (for a commission). The baparies usually get their money from arotdars through bank TT, Bkash or S A Poribohan. However, sometimes the baparis themselves come to the landing centers and use the arotdar's space (in return for a commission) to do their trading.

The map below shows the locations of all the major trading hubs/ landing centers for vegetables (both rural & urban) in the country.

Fig 6.3: Locations of all major trading hubs/landing centers in Bangladesh

Locations of all major trading hubs/land landing centers for vegetables (both rural & urban) in the country.



Source: Agricultural Statistics Yearbook 2010-2011, Bangladesh Bureau of Statistics.

6.4 Vegetable Forward Market movement Scenario

According to the available data, it was found that around 10% of the produces are consumed at grower level, 30% at local level, 30% at district level and remaining 30% at distant markets. The vegetable movement map derived from analyzing primary and secondary data is as follows:

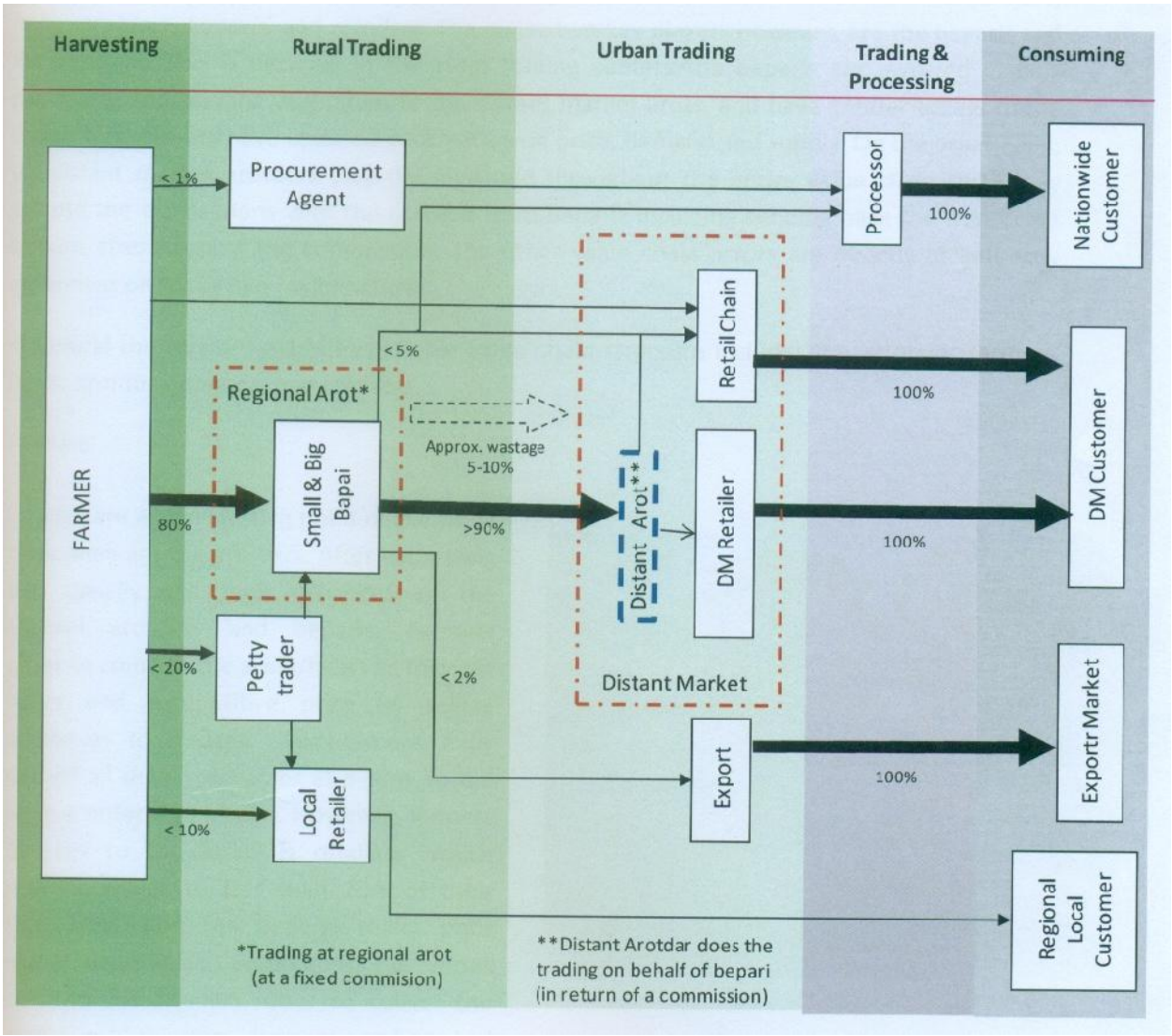
The movement map shows that Dhaka, Chittagong, Sylhet and Barisal are the prime districts at the receiving end where all the urban landing centers are situated and these districts receive. The table below shows major movement scenario.

Table 6.2: Local/ Rural Landing Centers of Vegetables

Distant/Urban landing Centers (Receiving Districts)	Local/Rural landing Centers (Collecting Districts)
Dhaka	Rangpur, Bogra, Tangail, Narshindi, Rajshahi, Nator, Pabna, Jhenaidah, Jessore, Chittagong
Chittagong	Bogra, Pabna, Jessore,Comilla
Sylhet	Bogra, Pabna, Norshindi, Mymensingh
Barisal	Jessore, Jhenaidaha

Source: Md. Fahd Al Georgy, Forward Market Value Chain Analysis: Vegetables and Fish Sectors in Bangladesh, 2016.

Fig 6.4: Vegetable Forward Market Value Chain



Source: Md. Fahd Al Georgy, Forward Market Value Chain Analysis: Vegetables and Fish Sectors in Bangladesh, 2016.

6.5 Key Forward Market Value Chain Actors

In general the players in the forward market vegetable value chain structure are the *farmers, forias, arotdars, baparis,* and *retailers.* The major two key players however, are the baparis and the arotdars. This is because in the rural trading centers the baparis are involved in bulk purchasing and sending vegetables to the distant market arots, and have greater access to the distant markets and have updated information on price, demand and supply. On the other hand, the distant market arotders play the lead role throughout the entire value chain since they execute the transactions with the consent from Beparis including sending back the transacted amount after keeping the commission. The other value chain actors are directly or indirectly dependant on these two major actors.

In general the forward market vegetable value chain structure includes the actors as *farmers, farias, arotdars, baparis, and retailers.* (Georgy, 2016).

6.5.1 Farmers

Farmers are at the starting point of the value chain, they are the growers. After harvesting they usually sell their produces to the regional arotders and beparis. Farmers prefer to come to the arots/haats as they get better and competitive price by selling vegetables to traders. Furthermore, they can sell all their vegetables at a time to the same arotder and bepari. However, farmers also sell to the forias & retailers (which usually amount to less than 20% of their total production) as beparis reject poor quality vegetables. Sometimes the forias come 'to the farmers' door to collect the produces. In this case, farmers need not to bare any transportation costs. All transactions are done in cash.

6.5.2 Farias (petty trader)

Farias buy directly from the growers and sell to other traders or to the local arots/haats. They are mostly small-scale seasonal floating traders, and some combine farming with trading. Sometimes they take credit from others (like family or friends) and repay it after trading. Forias always procure from farmers as they get vegetables at a lower price. They never provide creditto the farmers. On the other hand they sell their produces to known

beparies. Sometimes they get credit from beparies. But usually they sell in cash. They set the price based on bargaining. They even get commission BDT.400-500 per day, in which case they purchase according to the bepari's requirement. He needs to pay a small commission to the haat.

Forias sell about 60% of their total produces to the beparis as they procure the whole lot from them if the produce is of good quality. Usually they sell to the highest bidder. Normally forias initiate the trading process but when the market demand is high baparis also initiate the process. Forias sell the remaining 40% to the retailers when the beparis don't want to buy all their produces or the quality of produces don't satisfy the beparis. In this case the retailers initiate the trading and they pay in cash.

6.5.3 Arotdars

Arotdars are the permanent shopkeepers and commission agents having their own premises and staff at arots/haats. Their shops are called Arats. They either own or lease the space from the haat committee. They are the middle functionary between beparis and retailers. They take commission from both the parties. In some cases arotdars also offer dadon (cash as loans) to farmers. This way they ensure that the farmers sell their produce to them

6.5.4 Beparis

The baparis are rural assembler who buy the vegetables from the farmers or forias at arots/haats and sends them to distant market arots and sell it to Paikars through the distant market arotdars who do the trading on their behalf (for a commission). The trading is done in cash and the baparis collect the money through Bank IT, SA paribahan, Bikash and many other services. The prices are set according to the price of the urban arotders. Sometimes the Urban arotdars assist them in packaging by providing them the plastic crates. Moreover, in some cases the Urban Arotders also manages to return the empty crates to the beparis.

6.5.5 Retailers

Retailers feed the customers. They buy products from the arots and sell directly to the consumers. Retailers may be transient mobile vendors or sell from permanent shops or stalls in retail markets.

6.5.6 Forward Market Value Chain Governance & Power Dynamics

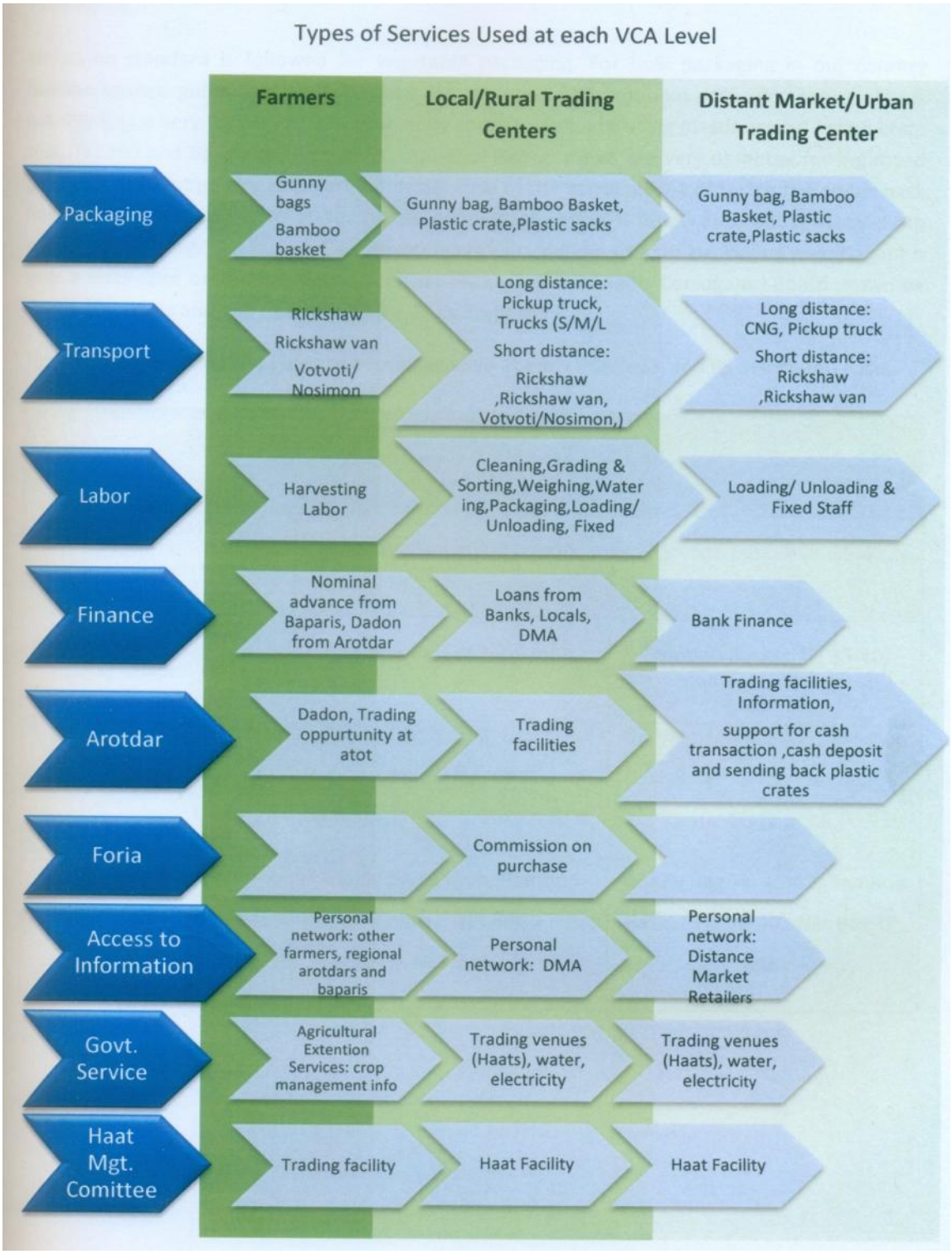
In terms of value chain governance, the baparis play the major role in the rural trading centers. This is because they are involved in bulk purchasing and sending vegetables to the distant market arots. Since there are a limited number of baparis in the local markets, they can exercise more bargaining power. Furthermore, they have greater access to the distant markets and have updated information on price, demand and supply. In some cases the local arotdars also provide dadon (cash as loans) to farmers. This way they ensure that the farmers sell their produce to them. However, it is the distant market arotders who play the lead role throughout the entire value chain. This is because they execute the transactions with the consent from. These arotdars then send the revenue earned from such transactions to the beparies at the close of the day or as per agreement.

6.6 Services Performed in Vegetable Forward Market Value Chain

The services market in the vegetable forward market includes all relevant services that can be availed by the Value Chain Actors (VCAs) for smoother trading and value addition. Some of these services are: packaging services, transport services, labor services, financial services, aratdar services, foria services, access to information services, government services and hoot committee services.

However, in some cases some services (government and hoot committee services for example) are not available. The figure in the following page shows what types of services are used at each Value Chain Actor (VCA) level.

Fig 6.5: Services Performed by the different Value Chain Actors (VCA)



Source: Md. Fahd Al Georgy, Forward Market Value Chain Analysis: Vegetables and Fish Sectors in Bangladesh, 2016.

Post-harvest management

Due to a lack of knowledge on post-harvest management and handling techniques among the farmers and Value Chain Actors (VCAs), its proper application is absent in majority of places. On an average, overall post harvest loss is 20% of the total production. In most cases farmers and Value Chain Actors (VCAs) are not interested to follow the post harvest techniques such as- grading, sorting, pre-cooling, transporting, packaging, wrapping and so on. This is because it will add extra labor, time and management cost. They are unaware that if they follow the post harvest techniques they will be able to earn more profit, as there will be less wastage and they can sell good quality vegetables at a higher price.

