Graduate School of Business

Improving Competitiveness of Readymade Garment (RMG) Industry of Bangladesh - Analysis of Supply Chains

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature:

Date:

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In the name of Allah, the Most Gracious and the Most Merciful .....

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DEDICATION

To my beloved late father Md. Abdul Hannan, mother Begam Maleka Parvin, my better half Mist Rebeka and my two lovely Imtiaz and Jubair….. whom I know that forever will love me… Your pure hearts always motivate me to pursue our dream. I love you guys….. THIS is for US!

ABSTRACT

The textile and garment industry (also known as the clothing industry) is one of the oldest and largest export industries in the world. In the post Multifibre Agreement (MFA) period the Ready-made Garment (RMG) business across the world is very much challenging. To survive in the competitive environment it is also challenging for the RMG industry of Bangladesh. To face the challenges in the quota free world, the RMG industry of Bangladesh need to consider it's present competitiveness. The competitiveness can be improved through analysing supply chain. Therefore, to fill up this gap this study attempts to develop a model of improving competitiveness through analysing the supply chain of RMG industry in Bangladesh.

The supply chain (SC) of garment industry of Bangladesh is very challenging as it depends on imported raw materials and on the demand of foreign buyers. Supply Chain Management (SCM) in the RMG sector is characterized by different organizational co-ordination or relationship management where success lies on how each organization (related to garment industry and government organizations) or the members of supply chain coordinate and cooperate with their business partners. The supply chain of Bangladeshi RMG is specially characterized by vulnerable political environment and country risk. Therefore success also lies on how the organization getting integration influenced by different government offices and political actions. Therefore the objective of this study is to investigate how the country risk, different political actions from the government and bureaucratic behaviour influence the activities in the supply chain. The main objective of this study is to investigate the influence of these external stakeholders' elements to the demand side and supply side drivers and barriers for improving competitiveness of RMG industry in the way of analysing supply chain.

Considering the phenomenon of recent change in the RMG business environment and the competitiveness issues this study uses the principles of Stakeholder and Resource Dependence theory and aims to find out some factors which influence to make an efficient supply chain for improving competitiveness. Following a positivist

paradigm, this study adopts a two phase sequential mixed method research design consisting of qualitative and quantitative approaches. A tentative research model is developed first based on extensive literature review. Qualitative field study is then carried out to fine tune the initial research model. Findings from the qualitative method are also used to develop measures and instruments for the next phase of quantitative method. A survey is carried out with sample of top and middle level executives of different garment companies of Dhaka city in Bangladesh and the collected quantitative data are analyzed by Partial Least Square-based Structural Equation Modeling.

Eight hypotheses are supported. From the analysis it is revealed that the external stakeholders' elements like bureaucratic behaviour and country risk have significant influence to the barriers. It is also revealed that from the internal stakeholders' point of view the manufacturers' and buyers' drivers have significant influence on the competitiveness. Therefore stakeholders need to take proper action to reduce the barriers and increase the drivers, as the drivers have positive influence to improve competitiveness.

This study has both theoretical and practical contributions. This study represents an important contribution to the theory by integrating two theoretical perceptions to identify factors of the RMG industry's SC that affect the competitiveness of the RMG industry. This research study contributes to the understanding of both external and internal stakeholders of national and international perspectives in the RMG (textile and clothing) business. It combines the insights of stakeholder and resource dependence theories along with the concept of the SC in improving effectiveness. In a practical sense, this study certainly contributes to the Bangladeshi RMG industry. In accordance with the desire of the RMG manufacturers, the research has shown that some influential constructs of the RMG industry's SC affect the competitiveness of the RMG industry. The outcome of the study is useful for various stakeholders of the Bangladeshi RMG industry sector ranging from the government to various private organisations.

Finally, the applications of this study can be extended through further adaptation in other industries and various geographic contexts.