Transportation

Major losses incurs in transporting vegetables due to bad road condition, political unrest and mishandling (i.e. labor/others sitting or standing on the vegetables). The table below shows the modes of transport used by forward market Value Chain Actors (VCAs) and its associated costs

Table 6.3: Modes of Transport used by VCAs and its associated cost

Actor	Transport Used	Average Distance Covered	Average Quantity Transported	Average cost
Farmer	Van, Votvoti	Van: 5-7 Km, Votvoti: 7-12 Km	Van: 5 mon; Votvoti: 10 Mon	Van: Tk 40 per mon; Votvoti: Tk. 40 per Mon
Foria	Van, Votvoti	Van: 5-10 Km, Votvoti: 10-15 Km	Van: 5 mon; Votvoti: 10-12 Mon	Van: Tk.50-60 per mon; Votvoti: Tk. 30-40 per Mon
Bepari	Truck	200 km ++	15-20 MT	Tk. 40-60 per Mon
Arotdar	Truck	200 km ++	15-20 MT	Tk. 40-60 per Mon

Source: Md. Fahd Al Georgy, Forward Market Value Chain Analysis: Vegetables and Fish Sectors in Bangladesh, 2016.

Labor

Labors are the people who are physically engaged in the workings of the arots/haats, like loading/unloading, weighing, packaging etc. They are either paid a fixed amount on a daily basis (BDT 300 to BDT 400) or on piecemeal basis where the payment depends on their job description.

The daily labor rate was found to be the same in both urban and rural areas

Transport brokers

Transport brokers are the middlemen who have separate networks with various Value Chain Actors (VCAs) and transporters. Through this network they create links between VCAs and transporters based on the demand of the Value Chain Actors (VCAs). He charges BDT.300 to BDT.400 for his services from the Value Chain Actors (VCAs). Sometimes, he links more than one Value Chain Actor (VCA) to a single transporter.

Finance

The financial service in the forward market is rather complex than other industries. Both formal and informal sources of finance exist here. The major actors who provide financial services to the forward market VCAs are the arotdars, baparis and financial institutions. The arotdars provide informal finance to the farmers in the form of dadan at high intrest rates and the farmers are bound to sell all his produces to the arotdar at a predetermined rate (which maybe well below the current market price). The baparis too provide informal finance to the farmers inthe form of partial advance payment for their produces, where there is no interest rate involved and the remaining amount is paid at the time of harvesting. In this case the rate of the produces is calculated based on the market price at the time of harvesting. The financial institutions provide formal finance to big bapari/arotdars.

Information

Access to information in the forward market value chain is limited to ones own personal

network reach. For instance farmers get updated information from other farmers, baparis and arotdars in their known network. Like the farmers local forias and baparis get their information from their competitors and distant market arotdars. The baparis also collect specific distant market information from specific markets in those locations. Presence of a low cost easy to access information service provider is almost non-existent (Georgy, 2016).

6.7 Marketing Channel of Vegetables

Movement of fresh vegetables involves three main stages, viz. (i) from farm gate to the local primary market; (ii) from primary market to the urban Arat center; and (iii) from Arat center to the retail market. However, all these stages are not followed strictly.

The vegetable growers usually sell their produce to the Beparis either in the local primary market or in the village. About 25% of their produce are found to sell directly to retailer in the local market. They also dispose of their vegetables to the Farias and even a few of them having small amount of produce directly sell to the consumers in the local market.

After growers, intermediaries involved in vegetable marketing chain are: the Faria, Bepari, Arathdar, Paikar (wholesaler cum retailer) and retailer. Faria found in Tangail and Rangpur areas, are petty traders who purchase vegetables from the producers in the village or in the local market and offer the same to the Beparis. Sometimes they sell their produce directly to the local consumers. They are the seasonal traders and they do not have permanent shop in the market. Beparis are professional traders who make their purchase from the producers at the local market, bring their consignment to the urban wholesale market and sell them to the retailers through Arathdar or commission agent. Occasionally they go to the village for their purchase and sometimes buy vegetables from the Farias in local market. They are involved in vegetable trading throughout the year. They have no permanent shop or staffs. There is strong competition among Beparis and

entry to this type of business is rather easy. Anyone who has requisite capital and knowledge can enter into this business as Bepari. Arathdars are commission agents who have fixed establishment help Beparis to sell their produce to retailers on charge of a fixed commission. The retailers buy vegetables from Beparis through Arthdars and sell those to the consumers (Sabur, 1992).

The marketing channel of vegetables is depicted below:

(i) Producer-Bepari-Arathdar-Retailer-Consumer

(ii) Producer-Faria-Bepari-Arathdar-Retailer-Consumer

The supply chain model of vegetables at Kawran Bazar

(i) Producer/Farmer-Local Trader-Trader from Kawran Bazar-Broker for Transport-Transporter-Broker in Kawran Bazar-Wholesaler in Kawran Bazar-Superstores/Other Retailers-Final Customer

(ii) Producer/Farmer-Trader from Kawran Bazar-Broker for Transport-Transporter-Broker in Kawran Bazar-Wholesaler in Kawran Bazar-Superstores/Other Retailers-Final Customer

(iii) Producer/Farmer-Broker for Transport-Transporter-Broker in Kawran Bazar-Wholesaler in Kawran Bazar- Superstores/Other Retailers-Final Customer

(iv) Producer/Farmer-Transporter-Broker in Kawran Bazar-Wholesaler in Kawran Bazar- Superstores/Other Retailers-Final Customer

6.8 Government Service

The government services include the facilitation of the haats, providing water & electricity supply, providing farmers and VCAs with agricultural and agro-market related information and training (like daily market price, postharvest training, etc.) Government agencies that are involved with providing services the vegetable forward market are: Department of Agricultural Extension (DAE), Department of Agricultural Marketing (DAM), Agricultural Information Services (AIS), Bangladesh Agricultural Research Council (BARC) and Bangladesh Agricultural Research Institute (BARI). A brief description of each agency's role(s) is given below.

6.8.1 Department of Agricultural Extension (DAE)

The Department of Agricultural Extension (DAE) is the largest public sector extension service provider in Bangladesh. Its mission is providing needs based extension services to all categories of farmers and enabling them to optimize their use of resources, in order to promote sustainable agricultural and socio-economic development. The core functions of DAE include increasing agricultural productivity, human resource development and technology transfer. They are supposed to provide farmers with training on new products and technology introduced by BARI and BARC. However, due to shortage of resources they are not being able to provide these services.

6.8.2 Department of Agricultural Marketing (DAM)

The objective of Department of Agricultural Marketing (DAM) is providing improved marketing services to ensure fair returns to the growers for their produce and adequate supply to the consumers at reasonable prices. The main mandates of DAM are:

1. To collect market information at farmer level, wholesale and retail prices, market arrivals, movement and stock of farm products and to disseminate price information through ratio, press and news bulletins for information of farmers, traders and consumers;
2. To monitor the prices, identify reasons for price fluctuations and suggest corrective measures;
3. To organize movement of farm products, especially perishable items, from glut to deficit areas/consuming centers in cooperation with trade and transportation agencies;
4. To organize movement and sale of the produce of the farmers of new/concentrated producing areas;
5. To enforce the Agricultural Produce Markets Regulation Act, 1964;
6. To conduct study/research on marketing of farm products, assess marketing costs and traders margins identify marketing problems and problem area and

suggest measures for improvement of marketing conditions and reduction of marketing cost;

7. To construct wholesale markets with adequate facilities in important distribution/consuming centers and to introduce improved market practice;
8. To provide extension services for improvement of flaying, curing and preservation of hides and skins to maximize foreign exchange earnings; and
9. To advise the Government on production targets of different crops, procurement programmes and support price of important crops and in formulating policies on pricing,
   marketing, storage, distribution, export and import of different farm products of the country.

However, due to shortage of resources they are not being able to provide all these services.

6.8.3 Agricultural Information Services (AIS)

The Agricultural Information Service (AIS) is entrusted with responsibility of providing mass media support to the agriculture sector in general and transferring agricultural technology from research station to the rural people of Bangladesh in particular. They work with radio, television, printed media and also produce documentary films, posters, folders, leaflets, booklets, newsletters, magazines, banners, festoons and etc. for creating awareness of the farmers on the new technologies.

6.8.4 Bangladesh Agricultural Research Council (BARC)

The Bangladesh Agricultural Research Council (BARC) is the apex organization of the national agricultural research system (NARS). Its main responsibility is strengthening the national agricultural research capability through planning and integration of resources. BARC has the responsibility to coordinate research and foster inter-institute collaboration, monitor and review the research program of NARS institutes, assist

institutes for strengthening research capacities and to establish system-wide operational policies and standard management procedures and to assure that each institute is optimally governed (Georgy, 2016).

6.8.5 Bangladesh Agricultural Research Institute (BARI)

Bangladesh Agricultural Research Institute is the largest multi-crop research institute conducting research on a variety of crops, cropping and farming systems, plant protection, soil fertility management and water management, post- harvest handling and processing, farm implements and socio-economics related to production, processing, marketing and consumption. The Institute functions with three of its major components:

1. Research wing consisting of 15 research divisions, 6 crop research centers, 6 regional research stations and 24 research stations and sub-stations, 9 farming system research and development sites (FSRD), 72 multi location testing sites (MLT) located at different agro-ecological zones of the country.
2. Support Service wing providing all the logistic supports in research management as well as personnel management and monitoring infrastructural development of the Institute.
3. Training and Communication wing offers training to the scientists, extension workers, NGO officials and farmers.

6.9 Processing Industry

The prospect of processing industry is very high in our country. At the moment there are a few vegetable processing companies in Bangladesh such as Pran, Ahmed, Square, BD Foods, ACI etc. They are producing sauce, pickle, jam, jelly etc. Some companies are planning to process canned or ready to cook vegetable which has high potentialities in the urban areas for the working families.

6.10 Vegetables Forward Market Constraints & Intervention Implication

Constraints

The key constraint identified was “low income”. The major constraints that lead to low income are mainly low price of vegetables and high transaction costs. The contributing factors for low price are postharvest losses (wastage & degrading), low bargaining power, and seasonal glut. High transaction costs are incurred due to high rent, transportation and labor costs.

The main underlying reasons for postharvest losses are the lack of awareness of postharvest practices and handling techniques among the farmers and VCAs, which arises due to the absence of relevant initiatives. This is because there is a gap of proper incentives for the private sector and relevant stakeholders.

On the other hand, low bargaining power at the farmer end is another major constraint. This arises due to the fact that the trading period for perishable items is very limited. Besides, there are few buyers/traders in the market and relevant support services are not available. Furthermore, marginal farmers who produce a lesser quantity face problems since baparis don't want to buy in such small quantities their bargaining power decreases.

Seasonal gluts are also a constraint that farmers face due to lack of market demand information, awareness on what types of vegetables to grow in what quantity at a specific season. If an item gets high market price in one season, the next season most of the farmers go on producing that. Thus there is an oversupply in the market that eventually leads to low market price and wastage. Furthermore, there is also an absence of proper knowledge on alternative uses of excessive vegetables.

High transaction costs are incurred at trader levels due to high transportation costs and improper transportation techniques. Illegal road tax also contributes to this. There is also an absence of a proper market mechanism which includes high labor costs and high rent/commission costs (Georgy, 2016).

The table below lists examples of some areas of malpractice and constraints and the relevant Actors involved.

Table 6.4: Malpractice/Constraints and its associated VCAs

Malpractice/Constraints		Actors Involved
Packaging	1. The use of large "Dhops" weighing as much as 18 mounds each. 2. When the price of vegetables is low packaging is not done. 3. The drawbacks of using plastic crates are: It's carrying capacity is less (i.e. less vegetables can be loaded on trucks therefore the carrying cost! KG goes up); There is extra cost involved in sending back the crates; Due to overloading and stacking vegetables near the bottom get smashed.	l. Farmers 2. Forias 3. Baparis
Transport	l. Due to gross overloading practices vegetables get smashed 2. Lack of specialized low cost vehicles to transport vegetables 3. Quality deterioration due to longer transport times 4. Transporters are fed-up with all the illegal road tax that they have to pay (which in turn is passed on to the baparis) 5. Truck rent shoots up to almost 3 times due to political unrest 6. Scarcity of transport during political unrests	1. Forias 2. Baparis
Labor	l. Lack of proper loading and unloading skills contributes to wastage	l. Forias 2. Baparis

Source: Md. Fahd Al Georgy, Forward Market Value Chain Analysis: Vegetables and Fish Sectors in Bangladesh, 2016.

6.11 Problems of Production and Preservation of vegetables and their Solutions

As shown in Table 6.5, sample producer respondents mentioned 24 problems and some suggestions for solutions for these problems regarding crop production, preservation and

marketing. “High price of seed, fertilizer and fuel” was mentioned as the major problem by the highest proportion (93%) of the respondents. This was followed by ‘inadequate supply of High Yield Varieties (HYV) seed, fertilizer and insecticide in time” (35%). Regarding solution, the highest proportion of the respondents (77%) mentioned that “open market sale of fertilizer should be established instead of dealership” followed by “cold storage should be constructed by the government in various places’ (38%), and “irrigation facility should be made possible everywhere by the government” (37%).

Table-6.5: Vegetable production, Preservation problems and their solutions

Problems	Frequency (%)	Solutions	Frequency (%)
1. High price seed, fertilizer and fuel	37 (93)	Sale of fertilizer in open market should be establized instead of dealership	31 (77)
2. Inadequate supply of electricity	7 (18)	Electricity should be supplied adequately	9 (22)
3. Inadequate and poor road quality and underdeveloped transport	3(8)	Prices of electricity and fuel should be reduced	5 (12)
4. Lack of irrigation facility	9 (22)	Irrigation facility should be made available by the government where possible	15 (37)
5. Inadequate water control measures for draining out water	2 (5)		
6. High price of insecticides	12 (30)	Price of insecticides should be reduced	13 (32)
7. High cost of irrigation water	10 (25)	Price of irrigation should be reduced	5 (12)
8. Lack of crop preservation facility and cold storage	8 (20)	Cold storage should be constructed by Government in various places	15 (38)
9. Inadequate supply of HYV seed, fertilizer and insecticides in time	14 (35)	Buying and selling centers of HYV seed, fertilizer and insecticide should be established by the government in various places. Price of those should be reduced.	8 (20)
10. Lack of adequate technologies and advanced	5(13)	Farmers should be familiar and trained in using advanced	5 (12)

skill for the farmers		appropriate technology	
11. Inadequate supply of good quality HYV seeds in market	11 (27)		
12. Lack of water in the dry season	3 (8)		
13. Fertilizer, seed and insecticides cannot be bought at fair price	5 (12)		
14. High cost of tilling	3 (8)		
15. High propensity of attack of insects and diseases	3 (8)		
16. Lack of arrangement for proper marketing of products	6 (15)		
17. Lack of quality seed of potato	2 (5)		
18. Poor quality of fertilizer and insecticides	5 (12)		
19. Inadequate service of DAE at the field level	4 (10)	Adequate services from DAE at the field level should be ensured	5 (13)
20. Too much attack of pests	2(5)		
21. Low supply of agricultural inputs in open market	2(5)		
22. High wage due to low supply of agricultural labor	4(10)		
23. Lack of impulse husking mill	2(5)	Pulse husking mills need to be established	1(2)
24. Producers do not get proper price due to influence of syndicates	3(8)	Syndicates should not be allowed to dominate on the market. Market monitoring mechanism should be introduced. Farmers should get fair price for their products.	5 (12)

Source: Field Survey, 2014

6.12 Problems of Marketing of Agricultural Products

The producer respondents mentioned 12 problems of marketing of agricultural products in the local bazaars (Table- 6.6). The highest proportion (97%) of the respondents

mentioned "high rate of toll in local bazar" as a problem followed by "malpractice in measurement" (90%). Other marketing problems in big/intermediate bazar include "underdeveloped road communication" and "high transport cost". As regard problems of selling to bepari/paiker/ retailer, majority (80%) of the respondents mentioned that they "do not get fair price due to influence of syndicate". 35% of them mentioned the problems of dominance of the brokers.