ACRONYMS

ADB	Asian Development Bank
ASEAN	Association for South East Asian Nations
ATC	Agreement on Textile and Clothing
BBS	Bangladesh Bureau of Statistics
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
BTMA	Bangladesh Textile Manufacturers Association
CEO	Chief Executive Officer
CMT	Cut, Make and Trims
C&F	Clearing and Forwarding
CPD	Centre for Policy Dialogue
EC	European Council
EPB	Export Promotion Bureau
EPZ	Export Processing Zone
EU	European Union
FDI	Foreign Direct Investment
GATT	General Agreement on Tariffs and Trade
GSP	Generalized System of Preferences
ILO	International Labour Organisation
ITC	International Trade Centre
LC	Letter of Credit
LDC	Least Developed Country
MD	Managing Director
MFA	Multi Fibre Arrangement
NGO	Non Government organization
NIE	Newly Industrialized Economy
R & D	Research and Development
RMG	Readymade garment
SAFTA	South Asia Free Trade Agreement
UNCTAD	United Nations Conference on Trade and Development
UNICEF	United Nations International Children's Fund
WB	World Bank

Conference papers from this Thesis

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CHAPTER 1

Introduction

1.1 Overview

The textile and garment industry (also known as the clothing industry) is one of the oldest and largest export industries in the world. In this industry, the clothing or garment business has been governed since 1974 by a system of quotas known as the Multi-Fibre Arrangement (MFA). This arrangement has enabled the developed countries to bilaterally negotiate quotas with various suppliers' countries, based on their competitiveness. During the Uruguay round of multilateral trade negotiations (1986-93), it was decided to integrate the MFA into the new ATC (Arrangement on Textile and Clothing) and as per the World Trade Organization (WTO) agreement on the ATC, all quota-imposing member countries were required to lift the entire quota with a clear 10-year time line in four phases beginning from 1 January 1995 (Adhikari and Weeratunge 2006; Sultana et al. 2011).

The quota system was completely phased out in January 2005 (Haider 2007; Nuruzzaman 2007). This changed new business environment has created challenges for all concerned parties, namely, the buyers or importers from the developed countries and the exporters or suppliers from the developing countries. Certainly, some developing countries such as Bangladesh had been able to gain a strong foothold in a quota-driven global garments market over previous years and the quota system indeed provided developing countries with a certain degree of predictability and security in assessing the garment markets of developed countries. In the post-MFA period, developing countries like Bangladesh were no longer provided with any special trade concession. Therefore, a new challenging environment emerged from that time.

Countries like Korea, Hong Kong, Malaysia and Taiwan were highly competitive in this sector until the early 1980s. However, developing countries such as Bangladesh, China, India, Indonesia, Pakistan, Vietnam, Cambodia, Mauritius and many sub-Saharan African countries have now taken over the labour-intensive segments of the

textile and garment sector and are competing in the garment business(International Monetary fund 2012). The major challenges for the garment-exporting developing countries started from the time when Vietnam entered the WTO (in 2007) and the re-imposed quotas on China were phased out (in 2008). After removal of quotas, buyers are now free to source garment or apparel items in any amount from any country (subject only to a system of tariffs). Therefore, fierce competition and unrest has started in global garment production and trade (Appelbaum 2005; UNCTAD 2005). The competitiveness issue, that is, the ability to compete globally came into consideration from that time.

The supply chain of the textile and clothing sector consists of a number of discrete activities. The supply chain, beginning with sourcing of raw materials, design and production through to distribution and marketing, is being organised as an integrated production network. When the decision about location is being made, costs, quality, reliability of delivery, delivery time, access to quality inputs, and transport and transaction costs are important factors for achieving competitiveness through the supply chain (Nordås 2004). In the ready-made garments (RMG) industry, Bangladesh's achievements have been recognised mainly to its increased competitiveness in the manufacture of low-cost high volume RMG items. But in the post-MFA period, competitors have started to manufacture these low-cost RMG items. Bangladesh faces difficulties in maintaining its existing competitiveness with the market share falling in terms of volume and value. The South Asian region as a whole faces several challenges, some of which can be overcome only through concerted efforts by various stakeholders (Adhikari and Weeratunge 2006).The support mechanism provided by the government and bureaucrats should be increased to achieve effective and efficient collaborative activities among stakeholders throughout the supply chain.

Bangladesh has been chosen for this study as it is a promising developing nation in the garment sector and it has large numbers of uneducated, unskilled and unemployed labour especially the women who are very important for the labour-intensive garment industry. This industry plays a major role in job creation. At present, the Bangladeshi economy is largely dependent on the garment sector, earning 75-78% of foreign currency from this sector. The economy of Bangladesh will be in jeopardy whenever this sector loses its competitiveness and market share.