Table 6.6: Problems of Marketing of Vegetables

Marketing Problems	**No. of Responses (%)**	**Problems of selling to *Bepari/Wholesaler/ Retailer***	**No. of Responses (%)**
1. High rate of toll at local bazar	39 (97)	1. Do not get fair price due to influence of syndicate	32 (80)
2. High cost of transport	15 (37)	2. Bound to sell at low price due to perishability	10 (25)
3. A fewer number of beparies	3(7)	3. Products from other districts create over supply	5 (12)
4. Low price of products	9 (23)	4.Dominance of the brokers	14 (35)
5. Brokers try to curtail price of product	13 (33)	5.Malpractice in measurement	11 (28)
6. Lack of shed in Bazar	16(40)		
7. Malpractice in measurement	36 (90)		
8. Farmers do not get fair price	7(17)		
9. Lack of Aratds in Bazar	8(20)		
10. Brokers dominate over farmers	7(17)		
11. Lack of fixed place for buying and selling	3(7)		
12. Operating bazar on road creates problems	4(10)		

Source: Field Survey, 2014

Institutional/Organizational Problems

The respondents (farmers) mentioned nine institutional and organizational limitations related to increase of production.

The highest proportion (43%) of the respondents opined that "inadequate visit of Department of Agricultural Extension (DAE) field staff to villages" was one of the institutional and organizational limitations related to increase of production, followed by "lack of farmers' cooperative (33%), "inadequate public supply of agricultural inputs" (30%) and "lack of agricultural training to farmers" (28%).

Table: 6.7: Institutional/Organizational Limitations Related to Increase of Production

Institutional/Organizational Limitations	**No. of** Responses (%)
1. Inadequate visit of DAE field staff to villages	17 (43)
2. Inadequate public supply of agricultural inputs	12 (30)
3. Farmers are lacking in agricultural training	11 (28)
4. Lack of farmers' cooperative	13 (33)
5. Frequent load shed of electricity	9 (23)
6. Lack of public assistance	12 (30)
7. Lack of bank in the locality	5(13)
8. Limited supply of seeds from BADC at fair price	7 (17)
9. Lack of appropriate agricultural information	5 (13)

Source: Field Survey, 2014

6.13 Conditions for Increasing Vegetables Production

Table shows that 77% of the respondents (producer) mentioned opportunity using tractor, power tiller, irrigation pump and thresher in their agricultural operations is necessary. Fifty three per cent of the respondents mentioned the opportunity of using modern system in agriculture.

Table 6.8: Favorable Conditions for Increasing Vegetables Production

SI. No.	Favorable Conditions	Frequency (%)
1.	Tractor, power tiller, irrigation pump and thresher can be used	31 (77)
2.	Modem system can be used in agriculture	21 (53)
3.	There is facility of irrigation	20 (50)
4.	Marketing of products can be done	12 (31)
5.	Agricultural inputs are available	10 (25)
6.	Quality seeds are available	7 (17)
7.	Fertilizer and insecticides are available	11 (28)
8.	There is opportunity of technological training	6 (15)

Source: Field Survey, 2014

Role of Government as Suggested by the Producer Respondents

The respondents (farmers) provided 13 types of suggestions for ensuring fair price of their agricultural products (Table-6.9). The highest proportion (88%) of respondents suggested reduction of agricultural input price followed by fixation of fair price of agricultural products (75 %), Purchase by government of agricultural products to control price (72%), launching bazar monitoring mechanism (62%), hanging pre-fixed price list in the shop (58%) etc.

Table 6.9: Role of the Government in Ensuring Fair Price of Agricultural Crops as Suggested by the Producer Respondents

SI. No.	Suggested Role of the Government	No. of Responses (%)
1.	Government should fix fair price of agricultural products	30 (75)
2.	Launch bazar monitoring mechanism	25 (62)
3.	Reduce price of agricultural inputs	35 (88)
4.	Hang pre-fixed price list	23 (58)
5.	Form agricultural cooperatives	5 (12)
6.	Take legal step against syndicates of traders	3 (8)
7.	Government should purchase agricultural products to control price	29 (72)
8.	Price of agricultural products should be fixed on the basis of cost of production	19 (48)
9.	Government can arrange low cost transportation of agricultural products of farmers	11 (28)
10.	To make farmers aware of getting fair price of agricultural products	3 (7)
11.	Improvement of transport communication is necessary	9 (22)
12.	Volume of import of agricultural goods should be reduced	5 (13)
13.	Adequate number of cold storage should be constructed	3 (8)

Source: Field Survey, 2014

Steps to be taken by the Government to Ensure Fair Price

Respondents (consumers) suggested various steps to be taken by the government to ensure fair price of agricultural commodities for consumers (Table-5.10). The highest number of respondents (31.13 %) suggested that "government approved price list should be hanged and implemented in all markets". It was also suggested that market should be monitored properly after price fixation (30.19%) and price of agricultural inputs should be reduced (19.81%).

Table 6.10: Steps to be taken by the Government to Ensure Fair Price of Agricultural Products for Consumers

Sl. No.	Steps to be Taken by the Government	No. of Responses	(%)
1.	Government approved price list should be hanged and implemented in all markets	103	31.13
2.	Market should be monitored properly after price fixation	100	30.19
3.	Price of agricultural inputs should be reduced	66	19.81
4.	Government should arrange buying and selling of goods with fair price	38	11.32
5.	Law of consumers' right should be executed	28	8.49
6.	Government should import agricultural goods and sell in open market if needed	25	7.55
7.	Import of agricultural goods should be stopped	25	7.55
8.	Illegal hoarding of goods should be stopped	25	7.55
9.	Government should procure, store and sell agricultural products at fair prices according to demand	22	6.60
10.	Steps should be taken to increase production	19	5.66
11.	Measures should be taken against traders' syndicates	16	4.77

12.	Government should have control over the market	16	4.71
13.	Dishonest traders should be penalized/controlled	12	3.78
14.	Steps should be taken to reduce price	9	2.83
15.	Ration shops may start operation again throughout the country	9	2.83

Source: Field Survey, 201

6.14 Consumer Suggestions regarding Improvement of Vegetables Marketing

Table 6.11 shows various opinions of respondents about how to improve vegetables marketing. The highest number (42%) of respondents opined that traders' syndicates should be defended by any means for promoting proper marketing of agricultural commodities. Another important opinion (37%) was that the price list of goods should be available in market.

Table 6.11: Suggestions of Consumer Respondents Regarding Improvement of Vegetables Marketing

SL. No.	Opinions of the Consumer Respondents	Frequency	%
1.	Traders' syndicates should be defended	138	42
2.	Price list of goods should be available in market	122	37
3.	Agricultural input price should be reduced	109	33
4.	Products may be sold through agricultural cooperatives	75	22.5
5.	Market should be monitored regularly by the concerned authority	63	19
6.	Government purchase centre should function efficiently	45	13.5

7.	Government should purchase agricultural goods in bulk to control over the market	56	16.9
8.	Sheds should be constructed in markets/for selling agricultural crops	36	10.8
9.	Various illegal costs be controlled should be controlled	86	26
10.	Farmers may sell their products directly to consumers bypassing the intermediaries.	63	19

Source: Field Survey, 2014

Causes of High Price of Selected Vegetables According to Opinion of Market Intermediaries:

Most (83%) of the market agent respondents opined that price of vegetables rose high due to enjoying high margin by the market agents. The second highest proportion (68%) of the respondents opined that traders' syndicate is the another cause followed by transportation cost (63%). The other cause is miller enjoys high margin (60%).

Table 6.12: Causes of High Price of Vegetables

Main Causes	No. of Responses	%
1. Miller enjoys high margin	36	60
2. High storage cost	12	20
3. Hoarding	17	28
4. Traders' syndicate	41	68
5. High margin by the market agents etc.	50	83
6.Transporation cost	38	63
7. Money paid to extortionist	45	75

Source: Field Survey, 2014

Opinions of Market Intermediaries regarding Problem of Marketing of Vegetables

As shown in Table 6.13, the sample market intermediaries mentioned eight problems of marketing of agricultural products. The highest proportion (55%) of the respondents mentioned that "non *of* partial amount of realization of sale credit" was the major problem, which was followed by "high rate of toll at the bazar" (45%). About 40% respondents mentioned that they "do not get fair price due to influence or traders syndicate" followed by “illegal payment to extortionist” (38%).

Table 6.13: Problems of Marketing of Vegetables According to Opinion of Market Intermediaries

Marketing Problems	No. of Responses (%)
1. High rate of toll at bazar	27 (45)
2. Do not get fair price	24 (40)
3. Illegal payment to extortionist	23 (38)
4. Non or partial realization from credit sale	33 (55)
5. Lack of storage facilities	6 (10)
6. Lack of *arats* in bazar	6 (10)
7. Brokers dominate over farmers	6 (10)
8. Lack of fixed place for buying and selling	15 (25)

Source: Field Survey, 2014

6.15 Role of the Government in Marketing of Vegetables

The market agent respondents provided 12 types of suggestions for ensuring fair price of their agricultural crops to the farmers (Table 6.14). The highest proportion (66.6%) of respondents suggested for reduction of agricultural input price, followed by fixation of fair price of agricultural products (55%), construction of adequate number of cold storage (40%) and purchase agricultural crops to control price (34.84%).

Table 6.14: Role of the Government in Marketing Vegetables to Ensure Fair Price to Farmers as Suggested by the Market Intermediaries

Sl. No.	Role of the Government	No. of Responses (%)
1.	Fix fair price of agricultural products	33 (55.00)
2.	Launch bazar monitoring mechanism	12 (20.00)
3.	Reduce price of agricultural inputs	40 (66.66)
4.	Develop marketing facilities	12 (20.00)
5.	Form agricultural cooperatives	6 (10.00)
6.	Take legal step against syndicates of traders	7 (11.66)
7.	Should purchase agricultural crops to control price	23 (34.84)
8.	Price of agricultural products should be fixed on the basis of cost of production	20 (33.33)
9.	Government can arrange low cost transportation of agricultural products of farmers	4 (6.66)
10.	Improvement of transport and communication facility is necessary	15 (25.00)
11.	Adequate number of cold storage should be constructed	24 (40.00)
12.	Reduce toll	6 (10.00)

Source: Field Survey, 2014

6.16 Chapter Summary

The chapter highlights the production of vegetables, rural vegetables landing centers, vegetable forward market value chain, value chain actors like farmers, farias, arotdars, Baparis, and retailers. The chapter also focuses on problems of existing supply chain of vegetables like high rate of toll at bazaar, illegal payment to extortionists, lack of storage facilities, hoarding, traders syndicate, frequent load shed of electricity. Moreover, the chapter emphasizes role of government in ensuring fair price of vegetables.

7.1: Introduction

Major problem of the existing supply chain of vegetables is the presence of many levels of middleman which has been shown in chapter three. In order to reduce the involvement of the middleman, superstores need to go to the producers. But none of the superstores is big enough to buy cost-effectively from the producer directly. To resolve this problem, superstores can collectively buy vegetable from the producers through Bangladesh Supermarket Owner's Association (BSOA), an organization formed by the owners of the superstores.

Besides purchasing, Bangladesh Supermarket Owner's Association (BSOA) also needs to play a crucial role in storing the vegetables centrally and distributing them to different superstores. This is to be done through BSOA as none of the superstores can afford to maintain a pool of transport individually to carry vegetables from rural areas to Dhaka city. Neither do the superstores have economic strength to arrange adequate storage facility individually (Kabir, et. al.2006).

On the contrary, it is feasible for BSOA to arrange the logistic and storage facilities because of the economics of scale. The diagram of the proposed supply chain model is shown figure 7.1.

The various components of the proposed supply chain model are discussed below.

7.1.1 Agents of BSOA

To communicate directly with the producers of the grass-root level, Bangladesh Supermarket Owner's Association (BSOA) needs to appoint agents in different territories of the country. These agents will buy vegetables on behalf of BSOA from the producers of the grass-root level. Initially, BSOA needs to rely on these agents as the farmers are not aware of BSOA and neither does BSOA know the particular where about of the farmers. However, in the long run, BSOA can have its own purchasing centers in different territories, where farmers would be able to sell their product directly to BSOA.

7.1.2 Pool of Transports (Trucks, Refrigerated Vans, Pickup Vans etc.)

BSOA needs two types of vehicles like trucks and refrigerated vans are mostly required to carry vegetables from the remote areas to the Cold Storage or Distribution Point. Small vehicles like pick-up vans are mostly required to carry vegetables to different superstores of Dhaka from the Distribution Point of BSOA. The movement of all the vehicles will be coordinated centrally at the Distribution Point of BSOA. In certain cases, particularly to store seasonal vegetables, big vehicles can carry vegetables directly to the cold storage.

Refrigerated vans are most suitable to carry vegetables for a long time as these vans ensure the freshness of vegetables in a controlled environment. But initially, BSOA cannot afford to buy or hire such vans. On the contrary, it is more suitable for BSOA to hire trucks to carry vegetables as it is currently done by the brokers or wholesalers of vegetables. Once the critical mass of vegetable-selling is reached and regular requirement of trucks is guaranteed, then BSOA can go for buying its own trucks/refrigerated vans.

Unlike trucks or refrigerated vans, pick-up vans are not that expensive and it is guaranteed that BSOA will regularly need some pick-up vans to carry vegetables across the city. Therefore, BSOA should buy few pick-up vans to ensure timely delivery of vegetables to its member superstores.