The main objective of this study is to improve or increase competitiveness via analysing the supply chain in the garment sector of Bangladesh. Many companies are implementing supply chain management (SCM) in an effort to increase competitiveness, profit and customer satisfaction (Nordås 2004). Improving competitiveness is essential for any industry to survive in the extremely competitive business environment. Bangladesh can improve its competitiveness in this sector through developing the supply chain (Awal 2005). A supply chain is defined as a set of three or more companies directly linked by one or more of the upstream and downstream flows of the products, services, finances and information from a source to a customer. A supply chain strategy determines the nature of the procurement of raw materials, transportation of materials to and from the company. Competitiveness is actually a company's competitive strategy which defines the set of customer demands that it seeks to satisfy through its products and services (Kale 2007)

Bangladesh has a comparatively good supply chain in the knit fabric sector and sources 80% of knit fabrics from domestic manufacturers although the basic raw materials are imported. But the textile industry is not as developed as the woven garment sector. It is able to source only 15% of raw materials from the local market: the balance has to be imported from countries such as India, Pakistan, Hong Kong and Taiwan (Rahman 2005) . Developing countries like Bangladesh can make investments in the backward linkage industries to reduce supply chain constraints and to enhance competitiveness (Adhikari 2007a). But the textile industry is usually more capital intensive than the garment industry. It is very difficult for a developing country like Bangladesh to create backward linkages to the local economy. This creates the bottleneck of the present garment supply chain. In this situation, stakeholders in the supply chain and their role may need to change to increase competitiveness. Therefore, stakeholder theory has been applied in this study to increase competitiveness. This can be done not only through achieving lower production costs but also Bangladesh needs to ensure an efficient supply chain despite its poor financial, physical and institutional infrastructure. Based on stakeholder theory, external and internal stakeholders may increase competitiveness through their coordinated and co-operational activities in the supply chain.

1.2 Background of Research Area

The cold war has ended but the trade war has begun. Different types of trade bloc, region, rim, etc. are being constituted. Due to the WTO contract, from January 2005, wide and fierce competition has taken place in the global garments market in the new environment of a free-market economy (Nuruzzaman, Haque, and Rafiq 2010) . The developing countries are no longer provided with any special trade concession in the garments business. The principle of survival of the fittest is now the norm in the trade and commerce of garment products.

As global competition in the textile and garment business intensifies under the new quota-free trading rules, countries around the world are bracing for major changes in the structure of sourcing and supply of garment products worldwide. In the quota-free regime, a developed country's garment producer will no longer have the protection that the quotas provided and, on the other hand, a developing country's producers and suppliers will no longer be restrained by quotas. The formation of a global garments market comprising entry restrictions and quota premiums has been replaced by competition and competitive advantages. The expectation in this situation is that, as the supply network becomes more consolidated post-MFA, countries with stable supply networks and well-developed capacities for scaling up will benefit from the elimination of quotas. However, some countries which had benefited from assured, although limited, access to export markets under the quota system, will lose out (Nordås 2004; Tewari 2006) .

The supply network and its management is a complex field of study. Supply chain management (SCM) is concerned with the effectiveness of dealing with final customer demand by the parties engaged in the provision of the product as a whole (Cooper, Lambert, and Pagh 1997). Buyers can benefit not only due to the low production cost arising from the cheapest labour but also from developing countries ensuring efficient operation of the supply chain network in the face of poor financial, physical and institutional infrastructure (Nordås 2004).

The practical field of SCM is constantly changing, as the competitiveness of international companies is more and more dependent on their capability to produce and deliver customized products and services fast and efficiently all over the world

(Halldorsson 2007). For many companies or firms, using their supply chains as competitive weapons has become a central element of the strategic management process in recent years. Although SCM has been used as an effective management tool in the apparel (RMG) sector to reduce lead time and increase performance (Bertolini et al. 2007; Brito, Carbone, and Blanquart 2008; Lam and Postle 2006), there is a severe lack of proper applications of the supply chain in the RMG sector in Bangladesh.