7.1.3 Distribution point

Distribution Point will be the main hub of the supply chain. Once collected, the vegetables would be transported by trucks/vans to the Distribution Point of BSOA. All the transports will be coordinated from this point. After unloading the vegetables from the trucks, the vegetables will be repacked and sent to different superstores of Dhaka city using the pick-up vans.

Distribution Point will keep continuous on-line communication with the headquarters of different superstores to remain updated regarding the demand situation of the vegetables. Distribution Point will also keep continuous communication with the Agents of BSOA to ensure smooth and prompt supply of vegetables according to the demand.

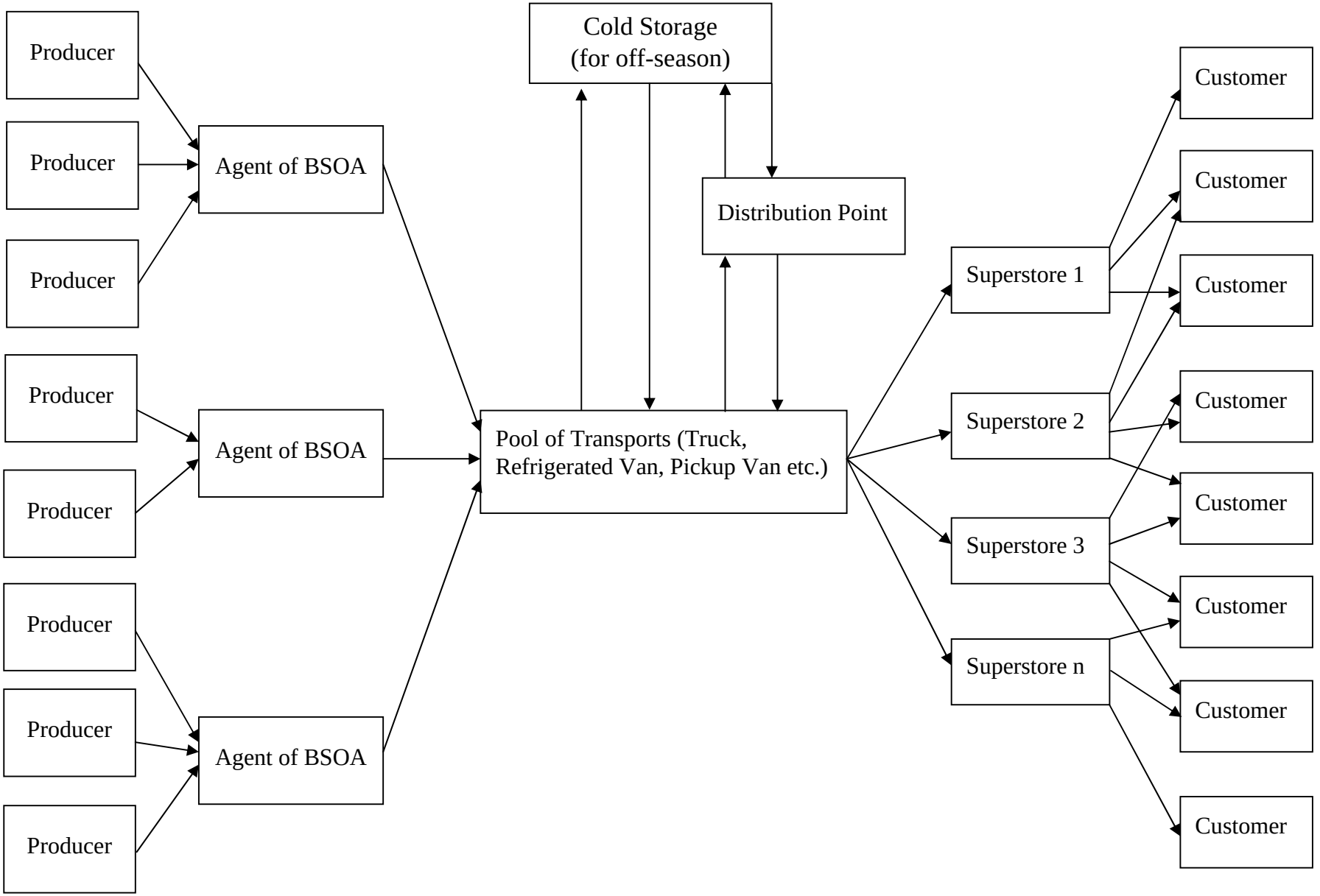


Figure 7.1: The Proposed Model for Supply chain Management of Vegetables at the Superstores of Dhaka City

7.1.4 Cold Storage

BSOA needs to maintain a Cold Storage facility within the periphery of Dhaka city. Like the big vehicles, BSOA need not own the cold storage from the beginning; rather a suitable cold storage can be rented at the beginning. The role of the cold storage will be to ensure smooth supply of vegetables in the off-peak season. After collecting seasonal vegetables from the Agents of BSOA, a certain portion should be sent to the cold storage for supplying later in the off-peak season.

7.2 COMPARISON BETWEEN PROPOSED MODEL & EXISTING MODEL

Comparison between the proposed model and the existing model for the supply of vegetables at the supermarket of Dhaka is given below.

7.2.1 Initial Investment

Proposed model requires a good amount of investment to develop a workable infrastructure. The proposed model suggests for own transportation pool of Bangladesh Supermarket Owner's Association (BSOA). It also recommends establishing a Distribution Point and a cold storage. However, the requirement of initial investment can be reduced significantly by renting or taking lease of transports, Distribution Point, and a cold storage. This will also help BSOA to assess the actual capacity requirement and take a more precise decision later when the utilization level of the resources will call for a total ownership.

7.2.2 Reduction of Cost

The requirement of initial investment will be duly compensated by the reduction of costs of vegetables if the proposed supply chain model is implemented. It has been shown previously that the cost to the consumers is quite high because of the current fragmented supply chain of vegetables. Cost to the consumers will reduce significantly if the number of middlemen could be reduced in the supply chain. If the proposed supply chain is implemented, then only the retailers (i.e. superstores) will remain involved in collecting

and distributing the vegetables, which will result into significant reduction of cost. So, the initial investment in buying or making a long-term contract with transport owners to implement the proposed supply chain will be more cost-effective in the long run.

7.2.3 Effective Demand Management

If the proposed model is implemented, then the Distribution Point will be able to procure the optimum amount of vegetables by having continuous communication with the member stores. Such optimization will ensure the adequate supply of vegetables at the right place at the right time. Also, by storing the seasonal vegetables at the cold storage, it would be possible to maintain regular supply of these vegetables even in the off-peak season which is not imaginable by the existing distribution channel of the supermarket. The IT and SAP system should link with all the channels in distribution network. This includes products shelf life, lead time and demand forecast. Accurate forecast will reduce the wastage. There is a lack of attention in wastage management of perishable items. Most of the wastage are now been sent to the trash/bin. There is no scope for recycling or re-usage. Supermarket owner's association can collect vegetable wastage through their agent from their each market and can use in their contract farming land as a bio fertilizer input. It can also be used for cattle farming and poultry feed as well.

6.2.4 Economies of Scale

If proposed model is materialized, then bulk volume of vegetables will be procured as supermarket association will purchase in favor of its members. Ultimate benefit will go to all individual supermarket as purchase price will be lower than the price of traditional middlemen. This benefit of economies of scale will also prevail in transportation, warehousing, negotiation and in marketing. Diseconomies of scale is the another problem of the existing vegetable distribution channel.

7.2.5 Ensure Fair Price to Farmers

Most of the farmers don't get fair price in existing market structure as they are highly exploited by the local mohajon & arotdar. But if proposed model is executed then concerned farmers would be able to sell their goods directly to the agent of the retailers

(Supermarkets) which will ultimately increase their bargaining power and hence possibility of getting higher price compared to selling of traditional market system. Vegetable procurement through the agent of the supermarket association will empower the farmers to break the monopoly market of local mahajan/aratdar.

7.2.6 Reasonable Price to Customers

Currently most of the supermarket collects vegetables individually from vegetable wholesale market that is why their vegetable cost is relatively higher and retail price is also higher. But vegetable collection directly from the farmers through agent of the association can ensure low cost that can further ensure reasonable price for their ultimate customer compared with the producer price.

7.2.7 Ensure Quality

The quality is a key concern for any supermarkets. As currently, supermarket purchase most of the vegetables from their local wholesale market they don't find fresh, chemical free vegetables. But if they could purchase directly from farmers by following the proposed model then agency can check quality directly at farm level. For Individual supermarket storing vegetables in a cold storage for off-season or stocking unsold vegetables is very expensive which could be reduced by using central cold storage of supermarket association.

7.2.8 Financial Assistance to the Farmers

Sometimes farmers are forced to sell their vegetables to the local mahajon as they took financial assistance during cultivation. So, if the supermarket cooperatives provides interest free loan to the farmers without price conditioning then agents of supermarket association would get an competitive advantage in getting vegetables from the farmers compared to the local mohajan and aratdar.

7.2.9 Control Price Fluctuation in Supermarket

Vegetables prices vary across the supermarket as they purchase at different price at their local wholesale and many other reasons. But if all the supermarkets can purchase their required vegetables through the agent of supermarket association then their purchase cost variation will be reduced and final price for the ultimate customer would be almost same.

7.2.10 Involvement of Bangladesh Supermarket Owner's Association (BSOA)

The unique characteristic of the proposed supply chain model is the involvement of Bangladesh Supermarket Owner's Association (BSOA). In the proposed supply chain model, BSOA is suggested to play a role similar to the role played by Bangladesh Garment Manufacturers and Exporters Association (BGMEA). BGMEA performs some tasks which cannot be undertaken by a single garment manufacturing firm. For example, BGMEA gives permission for Inter-bond sub-contract of bonded warehouse goods, issues Export Orders for clearance of raw materials imported by member-factories, and helps disposal of stock-lots of fabrics.

Like BGMEA, BSOA needs to undertake some responsibilities that are required for the collective growth of the industry but are not feasible for a single firm to undertake. By taking the responsibility of coordinating the supply chain of vegetables for its member superstores, BSOA would be able to provide quality products at a lesser price to the consumers.

7.3 Conclusion

The main focus of the proposed supply chain model of vegetables is to reduce the role of middlemen. To implement the proposed model, Bangladesh Supermarket Owner's Association (BSOA) needs to perform the crucial function of coordinating among the vegetable-producers and different member superstores. Such role of BSOA will be similar to that played by BGMEA (Bangladesh Garment Manufacturers and Exporters Association). BGMEA carries out a lot of tasks (e.g. maintaining an e-commerce website,

lobbying internationally etc.) that cannot be performed by a single firm effectively. In the same way, BSOA must take a leadership role to ensure a smooth supply of fresh produces to its member stores.

The member superstores should have one point of communication with the Distribution Point for all of their branches. For example, Agora, a leading superstore, should coordinate with the Distribution Point from its head office on behalf of all its branches. That is, different branches of Agora should directly communicate with the head office of Agora, not with the Distribution point of BSOA. The head office, considering the overall demand and supply situation, will order the type and quantity of vegetables to the Distribution Point for all its branches. And the Distribution Point will then take measures to supply the required vegetables to different branches of Agora.

The major problem of implementing the proposed supply chain is to arrange the initial funding that would be required to develop the infrastructure. The initial funding can be collected from the financial institutions through loan or lease. BSOA will have to collect regular subscription from the member superstores in order to return the money borrowed/leased from financial institutions.

To ensure a dynamic and proactive role of BSOA, there should be free and fair election to elect the office bearers of BSOA. There should also be a clear charter of BSOA regarding the rights and obligations of different superstores. BSOA must establish a reliable IT infrastructure to ensure continuous communication between the Distribution Point and the headquarters of different member superstores. Once the supply chain of vegetables is properly established then similar model can also be designed and implemented for other types of products sold by the superstores. In fact, many of the resources developed (i.e. IT infrastructure, transportation pool) can be used for other types of products too.

The role of supply chain drivers such as facilities, inventory, transportation, procurement, pricing, and information played a key responsibility in vegetable supply chain management of super markets. There are a number of role agents such as farmers, focal firms who could be processors, intermediaries, governments and institutions. All of them jointly lead to supply chain profits and create value in the system. Any silos approach leads to the kind of inefficiency that characterized the systems of the past.

Farming has been maturing over the years, but that also brings new sets of issues that need the attention of farm managers and policy makers. The technology, process, and people trilogy plays a significant role in defining supply chain maturity. Technology and process improvements are impacting people in different walks of life, including agribusiness. At agribusiness process unit levels, a number of initiatives with information systems and the use of handheld devices have been supporting positive trends in supply chain efficiency.

The broad objective of the study was to develop backward linkage for supermarkets in Bangladesh. Vegetable items that are sold mostly in Bangladeshi supermarket, their value chain, customer perceptions toward the price, quality and hygienic aspects etc. has been examined.

The specific objectives of the study were:

- To examine how the Supermarket maintain a backward linkage
- To evaluate the customer attitude towards Supermarket
- To assess the cost and the margin of the Middlemen.
- To identify the constraints of Vegetable Marketing of Supermarket in Bangladesh
- To evaluate the prospects for developing supermarket in Bangladesh

Research Question is- What is the nature of existing supply chain system of vegetables of different supermarket in Bangladesh?

The study consists of eight (8) chapters. **Chapter one** identifies the rationale and justification of the study and also explains the study methods and materials. **Chapter two**

reviews the relevant literature on super market and also identifies the research gap. **Chapter three** assessed the scenario of super markets in Bangladesh and their marketing strategies. **Chapter four** discloses
the research design and methodology of this study. Chapter five examines the farmers and middlemen marketing cost and margin of the vegetables. Moreover this chapter examines the attitudes of consumers regarding super markets. Chapter six identifies the possible constraints of vegetable marketing of supermarket in Bangladesh. Chapter seven proposed new supply chain model of vegetable of supermarket. Chapter eight concludes the study.

Chapter one highlighted the concepts of supply chain, participants in supply chain management, implementation of supply chain management, supplier selection criteria, supply chain drivers in agribusiness, rationale of the study, objectives and research questions of the study and chapter plan of the thesis.

Chapter two reviewed extensively the literature regarding to supply chain of vegetables of supermarket, examined the marketing systems of supermarkets in different countries, IT and supply Chain with special reference to supermarkets, vegetable marketing system, and vegetables marketing system of supermarket in Bangladesh.

Chapter three summarized retail market in Bangladesh, types of retail shops, the growth of super market in Bangladesh, challenges of super market in Bangladesh. This chapter also discussed key players of super markets- Agora, Meena bazar, Prince bazar, Shwapno, Nandan mega shop, Carrefamily, Shomoby bazaar(BDR shop), Shop N save and their 4P (Product, Price, Place and Promotion) and STP (Segmentation, Targeting and Positioning) strategy. Moreover, the chapter has highlighted market share of different super markets, porters five forces model and SWOT analysis of super markets.