The competitive edge of Bangladesh RMG is greatly influenced by, among other factors, lead time management, the political environment and the government's role. To compete successfully in the fiercely competitive post-MFA global free-trade market, manufacturers must be adequately equipped with the latest knowledge of scientific management in minimizing lead time and other management deficiencies must be properly addressed. This sector must be given complete support and build up the backward linkage industry to minimize lead time. But the development of the backward linkage industry in the short term is not a very easy task. It is very difficult for a country like Bangladesh to create backward linkages to the local economy in the present business environment (Nordås 2004). Therefore, steps have been taken to find out some alternatives in the supply mechanism to minimize lead time and increase efficiency and competitive advantage to achieve competitiveness.

From its modest start in the 1970s, the RMG industry has grown considerably. At present, there are approximately 6,000 garment units. This industry provides many jobs to the neglected mass of Bangladeshi society. Over the years, the earnings from RMG exports have increased dramatically from a meagre US$68,000 in 1978 to US$12.3 billion in 2008-09 (Batexpo 2012; Adhikary 2007). The economy of Bangladesh is very dependent on the garment sector. Due to their lack of competitiveness, all garment companies are not doing well and are not viable. Just after the MFA, Bangladesh found it difficult to maintain its competitiveness with its market share falling in terms of volume from 24% in 2005 to 20% in 2006 and, in terms of value, from 13% to 11% in the same period (Adhikari 2007a). Moreover, the average growth rate of Bangladeshi RMG products was reduced dramatically. It was 23% (US$ million) in 2005-06 but reduced to 15% in 2008-09 and 1% in 2009-10 (Hossan, Sarker, and Afroze 2012; Joarder, Hossain, and Hakim 2010).

In the post-MFA period, the Asia Foundation launched a regional project on building competitiveness and recommended that the key actors in the RMG sector be identified and discuss with different stakeholders to help build the relationship with the three parties – employers, employees and public authorities. Through discussion, they identified the key issues which cover a wide range of areas where improvements and reforms have to be made in order to make the garment industry more competitive. These issues include inadequate infrastructure, inefficient and corrupt facilities in port and custom procedures, insufficient business support, low level of labour standards and compliance, and ineffective policy support. With regard to public authorities, political action of the government and bureaucrats' behaviours are also very important areas to be addressed to solve those problems. Therefore, the three parties, namely, the employers, labour unions and the government, need to come together to discuss areas of collaboration in order to improve the competitiveness of the RMG industry.

The Bangladesh Textile Manufacturers Association (BTMA) is a large stakeholder in the supply chain as they supply fabrics to garment manufacturers. Due to their opposition, the Bangladesh Garment Manufacturers Association (BGMEA) has failed to take some effective decisions about the supply chain. Government officials such as bureaucrats can take the initiative to arrange discussions among stakeholders to encourage them to make positive decisions in favour of the RMG sector. But due to a non-cooperational attitude, there is a poor relationship between these two large stakeholders. It is crucial for different stakeholders of the sector to have dialogue amongst themselves with the purpose of identifying the main issues that need to be carried out in order to improve the sector's competitiveness.

Competitiveness is the capability of producing and delivering customized products and services fast and efficiently all over the world (Buckley, Pass, and Prescott 1988). Supply chain activities are very important for delivery. The supply chain activities transform various resources, raw materials and components into a finished product that is delivered to the end customer. SCM spans all movement and storage of raw materials, work-in-process inventory and finished goods from point-of-origin to point-of-consumption. Many companies are implementing SCM in an effort to increase competitiveness, profit and customer satisfaction (Nordås 2004). Therefore, analysing the supply chain is important to improve the competitiveness of the RMG sector.

As with other business management principles, SCM also applies to the textile and apparel industries (Stone 1994). Supply chain members need to cooperate with the supply chain's downstream customers or buyers and upstream suppliers or manufacturers to achieve the supply chain's goal. Cao (2006) pointed out in his PhD thesis that quick response (QR) is very important in supply chain activities to create competitive advantage in the textile and apparel industry.