Chapter four examined the research methodology of this study. We applied both quantitative (descriptive) and qualitative research (exploratory) i.e. mixed method design. In our study, we considered convenience sampling procedure when selecting consumers. Moreover, for selecting farmers and middlemen we applied judgement sampling

procedure.In our study, we applied finite sample size formula for selecting consumers. We administered our survey on 332 customers from different supermarkets of Dhaka city. For selecting farmers and middlemen, we didn't apply any type of sample size determination formula. But we have selected both farmers and middlemen because they are involved with vegetable supply chain of supermarkets. We administered our interview schedule on 40 farmers and 60 middlemen. In the case of farmers, we administered our interview schedule on Bogra, Jessore, and Dinajpur. In the case of middlemen, we administered our interview schedule on Dhaka, Bogra, Jessore, and Dinajpur. Basically we administered our interview schedule on Arathdar, Bepari, Wholesaler, Retailer (Supermarkets).

In our study, we employed Cronbach's alpha test for measuring reliability of survey. The overall Cronbach's alpha value in our study was .929. We applied this reliability statistics on 28 independent / observed variables. Most of value of reliability statistics was more than 0.9.

Chapter five analyzed the attitude of farmers, middlemen and customers towards vegetable marketing of supermarkets in Bangladesh. Out of 60 farmers, 25 percent of the respondents belong to age group less than 30, 25 percent of the respondents belong to age group 31 to 35 years, 16.7 percent of the respondents belong to age group 36 to 45 years, 16.7 percent of the respondents belong to age group 46 to 55 years and 16.7 percent of the respondents belong to age group above 55 years. With respect to year of schooling, 86.7 percent respondents illiterate, 6.7 percent respondents completed 1 to 10 years of schooling, 3.3 percent respondents completed 11 to 15 years of schooling and 3.3 percent respondents completed more than 15 years of schooling.

According to income level, 1.7 percent respondents earn up to 2500 Tk., 11.7 percent respondents belong to income group 2501-5000Tk., 18.3 percent respondents belong to income group 5001-10000Tk., 28.3 percent respondents belong to income group 10001-20000Tk, 26.7percent respondents belong to income group 20001-35000Tk, 10 percent respondents belong to income group 35001-50000Tk, 1.7 percent respondents belong to income group 50001-100000Tk and 1.7 percent respondents earn above 100,000Tk. Out of 60 farmers, 12 percents respondents were female and 80 percent respondents were

male. With respect to marital status, 21.7 percent respondents were single, 70 percent respondents were married, 5 percent respondents were divorced and 3.3 percent respondents were widow. According to farming experience, 31.7 percent farmers acquire less than 20 years of farming experience, 35 percent farmers acquire 21 to 40 years of farming experience, 31.7 percent farmers acquire 41 to 60 years of farming experience and 1.7 percent farmers acquire more than 60 years of farming experience.
With respect to farm size, 68.3 percent farmers belong to small farm groups, 30 percent farmers belong to medium farm groups and 1.7 farmers belong to large farm groups. According to land tenure, 31.7 percent farmers own personal land, 65 percent farmers plough rented land and 3.3 percent farmers plough others category land. With respect to non-farming activities, 76.7 percent farmers didn't involve with any non-farming activities and on the other hand, 23.3 percent respondents involve with non-farming activities. According to cost and return of vegetables, net returns of tomato were higher than brinjal, cauliflower and cabbage. On the other hand, cost of production per hectare was higher for brinjal than for tomato, cauliflower and cabbage.

Out of 40 middlemen, 80 percent middlemen were male and 20 percent middlemen were female. With respect to educational qualification, 52.5 percent middlemen were illiterate, 32.5 percent middlemen completed up to primary level of education , 10 percent middlemen completed up to secondary level, 2.5 percent middlemen completed up to higher secondary level and 2.5 percent middlemen completed above higher secondary level of education. According to purchase of vegetables, 25 percent middlemen purchase vegetables from farmers, 27.5 percent middlemen purchase vegetables from traders, 27.5 percent middlemen purchase vegetables from commission agent, 10 percent middlemen purchase vegetables from cold storage and 10 percent middlemen purchase vegetables from other sources.

With respect to selling, 30 percent middlemen sold vegetables to the traders, 30 percent middlemen sold vegetables to the commission agents, 22.5 percent middlemen sold vegetables to the retailers and 17.5 percent middlemen sold vegetables to the consumers. With respect to age, mean age of the middlemen were 40 years and mean years of

experience of middlemen were 24 years. With respect to selling the type of vegetables, 45 percent middlemen sold onion, 60 percent middlemen sold tomato, 75 percent middlemen sold potato, 75 percent middlemen sold cucumber, 70 percent middlemen sold cauliflower, 70 percent middlemen sold cabbage, 40 percent middlemen sold carrot and 27.5 percent middlemen sold brinjal.

With respect to rural wholesale market cost, both farmers price and rural wholesale market cost was higher in the case of brinjal compare to cauliflower, cabbage and tomato. According to urban wholesale market cost, both urban wholesale market cost and middlemen margin was higher in tomato compare to brinjal, cauliflower and cabbage. With respect to price comparison of vegetables of different supermarkets, prince bazaar offered brinjal and tomato at lower price compare to other super markets. Both Agora and Meena bazaar charge higher price in the case of cabbage and cauliflower.

Out of 332 customers, 40 percent respondents belong to age group 36 to 45 years, 23 percent respondent belongs to 31 to 35 years and only 6 percent respondents belong to less than 30 years. With respect to educational qualifications, 39 percent respondents completed 11 to 15 years of education, around 15 percent respondents completed 1 to 10 years of education and only 6 percent respondents illiterate.

According to income level, 26 percent respondents belong to income group 20,001 to 35,000Tk. and 14 percent respondents earn more than 1,00,000Tk. With respect to sources of information, 37 percent respondents find information from seen on the street, 15 percent respondents get information from social media like face book, twitter etc. and only 1.2 percent respondents get information about super market from friends.

With respect to shopping frequency, 38 percent respondents purchase commodities from super market twice a week or more, 26 percent respondents purchase commodities from super market once a week and only 9 percent respondents purchase commodities from super market less than once a month. According to purchase commodities from different supermarkets, 46 percent respondents purchase commodities from Agora, 29 percent

respondents purchase commodities from Swapno and 13 percent respondents purchase commodities from Prince Bazar.

With respect to type of goods purchased from supermarkets, 13 percent respondents purchase vegetables, 13percent respondents purchase drinks and 4 percent respondents purchase ready to eat food. According to type of vegetables purchased from supermarkets, 8.8 percent respondents purchase Cauliflower, 7.2 percent respondents purchase Brinjal and 4.8 percent respondents purchase Cabbage.

In the case of reliability statistics, overall Cronbach's alpha value was .929 and it indicates that the scales are sufficiently reliable for data analysis. With respect to communalities, Shopping atmosphere (.955), Scale of store (.937), Well known brand names (.935) and Decorations and advertising at stores (.918) are important independent variables due to high commonalities scores.

According to eigen value, all the factors extractable from the analysis along with their eigenvalues, the percent of variance attributable to each factor, and the cumulative variance of the factor. Notice that the first factor accounts for 46.36% of the variance, the second 19.903%, the third 9.512%, the fourth 5.174% and the fifth 4.210%. Results also show that there are fifth factors that influence to select super market. These factors together explain about 85 percent of the variance indicating higher level of importance of the factors.

With respect to varimax rotated component matrix, varimax rotation finds five derived factors. Factor 1 named as 'Necessities and Cleanliness' consisted of eleven variables. Factor 2 named as 'Quality and Environment'. The factor is constituted by five variables. Factor 3 named as 'Availability and Price examination'. The factor is constituted by five variables. Factor 4 named as 'Image and Store location'. This factor consists of five variables. Factor 5 named as 'Enjoyable and fashionable'. This factor consists of two variables.

Chapter six has highlighted the production of vegetables, rural vegetables landing centers, vegetable forward market value chain, and value chain actors like farmers, farias, arotdars, Baparis, and retailers. The chapter also focused on problems of existing supply chain of vegetables like high rate of toll at bazaar, illegal payment to extortionists, lack of storage facilities, hoarding, traders syndicate, frequent load shed of electricity. Moreover, the chapter emphasized role of government in ensuring fair price of vegetables.

Chapter seven proposed a new supply chain model of vegetables for supermarkets. The main focus of the proposed supply chain model of vegetables was to reduce the role of middlemen. To implement the proposed model, Bangladesh Supermarket Owner's Association (BSOA) needs to perform the crucial function of coordinating among the vegetable-producers and different member superstores.

The member superstores should have one point of communication with the Distribution Point for all of their branches. For example, Agora, a leading superstore, should coordinate with the Distribution Point from its head office on behalf of all its branches. That is, different branches of Agora should directly communicate with the head office of Agora, not with the Distribution point of BSOA. The head office, considering the overall demand and supply situation, will order the type and quantity of vegetables to the Distribution Point for all its branches. And the Distribution Point will then take measures to supply the required vegetables to different branches of Agora.

The major advantage of implementing the proposed supply chain is to reduction of cost, effective demand management, economies of scale, ensure fair price to farmers, ensure reasonable price to customers, make sure quality, financial assistance to the farmers, and control price fluctuation in supermarket.

To ensure continuous communication between the Distribution Point and the headquarters of different member superstores, BSOA compelled to establish a reliable IT infrastructure.

Limitations of the Study

The research carried out on farmers, middlemen and customers, who are within a certain age and income bracket. Such respondents often have a tendency to behave artificially when they know that they are being observed. Thus, farmers, middlemen and customers upon whom this research was carried out behave artificially when they are aware that their attitudes and views are being observed. This might affect the data quality slightly.

This research faced time constraint. The researcher was required to maintain a balance between the requirement for having a broader perspective of research needs and the need for quick decision making so as to have complete information.

Since the field of vegetables marketing of super markets is new in Bangladesh, there is not much academic study done. Therefore, availability of secondary sources of information in context of Bangladesh was very limited.

Suggestions for Further Research

The results of the study mainly based on descriptive statistics and factor analysis; further qualitative research techniques like focus group discussions, depth interview could be done in order to analyze attitude of farmers, middlemen and customers toward supermarket.

Further studies could be done considering more sample size and also cover more geographical areas. Further studies can be done how to apply SAP software in vegetable supply chain of supermarkets.

Akkermans, Henk A., Bogerd, Paul, Yucesan, Enver, and Wassenhove, Luk N. Van (2003), "The impact of ERP on supply chain management: Exploratory findings from a European Delphi study," *European Journal of Operational Research*, 146, pp.284–301.

Alam, Md. Ferdous, Palash , Md. Salauddin, Mian, Md. Idris Ali , Dey Madan Mohan (2012), *A Value-chain Analysis of International Fish Trade and Food Security with an Impact Assessment of the Small-scale Sector*, Food and Agriculture Organization.

Ali and Kumar (2011), "Information and communication technologies (ICTs) and farmers' decision-making across the agricultural supply chain," *International Journal of Information Management*, 31, pp. 149–159.

Amrani, Aicha, Deschamps, Jean-Christophe, Bourrières, Jean-Paul (2012), "The impact of supply contracts on supply chain product-flow management", *Journal of Manufacturing Systems*, 31, pp. 253– 266.

Anderson, James C. and Gerbing, David W. (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," *Psychological Bulletin*, 103, pp. 411–23.

Andersen, O. and Buvik, A. (2001), "Inter-firm co-ordination: international versus domestic buyer seller relationship Omega", *The International Journal of Management Science*, 29, pp. 207-219.

Arumugam, Nalini *et al.* (2010), "Supply chain analysis of fresh fruits and vegetables (FFV): Prospects of contract farming," *Agric. Econ. – Czech*, 56(9), pp. 435–442.

ASA University Bangladesh (2006), *Consumers attitude towards the superstore shop in Bangladesh*, Dhaka

Asian Productivity Organization (2007), "Marketing System for Agricultural Products". Available from: Available from: http://www.apo-tokyo.org/ [Accessed on 20th November, 2010].

Asif Md. Kamal (2010), "The Role of Agricultural Marketing in Living Standard of Bangladeshi Peasants". Presented at the 17th Biennial Conference held on 8-10 April, 2010. Osmani Memorial Auditorium and Institution of Engineers, Dhaka, Bangladesh.

Atasoy, Yildiz (2013), "Supermarket Expansion in Turkey: Shifting Relations of Food Provisioning" *Journal of Agrarian Change*, 13(4), pp. 547–570.

Aydın, Z., (2010), "Neo-Liberal Transformation of Turkish Agriculture". *Journal of Agrarian Change*, 10 (2),pp.149–87.

Bachmann, Dieter (2008), "Supermarkets on the rise", *The Daily Star*, December 26, 2008

Bagozzi, Richard P., Yi, Youjae (1988). "On the Evaluation of Structural Equation Models." *Journal of the Academy of Marketing Science*,16 (1),pp.74-95.

Bagozzi, Richard P., Yi, Youjai and Phillips, Lynn W. (1991), "Assessing Construct Validity in Organizational Research," *Administrative Science Quarterly*, 36 (September), pp. 421–58.

Bair, J. (2009) 'Global Commodity Chains: Genealogy and review', in J. Bair (ed.), *Frontiers of Commodity Chain Research*. Stanford, CA: Stanford University Press.

Bangladesh Supermarket Owners Association (BSOA) (2011), Annual *Report 2011*, Dhaka.

Bangladesh Bureau of Statistics (2011), *Statistical Yearbook 2010*, Ministry of Planning, Dhaka.

Basker, E., (2005), "Selling a cheaper mousetrap: Wal-Mart's effect on retail prices.", Journal of Urban Economics, 58, pp. 203–229.

Basker, E., (2007), "The causes and consequences of Wal-Mart's growth", Journal of Economic Perspective, 21, pp. 177–198.

Bagozzi, Richard P., Yi, Youjai and Phillips, Lynn W. (1991), "Assessing Construct Validity in Organizational Research," *Administrative Science Quarterly*, 36 (September), pp. 421–58.

Bearden, William O., Netemeyer, Richard G., and Haws, Kelly L. (2011), *Handbook of Marketing Scales: Multi-Item Measures For Marketing And Consumer Behavior Research*, SAGE Publications, Inc, California.

Bennholdt, Thomsen, V., and Mies, M. (1999), *The Subsistence Perspective.* London: Zed Books.

Bernstein, H., (2006), "Once Were/Still Are Peasants?",*New Political Economy*, 11 (3): pp.399–406.

Bernstein, H., Crow ,B. and Johnson, H. eds, (1992), *Rural Livelihoods*. Oxford: Oxford University Press, Open University.

Biles, J., K,Brehm, A. Enrico, C. Keindl, E. Morgan, A. Teachout, K. Vasquez, (2007), Globalization of Food Retailing and Transportation of Supply Networks', *Journal of Latin American Geography*, 6(2), pp. 55-75.

Boehlje, M., Schrader, L. and Akridgel, J. (1998) , "Observations on formation of food supply chains." In: *Proceedings of the third international conference on chain management in the agribusiness and the food industry* edited by G. W. Ziggers, J. H. Trienekens and P. J. P. Zuurbier. Wageningen: WHO.

Bollen, Kenneth A. (1989), *Structural Equations with Latent Variables,* New York: Wiley.

Braglia, M. and Petroni, A. (2000), "A quality assurance-oriented methodology for handling tradeoffs in supplier selection", *International Journal of Physical Distribution and LogisticsManagement*, 30(2), pp. 96-111.

Bruinsma, J. (ed.) (2003) *World Agriculture: Towards 2015/2030*. An FAO perspective, London: Earthscan for the Food and Agriculture Organization.

Burch, D. and Lawrence, G., eds, (2007), *Supermarkets and Agri-Food Supply Chains.* Cheltenham: Edward Elgar.

Burns, Alvin C. and Bush, Ronald F. (2014), *Marketing Research*, Pearson Education, Inc, Boston.

Busch, L., (2010), "Can Fairy Tales Come True?", *Sociologia Ruralis*, 50 (4),pp. 331–51.

Buurma, J. S. et al. (2001), *Developing countries and products affected by setting new maximum residue limits (MRLs) of pesticides in the EU*. The Hague: Agricultural Economics Research Institute (LEI).

Cai et al. (2013), "Fresh Product Supply Chain Management with Logistics Outsourcing", *The International Journal of Management Science*, 41, pp. 752-765.

Campbell, Donald T. and Fiske, Donald W. (1959), "Convergent and Discriminant Validity by the Multitrait-Multimethod Matrix," *Psychological Bulletin,* 56 (March), pp. 81–105.

Campbell, Donald T. (1960), "Recommendations for APA Test Standards Regarding Construct, Trait, or Discriminant Validity," *American Psychologist*, 15, pp. 546–53.

Cao and Zhang (2011), "Supply chain collaboration: Impact on collaborative advantage and firm Performance", *Journal of Operations Management,* 29, pp.163–180.

Challies, R.T.E., and Murray, W. (2011), "The Interaction of Global Value Chains and Rural Livelihoods". *Journal of Agrarian Change*, 11 (1), pp. 29–59.

Chandrasekaran, N.(2010), *Supply Chain Management*, India: Oxford University Press.

Chandrasekaran , N. and Raghuram, G. (2014), *Agribusiness Supply Chain Management*, Taylor & Francis, Florida, pp.22-35.

Chang, H.J. (2009), "Rethinking Public Policy in Agriculture: Lessons from history, distant and recent", *Journal of Peasant Studies* 36(3), pp. 477-515.

Cho et al. (2012), "A framework for measuring the performance of service supply chain management", *Computers & Industrial Engineering*,62 ,pp. 801–818

Choi, T.Y. and Hartley, J.L. (1996), "An exploration of supplier selection practices across the supply chain", *Journal of Operations Management*, 14(4), pp. 333-343.

Chopra, Sunil, and Meindl, Peter (2001), *Supply Chain Management: Strategy, Planning, and Operations*, Upper Saddle River, NJ:Prentice-Hall, Inc.

Chowdhury, Jhinuk , Reardon, James and Srivastava , Rajesh (1998), "Alternative Modes of Measuring Store Image: An Empirical Assessment of Structured versus Unstructured Measures", *Journal of Marketing Theory and Practice*, 6(2) , pp. 72-86.

Churchill, Gilbert A. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research*, 16 (February), pp. 64–73.

Churchill, Gilbert A. and J. Paul Peter (1984), "Research Design Effects on the Reliability of Rating Scales: A Meta-Analysis," *Journal of Marketing Research*, 21 (November), pp. 360–75.

Clark, Lee Anna and Watson, David (1995), "Constructing Validity: Basic Issues in Scale Development," *Psychological Assessment*, 7 (3), pp. 309–19.

Codron, J. M., Bouhsina Z., Ford, F. Coudel E. and Puech, A. (2004), "Supermarkets in Low-Income Mediterranean Countries", *Development Policy Review*, 22 (5), pp. 587–602.

Collins, N.R. and Holton, R.H. (1963), "Programming Changes in Marketing in Planned Economic Development", *Kyklos*, 16(1), pp. 123-37.

Converse, Jean M. and Presser, Stanley S. (1986), *Survey Questions: Handcrafting the Standardized Questionnaire*, Newbury Park, CA: Sage.

Cortina, Jose M. (1993), "What Is Coefficient Alpha? An Examination of Theory and Application," *Journal of Applied Psychology*, 78, pp. 98–104.

Cronbach, Lee J. (1951), "Coefficient Alpha and the Internal Structure of Tests," *Psychometrika*, 31, pp. 93–6.

Daula, Syed Nazim-ud (2000), *Strategic Information System of Meena Bazar,AIUB, Dhaka.*

Debasish, Sathya Swaroop (2004), "Exploring Customer Preference for Life Insurance in India- Factor Analysis Method," *Vilakshan* 1(1).

Devaraj et al. (2007), "Impact of eBusiness technologies on operational performance: The role of production information integration in the supply chain," *Journal of Operations Management,* 25,pp. 1199–1216.

DeVellis, Robert F. (2003), *Scale Development: Theory and Applications,* 2nd edition, Newbury Park, CA: Sage.

Dholakia and Quader (2004), " AGORA: Venturing into Modern Food Retailing in Bangladesh", *The AIUB Journal of Business and Economics*, 4(Special Issue), pp.51-72.

Dirven, M. and Faiguenbaum, S. (2008), "The Role of Santiago Wholesale Markets in Supporting Small Farmers and Poor Consumers", in E. McCullough, P. Pingali, and K. Stamoulis (eds), *The Transformation of Agrofood Systems: Globalization, supplychains and smallholder farmers*. London: Earthscan for the Food and Agriculture Organization.

Dixon, J., (2009), "From the Imperial to the Empty Calorie". *Agriculture and Human Values*, 26(4), pp. 321–33.

Drickhamer, D. (2002), "Value-Chain Management Moves from Dream to Reality." *Industry Week,* April.

Dries, L., Reardon, T., Swinnen, J., (2004) , "The rapid rise of supermarkets in Central and Eastern Europe: Implications for the agrifood sector and rural development", Development Policy Review, 22, pp. 525–556.

Echanove Huacuja, F., (2006), "Contract Farming and Small-Scale Producers", *Iberoamericana*, 36 (1),pp. 83–102.

Fafchamps, M. (2004), *Market Institutions in Sub-Saharan Africa: Theory and evidence*. Cambridge, MA: MIT Press.

Faiguenbaum, S.; Berdegué, J.A. and Reardon, T. (2002), "The Rapid Rise of Supermarkets in Chile: Effects on dairy, vegetable, and beef chains", *Development Policy* Review, 20(4), pp. 459-72.

FAO (2004), *The State of Food Insecurity in the World 2004*. Rome: Food and Agriculture Organization.

FAO (2009), *The State of Food Insecurity in the World 2009.* Rome: Food and Agriculture Organization.

Farina, E.M.M.Q., and Reardon, T. (2000), " Agrifood Grades and Standards in the Extended Mercosur: Their Role in Changing Agrifood System", *American Journal of Agricultural Economics*, 82(5), pp. 1170-1176.

Fazlur (2008), *Agricultural Marketing System in Bangladesh*, Bangladesh. Consultancy Report, Ministry of Food. Dhaka.

Ferris R.S.B., Collinson C., Wanda K., Jagwe J. and Wright P. (2001), *Evaluating the marketing opportunities for shea nut and shea nut processed products in Uganda*, USAID. p.77.

Fornell, Claes and Larcker, David F. (1981), "Evaluating Structural Equation Models With Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18 (February), pp. 39–50.

Fredendall, Lawrence D. (2001), *Basic of Supply Chain Management*. The St. Lucie Press/APICS Series on resource management. First Edition. Boca Raton, FL.

Friedland, W.H. (1994), "The Global Fresh Fruit and Vegetable System: An industrial organization analysis", in P. McMichael (ed.), *The Global Restructuring of Agro-FoodSystems*. Ithaca, NY: Cornell University Press.

Fulponi, L. (2007), "The Globalization of Private Standards in the Agri-Food System", in J. Swinnen (ed.), *Global Supply Chains and the Poor: How the globalization of food systems and standards affects rural development and poverty*. Trowbridge: CAB International.

Ganeshan, Ram, and Harrison, Terry P. (1995), *An Introduction to Supply Chain Management*, Department of Management Sciences and Information Systems, 303 Beam Business Building, Penn State University, University Park, PA

Georgy, Md. Fahd Al (2016), *Forward Market Value Chain Analysis: Vegetables and Fish Sectors in Bangladesh*, EMBA Project paper, University of Dhaka.

Gereffi, G. (1994), "The Organization of Buyer-Driven Global Commodity Chains: How U.S. retailers shape overseas production networks", in G. Gereffi and M. Korzeniewicz (eds), *Commodity Chains and Global Capitalism*. Westport, CT: Praeger.

Gibbon, P. and Ponte, S. (2005), *Trading Down: Africa, value chains, and the global economy*. Philadelphia, PA: Temple University Press.

Goldman A. and Hino, H. (2005), "Supermarkets vs. traditional retail stores: Diagnosing the barriers to supermarkets' market share growth in an ethnic minority community", *Journal of Retailing and Consumer Services*, 12, pp. 273–84.

Goldman, Arieh; Krider, Robert E.; and Ramaswami, Seshan (2002), " Barriers to the Advancement of Modern Food Retail Formats: Theory and Measurement", *Journal of Retailing*, 78 (4), pp. 281-295.

Goldratt, Eliyahu M.(1984), *The Goal*, Great Barrington, MA: The North River Press Publishing Corporation.

Goodman, D. and Watts, M. (1994), "Reconfiguring the Rural or Fording the Divide? Capitalist restructuring and the global agro-food system", *Journal of Peasant Studies*, 22(1), pp. 1-49.

Government of Bangladesh (GOB)(2016), Internal Documents, Directorate of Agriculture,30th October.

Guarín, Alejandro (2013), "The Value of Domestic Supply Chains: Producers, Wholesalers, and Urban Consumers in Colombia", *Development Policy Review*, 31 (5), pp. 511-530.

Gutman, G. (2002), "Impact of the Rapid Rise of Supermarkets on Dairy Products System in Argentina", *Development Policy Review*, 20(4), pp. 409-27.

Haddad, L. (2003), "Redirecting the Diet Transition: What can food policy do?", *Development Policy Review*, 21(5-6),pp. 599-614.

Hair, J. et al. (2003*), Multivariate Data Analysis*, New Jersey: Prentice Hall.

Hallam, D. and Sarris, A. (2006), 'Introduction', in A. Sarris and D. Hallam (eds), *Agricultural Commodity Markets and Trade: New approaches to analyzing marketstructure and instability*. Cheltenham: Edward Elgar Publishing for the Food and Agriculture Organization.

Handfield, R. B. and Nichols, E. L. (1999), *Introduction to supply chain management*. N.J.:Prentice Hall.

Harvey, M., (2007), "The Rise of Supermarkets and Asymmetries of Economic Power", In *Supermarkets and Agri-Food Supply Chains*, eds D. Burch and G. Lawrence, pp.51–73. Cheltenham, UK: Edward Elgar.

Haynes, Stephen, David C. S. Richard, and Edward S. Kubany (1995), "Content Validity in Psychological Assessment: A Functional Approach to Concepts and Methods," *Psychological Assessment,* 7, pp. 238–47.

Hernández, R., Reardon, T. and Berdegué, J.A. (2007), "Supermarkets, Wholesalers, and Tomato Growers in Guatemala", *Agricultural Economics*, 36(3),pp. 281-90.

Hirschman, A.O. (1958), *The Strategy of Economic Development*. New Haven, CT and London: Yale University Press.

Hong, Paul C. et al. (2010), "Integration Of Supply Chain It And Lean Practices For Mass Customization: Benchmarking Of Product And Service Focused Manufacturers" Benchmarking An International Journal, 17(4), pp.561-592.

Hoq et al. (2012), "Value Addition in Vegetables Production, Processing and Export from Bangladesh", *Bangladesh Journal of Agricultural Research*, 37(3), pp. 377-388.

Hossain and Arangzeb (2009), *Marketing and Economic Development in Bangladesh*, Bangladesh Academy for Rural Development, Comilla.

Hoyle, Rick (1995), *Structural Equation Modeling: Issues and Applications*, Newbury Park, CA: Sage.

Hsiao, H.I., Vorst,Van der, Omta, J.G.A.J. and Kemp, R.G.M. (2010), " Developing a decision-making framework for levels of logistics outsourcing in food supply chain networks," *International Journal of Physical Distribution & Logistics Management,* 40(5), pp. 395-414.

Hueth, B., Ligon, E., Wolf, S. and Wu, S. (1999), "Incentive Instruments in Fruits and Vegetable Contracts", *Review of Agricultural Economics,* 21 (2), pp. 374–89.

Hugos, Michael H. (2003), *Essentials of Supply Chain Management*, Wiley.

Humphrey, J. (2007), "The Supermarket Revolution in Developing Countries: Tidal wave or tough competitive struggle?", *Journal of Economic Geography*, 7(4),pp. 433-50.

Hussain and Leishman (2013), *The Food Retail Sector in Bangladesh,* USDA Foreign Agricultural Service.

Iftekhar,Ahmed , Hossain , Mohammed Shakhawat, Mamun, Mohammad Ziaulhaq and Ahmed, Mustaque (2016), " Supply Chain Management of Fresh Vegetables in Superstores: A Case Study of Bangladesh", *Social Science Review*, 33(2), pp.55-69.

Investopedia(2011), Available at: http://www.investopedia.com/terms/v/valuechain.asp, (Accessed on May 16, 2011).

Islam and Ahsan (2009), "Development of an Effective System for Vegetable Marketing in Bangladesh", Bangladesh Agriculture Research Council(BARC), *Agricultural Economics and Rural Sociology ,* 7, pp..27- 35.

Jacinto E.R. (2004), *A research framework on value chain analysis in small scale fisheries*. Paper presented to the 10th Biennial Conference of the International Association for Study of Common Property, Oaxaca, México, 9–13 August 2004, p.27.

Jack G. A. J. Vorst, Van Der, Adrie, J. Beulens, M. and Beek, Paul Van (2000) , "Modeling and Simulating Multi-echelon Food Systems", *European Journal of Operational Research*, 122(2), pp.354-366.