Most studies in the textile sector have focused on integration and relationship management for building partnerships between different parties of the chain and synchronizing activities throughout the chain (Chandra 1997; Zhao et al. 2008). In the literature (Bowen 2000; Cao et al. 2008; Dossenbach 1999; Rungtusanatham 2003; Wong 1999), coordination, collaborative relationships and partnerships are described as preferential situations and as beneficial to all parties involved in the chain. Some studies (Au and Ho 2002; Buxey 2005; Chandra and Sameer 2000; Lambert and Pohlen 2001; Nuruzzaman 2009; Nuruzzaman, Haque, and Rafiq 2010; Pramatari 2007) have recommended various technological solutions like applications of information technology (IT), information and communications technology (ICT), e-commerce, electronic data interchange (EDI) implementation, etc. to improve competitive advantage and performance through lead time reduction and supply chain (SC) collaboration. Many studies (Bruce, Daly, and Towers 2004; Chandra and Sameer 2000; Mason - Jones and Towill 1999; Perry, Sohal, and Rumpf 1999), have emphasized creating an information-enriched SC, that is, quick response (QR) and accurate response (AR) (Hunter and Valentino 1995) in the textile SC. Some studies have also recommended the just-in-time (JIT) delivery system, production planning period compression, and lean and agile approaches that effectively synchronize the manufacturing process in order to reduce cycle time and lead time (Christopher, Lowson, and Peck 2004; Ferdousi and Ahmed 2009; Mason - Jones and Towill 1999; Toni and Meneghetti 2000). Jin's (2004) research described how least developed countries (LDCs) obtained competitive advantage in the garment (apparel) industry using Vernon's (1966) product life cycle (PLC) theory and Frobel's (1980) New International Division of Labor (NIDL) theory The author also described how these countries increased their competitive advantages leveraging industry-specific and country-specific advantages.

Besides the above studies, no significant studies were found that dealt with improving competitiveness through SCM in the clothing sector. However, a number of studies have effectively used different aspects of SCM for improved management in various industries. For example, Seuring (2004) illustrated increased cooperation through an integrated supply chain; Cavinato (1992) considered the inter-firm total cost concept and value-added management; Rao (2005) and Bacallan (2000) described and considered the green SC; Stadtler (2005) cited the task of integrating organisational units along a SC and coordinating materials, information and financial flows in order to fulfil customer demand; Bhatnagar et al. (2005) explained that operational competitiveness was influenced by qualitative factors; Gunasekaran et al. (2001) emphasized improving performance at the strategic, tactical and operational levels; and Lummus (1999) illustrated the use of collaborative relationships to improve competitiveness. But in these above studies, the country factors (the external stakeholders of the SC) were not considered. While there is no right theory for managing the SC, Halldorsson (2007) considered different organisational theories and models to explain inter-organisational phenomena in order to develop the SCM paradigm as a scientific discipline.

To gain competitive advantage in an international supply chain, one needs to match the value-adding activities of a chain with the unique comparative advantages offered by diverse nations that make up the chain. To do this, an organisation must identify and control the factors that influence the competitive advantages and, later on, the competitiveness of the chain ion each of the three areas, namely, procurement, processing and distribution. Various types of stakeholders are working for their own interest in the procurement, processing and distribution system. Although government, political parties and bureaucrats are not directly involved in the SC process, they are very influential stakeholders in the whole business process especially from the international perspective. Therefore, political action and bureaucratic behaviour have been considered as external factors in the supply chain. Moreover, manufacturers who are the main stakeholders are dependent on fabric suppliers and buyer demand. According to the resource dependency theory (Pfeffer and Salancik 1978), dependence should be reduced to improve competitiveness: the role of external stakeholders is also very important in reducing dependency. Consequently, stakeholder analysis has become a conceptual device over the past couple of decades in the fields of business and society, business ethics and

management (Reed 2002). Therefore, a conceptual schematic model (See chapter 3, fig. no. 3.1) has been developed based on the stakeholder and resource dependency theories to increase competitiveness in the supply chain of the RMG industry of Bangladesh. These theories have been taken into account in this research by considering the external and internal environment aspects of the RMG supply chain in order to explain the proposed model.

There are very limited research works in this area. Many studies have been conducted on strategies in the post-MFA period and on performance improvement but very few studies have researched improving competitiveness and lead time management. Moreover, there are also no sufficient in-depth research works on SCM in the RMG sector of Bangladesh and on how lead time can be efficiently minimized by an effective supply chain to improve competitiveness. Some studies have been conducted on the influence of different country factors or non-business actors such as bureaucracy, political risk and country risk in the supply chain of international business (Hadjikhani and Hakansson 1996; Haque 2007; Kim 2006). However, no significant studies were found about the influence of these factors and how these factors can affect competitiveness and the RMG supply chain. Countries like Bangladesh must seek new avenues to retain their position in this dynamic sector. In this regard, analysing the supply chain is a new issue that has been considered in this research to improve competitiveness.

1.3 Problem Statement and Research Question

The pace of progress and economic growth of a country is largely dependent upon industrialization. But industrialization has remained stagnant in Bangladesh for at least for two decades due to the dearth of investible capital and low productivity. At that time, the RMG sector within the textile and clothing industry played a significant role in the industrialization process in Bangladesh. Moreover the MFA and global quotas on trade in textile and clothing under the WTO ended on 1 January 2005 (Nuruzzaman 2008). This created challenges for the RMG industry especially in the woven sector (Kabir 2007) when all member countries of the WTO including Bangladesh entered into the quota-free market. Therefore, it is a big challenge for the Bangladeshi RMG sector to retain its present market share and increase the business by improving competitiveness through analysing its existing supply chain (SC).

The logistics system is very important for an efficient supply chain and competitiveness. But infrastructural facilities like road, rail and port facilities are not sufficient and up to the mark (Ahmed 2009). As it is a buyer-driven market, manufacturers cannot bargain for a higher price and fail to pay standard wages to their employees. But buyers are always pressuring them to pay standard wages and to provide a good working environment (Ahmed 2009). With this existing problem, there are approximately 6,000 garment units in Bangladesh where garment products are manufactured by 2.5 million employees, most of whom are women. The export earnings have increased from a meagre US$68,000 in 1978 to US$12.34 billion in 2008-09 but the average growth rate has decreased from US$24.44 million in 2005-06 to US$15.34 million in 2008-09 (Joarder, Hossain, and Hakim 2010; World Trade Organisation 2012) and 1% in 2009-10 (Hossain, Sarker, and Afroze 2012).

The RMG business is a sub-sector of the textile and clothing industry. Buyers from the USA, European Union (EU) and Canada usually sourced garment products from Bangladesh under special privileges such as quotas and the Generalized System of Preference (GSP). To complete the whole process from receiving the order to exporting the final products takes 90-120 days. This time (the lead time) is twice as long as the time required for the same process in India and China. The lead time for similar products in Sri Lanka is approximately 19-45 days, for China 40-50 days and for India 50-70 days (Rahman and Anwar 2006; Kabir 2007). The long lead time has arisen due to the process of importing fabrics from foreign suppliers and it is a big problem in the upstream supply chain of the RMG industry. In the garment industry, ready-made garments are mostly fashion items and their life cycle is very short. Therefore, the minimization of lead time is a vital point in this business (Haider 2007).

The supply process of Readymade Garment Industry in Bangladesh is outlined in figure 1.1.

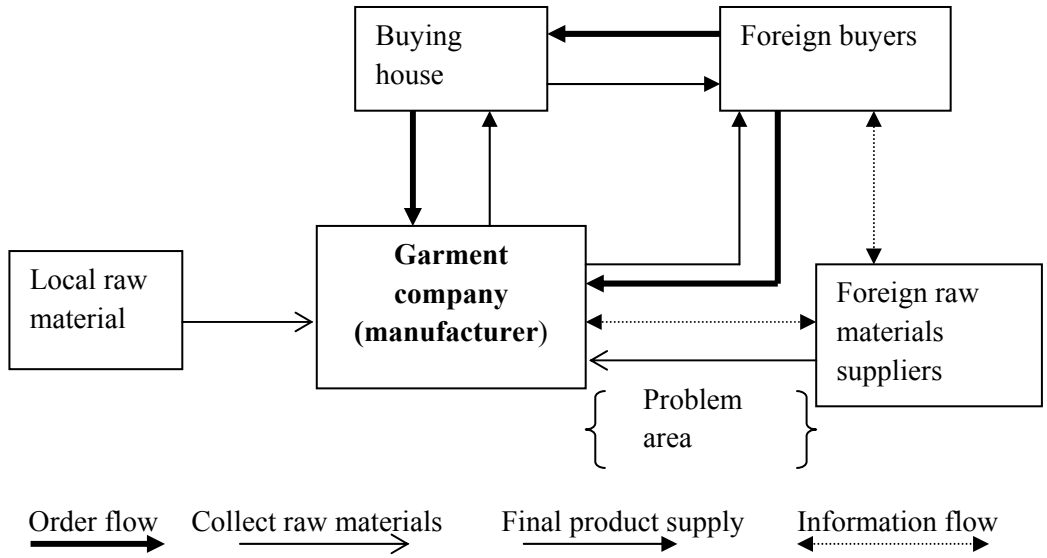

Figure 1.1: Supply process for RMG industry

Source: Nuruzzaman (2007)