Jahan, Sharmin and Noor, Farhana (2012), "Consumers' Responsiveness toward Marketing Mix of Super Stores in Bangladesh: A Case study on Meena Bazaar" , *Daffodil International University Journal of Business and Economics,*6(1&2), pp.75-92.

Jansen, K., and Vellema, S. eds. (2004), *Agribusiness & Society.* London: Zed Books.

Jarvis, W. Blair G. and Petty, Richard E. (1996), "The Need to Evaluate," *Journal of Personality and Social Psychology,* 70 (1), pp. 172–94.

Jayne, T. (2008) , "Forces of Change Affecting African Food Markets: Implications for public policy", in E. McCullough, P. Pingali, and K. Stamoulis (eds), *The Transformation of Agrofood Systems: Globalization, supply chains and smallholder farmers*. London: Earthscan for the Food and Agriculture Organization.

Johnson et al. (2007), "Utilizing e-business technologies in supply chains: The impact of firm characteristics and teams", *Journal of Operations Management* ,25 ,pp. 1255–1274

Kabir et al. (2006), " Supply Chain Management of Vegetables of the Superstores of Dhaka City," *Journal of Business Administration,* 32(3&4),pp.41-62.

Kaplinsky , Raphael and Morris, Mike(2000), *A Handbook For Value Chain Research*, The Institute of Development Studies (IDS), University of Sussex. Available at: .https://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf , Accessed on 7th May, 2017.

Karim et al. (2011), "Comparative Advantage of Vegetables Production in Bangladesh", *Bangladesh Journal of Agricultural Research*, 36(1), pp. 87-95.

Kashem , Mohammad Abul (2012), " The Bangladeshi Consumer Behavior and Attitude Toward Superstores", *European Journal of Business and Management*, 4(8),pp. 85-94.

Ken D. Duft, (2009), "Agribusiness Management" .USA. College of Agriculture, Washington State University.

Kenny, David A. and Kashay, Deborah A. (1992), "Analysis of the Multitrait Multimethod Matrix by Confirmatory Factor Analysis," *Psychological Bulletin,* 122, pp. 165–72.

Keyder, Ç., and Yenal, Z. (2011), "Agrarian Change under Globalization", *Journal of Agrarian Change*, 11 (1), pp. 60–86.

Khan, Farhana , Tabassum, Ayesha and Jahan, Kursia (2014), "Assessment of Service Gap in Superstores of Bangladesh by using SERVQUAL Model", *World Review of Business Research ,* 4(1),pp. 109 – 128.

Kolb, Bonita (2008), *Marketing Research: A Practical Approach*, SAGE Publications Ltd, London

Kroes and Ghosh (2010), "Outsourcing congruence with competitive priorities: Impact on supply chain and firm performance, *Journal of Operations Management*, 28, pp.124–143

Kumar, Ajith and William R. Dillon (1992), "An Integrative Look at the Use of Additive and Multiplicative Covariance Structure Models in the Analysis of MTMM Data," *Journal of Marketing Research,* 29 (February), pp.51–64.

Kurt Salmon Associates (1993), *Efficient Consumer Response: enhancing consumer value in the grocery industry*, Washington DC: Food Marketing Institute.

Lance, Charles E., Noble, Carrie L. and Scullen, Steven E. (2002), "A Critique of the Correlated Trait-Correlated Method and Correlated Uniqueness Models for Multitrait-Multimethod Data," *Psychological Methods,* 7 (2), pp. 228–44.

Lehmann, D.R. and O'Shaughnessy, J. (1974), "Difference in attribute importance for different industrial products", *Journal of Marketing*, 38(2), pp. 36-42.

Lightcastlebd (2015a), *Market Insight: Supermarket Industry in Bangladesh – Part 1* Available at:http://www.lightcastlebd.com/blog/2015/02/market-insight-supermarket-industry-bangladesh, (Retrieved on 2nd February, 2017)

Lightcastlebd (2015b), *Market Insight: Supermarket Industry in Bangladesh – Part 2* Available at:http://www.lightcastlebd.com/blog/2015/02/market-insight-supermarket-industry-bangladesh-part-2, (Retrieved on 2nd February, 2017)

Llambí, L. (1994),"Comparative Advantages and Disadvantages in Latin American Nontraditional Food and Vegetable Exports", in P. McMichael (ed.), *The Global Restructuring of Agro-Food Systems*. Ithaca, NY: Cornell University Press.

Lambert, Douglas M., Stock, James R. and Ellram, Lisa M. (1998), *Fundamentals of Logistics Management*, Boston, MA: Irwin/McGraw-Hill.

Lambert, D. M. and Cooper, M. C. (2000), "Issues in supply chain management", *Industrial Marketing Management*, 29, pp. 65-83.

Lundy, M. et al. (2007), "Assessing Small-Holder Participation in Value Chains: The case of vegetables in Honduras and El Salvador", in *Governance, Coordination and Distribution Along Commodity Value Chains. FAO commodities and trade proceedings*. Rome: Food and Agriculture Organization.

Lipton, M. (2005), *The Family Farm in a Globalizing World: The role of crop science in alleviating poverty*, Washington, DC: International Food Policy Research Institute.

Lemeilleur, S., and Codron, J.M. (2011), "Marketing Cooperative vs. Commission Agent", *Food Policy,* 36, pp.272–9.

Lemeilleur, S., and Tozanli, S. (2007), "A Win–Win Relationship between Producer's Union and Supermarket Chains in Turkish Fresh Fruits and Vegetables Sector", Available at : http://www.globalfoodchainpartnerships.org (Accessed on 11 May 2011).

Lee et al. (2011), "Supply chain efficiency and security: Coordination for collaborative investment in technology", *European Journal of Operational Research*, 210, pp.568–578

Magdoff, F., Foster, J.B. and Buttel, F.H. eds, (2000), *Hungry for Profit.* New York: Monthly Review Press.

Malakar (2006), Agricultural Marketing Systems in Bangladesh. Consultancy Report, USAID/BRAC, Dhaka.

Malhotra, Naresh K. (2010), *Marketing Research: An Applied Orientation*, Pearson Education, Inc, New Jersey.

Marsden, T., and Murdoch, J. eds, (2006), *Between the Local and the Global*. Amsterdam: Elsevier.

Marsden, T., Flynn, A. and Harrison, M. (2000), *Consuming Interests: The social provision of foods*, London and New York: UCL Press and Rutledge.

Maruyama M. and Trung, L. V. (2006), "A probit analysis of consumer shopping behavior" , In: *The Proceedings of Australian and News Zealand Marketing Academy Conference 2006* (CD-ROM), ANZMAC.

Maruyama, Masayoshi and Trung, Le Viet (2007), " Supermarkets in Vietnam: Opportunities and Obstacles", *Asian Economic Journal* , 21(1) ,pp. 19–46.

McMichael,P., (2008a), "Peasants Make Their Own History, But Not Just as They please" , *Journal of Agrarian Change*, 8 (2 and 3), pp.205–28.

Meena Bazar (2016), Available at : www.meenabazar.com.bd(Retrived on 2nd February, 2017)

Mentzer, John T., DeWitt,William, Keebler, James S., Min, Soonhong , Nix,Nancy W. Smith, Carlo D. and Zacharia, Zach G. (2001), "Defining Supply Chain Management," *Journal of Business Logistics*, 22(2), p. 18.

Minten, B. (2007), "Domestic Traders Versus Global Retail Chains: Evidence from Madagascar", *Governance, Coordination and Distribution Along Commodity Value Chains. FAO Commodities and Trade Proceedings*. Rome: Food and Agriculture Organization.

Mital R. K, (2008), *Vegetables Production and Marketing*, Asian Productivity Organization (APO), Tokyo.

Morgan, K., Marsden, T. and Murdoch, J. (2006), *Worlds of Food*, Oxford University Press.

Munni, Monira (2010a), "Superstores eye boom time ahead over 600 chain retail outlets expected in few years", *The Daily Bangladesh Economy*, March 5, 2010.

Munni, Monira (2010b), "Superstores focusing more on supply chain management challenge", *The Financial Express*, October 30, 2010.

Netemeyer, Richard G., Bearden, William O. And Sharma, Subhash (2003), *Scaling Procedures: Issues and Applications,* Thousand Oaks, CA: Sage.

Neven, D., Odera, M., Reardon, T. (2006), *Horticulture farmers and domestic supermarkets in Kenya*, Department of Agricultural Economics, Michigan State University, Staff Paper 06.

Neven, D., Reardon, T., (2004), "The rise of Kenyan supermarkets and the evolution of their horticulture product procurement systems", *Development Policy Review*, 22, pp. 669–699.

Nunnally, Jum C. and Bernstein, Ira H. (1994),*Psychometric Theory, New York: McGraw-Hill.*

Nunnally, Jum and Bernstein, Ira H. (1994), *Psychometric Theory,* 3rd edition. New York: McGraw-Hill.

Osmani, Ataul Gani and Hossain, Elias (2015), Market Participation Decision of Smallholder Farmers and Its Determinants in Bangladesh, *Economics of Agriculture,* 62 (1), pp. 163-179.

Özcan,G.B., (2008), "Surviving throughTransplantation and Cloning". In *Handbook of Administrative Reform*, eds J. Killian and N. Eklund, Boca Raton, FL: CRC Press , pp.181–205.

Parvez , Sohel *(2009) ,* "Supermarkets to spread out," *The Daily Star, March 10, 2009.*

Peter, J. Paul (1979), "Reliability: A Review of Psychometric Basics and Recent Marketing Practices," *Journal of Marketing Research,* 16 (February), pp. 6–17.

Peter, J. Paul (1981), "Construct Validity: A Review of Basic Issues and Marketing Practices," *Journal of Marketing Research,* 18 (May), pp.133–45.

Peterson, Robert A. (1994), "A Meta-Analysis of Cronbach's Coefficient Alpha," *Journal of Consumer Research,* 21 (September), pp.381–91.

Porter, M.E. (1985), *Competitive Advantage: Creating and Sustaining Superior Performance*,Collier McMillan, New York, NY, p. 557.

Prince Bazaar (2016), Available at: www.princebazar.com(Retrived on 2nd February, 2017).

Pritchard, B., Gracy, C.P. and Godwin, M. (2010),"The Impacts of Supermarket Procurement on Farming Communities in India", *Development Policy Review*, 28 (4), pp. 435–56.

Rahman (2003), "Internet-based supply chain management: using the Internet to

revolutionize your business", *International Journal of Information Management*,23 ,pp. 493–505

Rajkumar, Paulrajan (2010), "Food Mileage: An Indicator of Evolution of Agricultural Outsourcing", *Journal of Technology Management & Innovation*, 5(2).

Rajkumar , Paulrajan and Jacob , Fatima (2010), " Business Models of Vegetable Retailers in India", *Great Lakes Herald*, 4(1), pp.31-43.

Ranganathan et al. (2011), "Web-enabled supply chain management: Key antecedents and performance Impacts", *International Journal of Information Management*, 31, pp. 533–545.

Reardon, T. et al.(2003), "The Rise of Supermarkets in Africa, Asia, and Latin America", *Journal of Agricultural Economics*, 85(5), pp.1140-46.

Reardon, T., Timmer, P. & Berdegue, J., (2004), " The Rapid Rise of Supermarkets in Developing Countries: Induced Organizational, Institutional, and Technological Change in Agrifood Systems", *The Electronic Journal of Agricultural and Development Economics*, 1(2), pp.168-183.

Reardon, T., and Timmer, C.P. (2007), "Transformation of Markets for Agricultural Outputs in Developing Countries since 1950", *Handbook of Agricultural Economics*, 3, eds R.E. Evenson and P. Pingali, Amsterdam:Elsevier,pp. 2808–55.

Reardon, T., Berdegue, J., (2002), "The rapid rise of supermarkets in Latin America: Challenges and opportunities for development", *Development Policy Review*, 20, pp.371–388.

Reardon, T., Barratt, C.B. Berdegue, J.A. and Swinnen, J.F.M. (2009), "Agrifood Industry Transformation and Small Farmers in Developing Countries", *World Development*, 37 (11), pp. 1717–27.

Reardon, T., Henson, S. and Berdegué, J.A. (2007), "Proactive Fast-Tracking Diffusion of Supermarkets in Developing Countries: Implications for market institutions and trade", *Journal of Economic Geography*, 7(4), pp.399-432.

Reardon, T., Timmer, C., Barrett, C., Berdegue, J., (2003), "The rise of supermarkets in Africa, Asia, and Latin America", *American Journal of Agricultural Economics*, 85, pp. 1140–1146.

Rehber, E., (2000), *Vertical Coordination in the Agri-Food Industry and Contract Farming*, Research Report No. 52, Food Marketing Policy Center, University of Connecticut.

Rexhausen, Daniel, Pibernikb ,Richard, and Kaiser, Gernot (2012), "Customer-facing supply chain practices—The impact of demand and distribution management on supply chain success", *Journal of Operations Management,* 30,pp.269–281.

Richins, Marsha (2004), "The Material Values Scale: Measurement Properties and Development of a Short Form," *Journal of Consumer Research,* 31 (June), pp.209–19.

Robinson, John P., Shaver, Phillip R. and Wrightsman, Lawrence S. (1991), "Criteria for Scale Selection and Evaluation," in *Measures of Personality and Social Psychological Attitudes,* eds. J. P. Robinson, P. R. Shaver, and L. S. Wrightsman, San Diego, CA: Academic Press, pp.1–15.

Roekel, J.V., Willems, S. and Boselie, D.M. (2002), "Agri-Supply Chain Management – To Stimulate Cross-Border Trade in Developing Countries and Emerging Economies,"*World Bank Paper: Cross Border Agri Supply Chain Management.*

Rossiter, John R. (2002), "The C-OAR-SE Procedure for Scale Development in Marketing," *International Journal of Research in Marketing*, 19, pp. 305–35.

Ruben, R. et al. (2007), "Linking Market Integration, Supply Chain Governance, Quality and Value Added in Tropical Food Chains", in R. Ruben et al. (eds), *Tropical Food Chains: Governance regimes for quality management*. Wageningen: Wageningen Academic Publishers.

Sabur, S.A. (1992), " Vegetable Marketing System in Bangladesh", *Journal of Business Administration*, 18(3&4), pp.141-155.

Samuel, B. Philip, C. J. and Timothy, J. L. (2008), "Coordinating the supply chain in the agricultural seed industry," *European Journal of Operational Research*, 185(1), pp. 354–377.

Saxe, Robert and Weitz, Barton A. (1982), "The SOCO Scale: A Measure of the Customer Orientation of Salespeople," *Journal of Marketing Research,* 19 (August), pp.343–51.