According to the Bangladesh Apparel and Textile Exposition's (BATEXPO) 2012 report, the spot order (The order placed in the exposition) was reduced to 7.1% in 2012 compared to BATEXPO's 2011. In 2011 the order was 66.35 million US$. Therefore, the question is how this industry can grasp the opportunity by increasing its competitiveness. With this prospect, the garment sector of Bangladesh must make its products more competitive in terms of price, quality, a shorter lead time and by very efficiently meeting the deadline for supply in order to face the increasingly tougher competition (Rahman and Anwar 2007; Siddiqi 2007). Price and quality are manageable for Bangladeshi manufacturers but the problem is the long backward supply chain resulting in the long lead time.

The major challenges came in the garment sector (Kabir 2007; Nordås 2004; Nuruzzaman 2008) when all the member countries of the WTO including Bangladesh entered into the quota-free market. With the phasing out of MFA, developing countries like Bangladesh were no longer provided with any special trade concession. The countries of USA and Canada and EU member states could import any amount from any WTO member state (Nuruzzaman 2008). In addition to the rapid and massive economic integration in the western world, different types of trade bloc, region, rim, etc. have appeared as another concern for the RMG sector of Bangladesh (DCCI 2003; Rashid 2006) . In addition, China is now a member country of the WTO. The

restriction on China was lifted at the end of 2001 and the special restriction in the USA over China was also lifted in 2008. Vietnam also entered the WTO in 2007 (Saxena and Salze-Lozac'h 2010). However, this does not mean that there is no room for exporters like Bangladesh. What it certainly means is that Bangladesh will have to improve its competitiveness to remain in the heart of buyers. Therefore, the question is about competitiveness. The garment exporting countries like Bangladesh are at the crossroads and experiencing problems in the competitive business environment of the garment sector.

The structure of the Bangladeshi RMG industry is totally different and therefore the SC in this industry is quite unique. There have been many studies on the RMG industry, but these are very general in nature and mainly deal with its growth and development (Azad 2004; Debapriya and Rahman 2003; Quddus and Rashid. 1999; Rahman and Anwar 2006; Rashid 2006). Many studies have also been conducted on strategies in the post-MFA period (Ahmed 2004; D'Souza Undated; Nordås 2004; Kabir 2007; Habib 2009). Few studies have also been conducted specifically on the SCM in the clothing sector (Hunter and Valentino 1995; Christopher and Lee 2004; Nordås 2004; Knutsen 2004; Seuring, Goldbach, and Kopline 2004; Magder 2005; Lam and Postle 2006; Brito, Carbone, and Blanquart 2008). However, most of these studies have primarily dealt with the applications of ICT and development of relationships within the members of the SC.

The phasing out of the export-quota system from the beginning of 2005 raised the issue of the competitiveness of the Bangladesh RMG industry as a top priority issue (Haider 2007). Due to typical bureaucratic behaviour, political actions and country risk, the Bangladeshi RMG sector failed to reduce lead time and increase competitiveness (Absar 2003). Although studies have been conducted on the influence of different country factors or non-business actors such as bureaucracy, political risk and country risk in the supply chain of international business (Hadjikhani and Hakansson 1996; Haque 2007; Kim 2006), no significant study has explored the influence of these factors on the RMG supply chain (SC) and how these factors can affect the competitiveness of SC. As the RMG supply chain is international in nature, these country factors must be considered in developing an efficient SC. In this research, these issues will be considered to overcome the problem and make the RMG industry's SC more competitive in the global market.

This study has analysed a theoretical concept to empirically explore and test the relationships between political action, country risk, bureaucratic behaviours, demand-side and supply-side issues (drivers and barriers), and ultimately competitiveness in the context of the RMG industry and its supply chain in Bangladesh.