Schmitt, Neal and Stults, Daniel M. (1986), "Methodology Review: Analysis of Multitrait-Multimethod Matrices," *Applied Psychological Measurement,* 10, pp.1–22.

Schumacker, Randall E. and Lomax, Richard G. (2004), *A Beginners Guide to Structural Equation Modeling,* 2nd edition, Mahwah, NJ: Erlbaum.

Schwentesius, R. and Gómez, M.A. (2002), "Supermarkets in Mexico: Impacts on horticulture systems", *Development Policy Review*, 20(4), pp. 487-502.

Seiofbluemountain (2012), "A Model of Supply Chain Management Adapted for Agricultural Products", Available at: http://www.seiofbluemountain.com/search/detail.php?id=1330 [Accessed on 10 April, 2013]

Shanin, T., (1971), *Peasants and Peasant Societies, London*: Penguin.

Sharma, H.C., Dahiya, P.S. Malhora, V.P. and Nayar, N.M. (1992), "Price analysis of potatoes vis-à-vis vegetables and pulses in india", *Agricultural Marketing*, 34(4), pp. 8-12.

Shwapno (2016), Available at: www.shwapno.com(Retrived on 2nd February, 2017).

Spangenberg, Erice B., Grohmann, Bianca and Sprott, David E. (2005), "It's beginning to smell (and sound) a lot like Christmas: the interactive effects of ambient scent and music in a retail setting", *Journal of Business Research*, 58.

Stanton, Jeffrey M., Sinar, Evan F. Balzer, William K. and Smith, Patricia C. (2002), "Issues and Strategies for Reducing the Length of Self-Report Scales," *Personnel Psychology*, 55 (Spring), pp.167–94.

Stokke, Hildegunn E. (2009), "Multinational supermarket chains in developing countries: does local agriculture benefit?", *Agricultural Economics*, 40,pp. 645–656.

Sudman, Seymour and Norman M. Bradburn (1982), *Asking Questions*, San Francisco: Jossey-Bass.

Taslim, M. A. (2009), Available at: www. opinion.bdnews24.com/2009/12/08/off-the-markbackward-linkages-and-high-value-products/ (Accessed on 10th January, 2011).

Tennent, R., and Lockie, S. (2011), "Production Relations under GLOBALG.A.P", *Sociologia Ruralis*, 52 (1), pp. 31–47.

The University of Texas at Austin (1995), *Factor Analysis Using SAS PROC FACTOR*. Available at: www.utexas.edu/cc/docs/stat 53.html (Retrieved on 25th June, 2005).

Tinne, Wahida Shahan(2011), "Factors Affecting Impulse Buying Behavior of Consumers at Superstores in Bangladesh", *ASA University Review*, 5 (1), pp.209-220.

Traill, W.B.(2006), " The rapid rise of supermarkets", *Development Policy Review*, 24, pp.163–174.

Trochim, A. (2002), *Construct Validity*. Retrieved November 19, 2002, from http://trochim.human.cornell.edu/kb/constval.htm

Tschirley D, Ayieko M, Hichaambwa M, Goeb J, Loescher W.(2011), " Modernizing Africa's fresh produce supply chains without rapid supermarket takeover: towards a definition of research and investment priorities. Proceedings of Towards priority actions for market development for African farmers", sponsored by *International Livestock Research Institute*, Nairobi. May 13-15, 2009.

Ulukan, U., (2009), *Türkiye Tarımında Yapısal Dönü¸süm ve Sözle¸smeli Çiftçilik*. Istanbul: SAV Sosyal Ara¸stırmalar Vakfı.

Van der Meer, K. and Ignacio, L. (2007), "Standards and Supply-Chain Coordination – Impact on small-scale producers", *Governance, Coordination and Distribution Along Commodity Value Chains. FAO commodities and trade proceedings*. Rome:Food and Agriculture Organization.

Vettas, N. (2007), "Market Control and Competition Issues Along the Commodity Value Chain", *Governance, Coordination and Distribution Along Commodity Value Chains. FAO commodities and trade proceedings*. Rome: Food and Agriculture Organization.

Voss, Doug (2013), "Supplier choice criteria and the security aware food purchasing manager, *The International Journal of Logistics Management*, 24(3), pp. 380-406.

Waarden, Lars Meyer and Benavent, Christophe (2009), "Grocery retail loyalty program effects: self-selection or purchase behavior change?" *Journal of the Academy of Marketing. Science*, 37, pp.345–358.

Watts, M., (1990), "Peasants under Contract". In *The Food Question*, eds H. Bernstein, B. Crow, M. Mackintosh and C. Martin, New York: Monthly Review Press, pp. 149–62.

Weatherspoon, D. and Reardon, T., (2003), "The rise of supermarkets in Africa: Implications for agrifood systems and the rural poor", *Development Policy Review*, 21, pp. 333–355.

Widaman, Keith F. (1985), "Hierarchically Nested Covariance Structure Models for Multitrait-Multimethod Data," *Applied Psychological Measurement*, 9, pp.1–26.

Wolf, E., (1966), *Peasants.* Englewood Cliffs, NJ: Prentice-Hall.

World Bank (2007), *World Development Report 2007*. Washington, DC: The World Bank.

World Bank (2008), *World Development Report 2008*. Washington, DC: The World Bank.

Wrigley, N. and Lowe, M. (2007), "Transnational Retail and the Global Economy", *Journal of Economic Geography* 7(4), pp. 337-40.

Yasmin et al. (2005), "Emergence of Supermarkets: The Rationale for Changes in Consumers' Shopping Pattern for Household Requirements", *Journal of Business Studies*, 26(1), pp.239-247.

Yasmin et al. (2006), "Selecting a Store Format: Determinants of Consumers' Preference for Supermarket Shopping", *Journal of Business Studies*, 27(1), pp.213-231.

Zahid et al. (2012), *Value chain Analysis of Agricultural Commodities in Bangladesh*, Bangladesh Academy for Rural Development (BARD), Comilla.

Zhou and Benton (2007), "Supply chain practice and information sharing", *Journal of Operations Management*, 25, pp. 1348–1365.

Questionnaire for Farmers: Interview Schedule

Principal Investigator: Mohammad Anwar Hossain
Ph.D. Research Scholar
Department of Marketing
University of Dhaka
Dhaka

Date of Survey:

Place of Survey:

Serial No.:

Name of Investigator:

Name of Respondents:

1. What is your age? (Circle one answer)

Age(in Years)	Code
≤ 30	1
31-35	2
36-45	3
46-55	4
>55	5

2. What is your level of education? (Circle one answer)

Year of Schooling	Code
0	1
1-10	2
11-15	3
>15	4

3. Level of Farm Income (Monthly) (Circle one answer)

Level of Farm Income (in Taka)	Code
Upto 2500	1
2501-5000	2
5001-10000	3
10001-20000	4
20001-35000	5
35001-50000	6
50001-100000	7
Above 100000	8

4. Gender (Circle one answer)

Gender	Code
Male	1
Female	0

5. Marital Status (Circle one answer)

Marital Status	Code
Single	1
Married	2
Divorced	3
Widow	4

6. Years in Farming/Experience (Circle one answer)

Years in Farming/Experience	Code
< 20	1
21-40	2
41-60	3
> 60	4

7. Farm Size (acres) (Circle one answer)

Farm Size (acres)	Code
Small farm(0.05-2.49 acres)	1
Medium farm(2.50-7.49 acres)	2
Large farm(7.50 acres and above)	3

8.Land Tenure/Ownership (Circle one answer)

Land Tenure	Code
Personal	1
Rented	2
Others	3

9.Non-farming Activities (Circle one answer)

Non-farming Activities	Code
Yes	1
No	0

10. Production Cost (Per Ton/Kg)

Items	Cost
Seed	
Fertilizer	
Insecticides	
Plough	
Daily Labor	
Pumping / Water Facilities	
Others	

11. Marketing Cost of Producer/Farmers(per Kg/Ton)

Vegetables	**packaging**	**Transport**	**Extra fees to truck driver for overloaded**	**Unlawful money collection on the roads and highway**	**Additional duty on ferry / bridge**	**Cost of wastage for traffic jam**	**Market Fee**	**Commission**	**Loading /Unloading**	**Farmer's Total Cost**
Onion(local)										
Tomato										
Potato										
Cucumber										
Cauliflower										
Cabbage										
Carrot										

12. Constraints regarding the production and preservation of vegetables (Mention any five)

a.
b.
c.
d.
e.

13. Possible solutions about the problems of production and preservation of vegetables (Mention any five)

a.
b.
c.
d.
e.

14. Constraints of marketing vegetables by the farmers in the study area (Mention any five)

a.
b.
c.
d.
e.

16. What are the steps to be taken by the government for ensuring fair price of agricultural crops? (Mention any four)

a.
b.
c.
d.

17. What steps should be taken by the government to ensure fair price of vegetables for consumers? (Mention any four)

a.
b.
c.
d.

18. What are the institutional limitations related to the increase of vegetable production? (Mention any three)

a.
b.
c.

Thanks for your cooperation and sympathy

Questionnaire for Middleman/Retailers: Interview Schedule

Principal Investigator: Mohammad Anwar Hossain
Ph.D. Research Scholar
Department of Marketing
University of Dhaka, Dhaka

Date of Survey:

Place of Survey:

Serial No

Name of the Respondents:

Designation:

Gender: 1) Male 2) Female

Age:

Years of Experience in Current Profession:

Educational Background: 1) Illiterate 2)Primary 3) Secondary 4)Higher Secondary
5) Above Higher Secondary

Type of Vegetables:1) Onion (local)2) Tomato 3) Potato 4) Cucumber 5)Cauliflower
6) Cabbage 7) Carrot

From Whom to Purchased: 1) Farmer 2) Trader 3) Commission Agent 4) Cold Storage
5) Others

To Whom to Sold: 1) Trader 2) Commission Agent 3) Retailer 4) Consumer

1. Marketing Cost of Middleman (per Kg)

Vegetables	**packaging**	**Transport**	**Extra fees to truck driver for overloaded**	**Unlawful money collection on the roads and highway**	**Additional duty on ferry / bridge**	**Cost of wastage for traffic jam**	**Market Fee**	**Commission**	**Loading /Unloading**	**Middleman'sTotal Cost**
Onion (local)										
Tomato										
Potato										
Cucumber										
Cauliflower										
Cabbage										
Carrot										

2. Marketing Margin of Middleman (per Kg)

Vegetables	Marketing Cost	Marketing Margin	Farmer's Share
Onion (local)			
Tomato			
Potato			
Cucumber			
Cauliflower			
Cabbage			
Carrot			

3. What are the causes of high price/price hike of vegetables? (Any three)

1	
2	
3	

4. What type of problems faced by the middlemen in marketing of vegetables? (Any four)

1	
2	
3	
4	

5. What steps government should take in vegetables marketing for ensuring Fair Prices to the farmers? (Any four)

1	
2	
3	
4	
5	

Thanks for your cooperation and sympathy.

Questionnaire for Consumers: Interview Schedule

Principal Investigator: Mohammad Anwar Hossain
Ph.D. Research Scholar
Department of Marketing
University of Dhaka, Dhaka

Date of Survey:

Place of Survey:

Serial No.:

Name of Investigator:

Name of Respondents:

1. What is your age? (Circle one answer)

Age(in Years)	**Code**
≤ 30	1
31-35	2
36-45	3
46-55	4
>55	5

2. What is your level of education? (Circle one answer)

Year of Schooling	**Code**
0	1
1-10	2
11-15	3
>15	4

3. What is your monthly individual income? (Circle one answer)

Monthly Income(in Taka)	**Code**
Upto 2500	1
2501-5000	2
5001-10000	3
10001-20000	4
20001-35000	5
35001-50000	6
50001-100000	7
Above 100000	8

4. How you get information about super store? (Circle all that apply)

Sources of Information	**Code**
TV advertisement	1
Newspaper	2
Friends	3
Seen on the street	4
Magazine	5
Radio	6
Online/Social Media	7
Others	8

5. How many times you visit super store? (Circle one answer)

Shopping Frequency	**Code**
Every day	1
Twice a week or more	2
Once a week	3
1-3 times a month	4
Less than once a month	5
Never	6

6. What type of goods you purchased from super store? (Circle all that apply)

Kinds of Goods Purchased	**Code**
Toiletries	1
Household amenities	2
Confectionery	3
Frozen food	4
Drinks	5
Processed food	6
Fresh food	7
Personal care products	8
Ready to eat food	9
Cloths	10
Consumer durables	11
Foot wear	12
Vegetables	13

6. What type of vegetables you purchased from super store? (Circle all that apply)

Kinds of Vegetables Purchased	**Code**
Onion (local)	1
Onion (Indian)	2
Tomato	3
Potato	4
Ginger	5
Cucumber	6
Cauliflower	7
Cabbage	8
Carrot	9
Lemon	10
Green Chili	11
Pottol	12
Green Papaya	13
Others	14

7. Why you go for superstore?
(Circle all that apply and circle the appropriate number below)

Observed or Original Variables	**Highly Agree**	**Agree**	**Neutral**	**Disagree**	**Highly Disagree**
1.Appropriates of Weight	5	4	3	2	1
2.Self Service	5	4	3	2	1
3. Guarantee of Quality	5	4	3	2	1
4. Fixed Price	5	4	3	2	1
5. Safe and Clean	5	4	3	2	1
6.The ability to search for something unique	5	4	3	2	1
7. One stop service	5	4	3	2	1
8.Enjoyable and relaxing	5	4	3	2	1
9.To buy everyday necessities	5	4	3	2	1
10.Good service of sales persons	5	4	3	2	1
11.Reasonable prices	5	4	3	2	1
12.Freshness	5	4	3	2	1
13.Quick examination of prices	5	4	3	2	1
14.Curiosity	5	4	3	2	1
15.Prestige/image	5	4	3	2	1
16.Air conditioning	5	4	3	2	1
17.Parking lot	5	4	3	2	1
18. Scale of store	5	4	3	2	1
19.Decorations and advertising at stores	5	4	3	2	1

20.Return and adjustment	5	4	3	2	1
21.Location of store	5	4	3	2	1
22.Fashionable	5	4	3	2	1
23.Convenience for shopping	5	4	3	2	1
24.Well known brand names	5	4	3	2	1
25. Variety of product lines	5	4	3	2	1
26. Shopping atmosphere	5	4	3	2	1
27. Availability of product	5	4	3	2	1
28. Quick service	5	4	3	2	1

8. How to improve the vegetable marketing system (Provide four suggestions)

1	
2	
3	
4	

9. What steps government should take in vegetables marketing for ensuring Fair Prices to the consumers? (Any four)

1	
2	
3	
4	
5	

Thanks for your cooperation and sympathy.