The focus on cheap labour to maintain competitiveness is likely to continue a 'race to the bottom' phenomenon which is not sustainable in the long term as this allows investors to switch from one location to another based on the availability of cheap labour (Adhikari and Y.Yamamoto 2005). Therefore, a country like Bangladesh must seek new avenues to retain its position in the garment sector. In this regard, addressing the issues of SC is a new way to improve the competitiveness of the RMG industry. In the textile and clothing industry, managing the SC and increasing competitiveness have been a major research issue in contemporary studies (Bruce, Daly, and Towers 2004; Kabir 2007; Nuruzzaman, Haque, and Rafiq 2010) . It is crucial for the RMG industry to identify the sector's different stakeholders and to have dialogue amongst them with the purpose of identifying the main issues that need to be addressed in order to improve the sector's competitiveness. Considering the above problems, this research therefore attempts to investigate the following primary research questions:

RQ1. How external elements like political action, bureaucratic behaviour and the risk of country factors or external stakeholders (political parties, government and bureaucrats) influence the competitiveness of the RMG industry of Bangladesh in terms of analysing the supply chain?

RQ2. How supply-side (suppliers) and demand-side (buyers) drivers (strengths) and barriers (weaknesses) or internal stakeholders (suppliers/manufacturers and buyers) influence the competitiveness of the RMG industry in terms of analysing the supply chain?

RQ3. What are the determinants for improving the competiveness of the RMG industry in Bangladesh?

1.4 Research Objectives

The main objective of this study is to construct a theoretical framework for examining the competitiveness of the RMG industry through examining the competitiveness of the RMG supply chain (SC) in Bangladesh. The specific objectives of the study are:

RO1. To analyse the current competitiveness of the RMG sector of Bangladesh

RO2. To investigate the influence of political action and bureaucratic behaviour on improving the competitiveness of the RMG industry

RO3. To study the impact of country risk on the competitiveness of the RMG industry

RO4. To investigate how supply-side (SS) drivers and barriers influence RMG competitiveness in Bangladesh

RO5. To investigate how demand-side (DS) drivers and barriers influence RMG competitiveness in Bangladesh

1.5 Definition of Terms

Buyers: Parties that purchase goods and services. In this study, buyers are the importers of the final garment products as per their specifications.

Competitiveness: Competitiveness is defined as the ability to sustain trade in the local and global environment. The European Management Forum (1984) defined competitiveness as "the immediate and future ability of, and opportunities for, entrepreneurs to design, produce and market goods worldwide whose price and non-price qualities form a more attractive package than those of foreign and domestic competitors" (Buckley, Pass, and Prescott 1988).

RMG industry is 100% export oriented industry (Nuruzzaman 2008) and competitiveness is basically reflected in exports (Min and Galle 1991a). However, recent literature on the post-MFA environment (Kelegama 2005; Tewari 2006) has argued that simply focusing on lower costs in the post-quota era will not be enough to ensure competitiveness in the garment and textiles industry. In today's world, SCM is a key strategic initiative for increasing organisational effectiveness and better realization of organisational goals such as enhancing competitiveness. They cite innovation and quality as important factors for firms wanting to retain a share of the global market: "… a narrow focus on relative prices, low wages and large scales – the standard attributes of a traditional growth strategy – obscures precisely the factors that are central to sustaining export competitiveness today … global competitiveness in the apparel industry today requires competencies that go well beyond traditional factors of relative price and low wages" (Tewari 2006; Saxena and Salze-Lozac'h 2010). Therefore considering stakeholders role in the supply chain is very important to increase competitiveness. In this study, competitiveness is increase the ability to

compete and retain market share with more attractive price (by reducing cost through efficient supply chain) and non-price qualities (increase efficiency and reduction of lead time) via improving RMG supply chain in the quota free environment.

Country factors or non-business actors (external stakeholders): Country factors are variables which basically encourage foreign investment in a specific country and influence the local and international business environment. In Hadjikhani et al.'s (1996) study, two main factors were considered, namely: bureaucratic behaviour and political action. Country risk is another factor which is the ultimate result of these first two factors which Hadjikhani et al. considered as country factors in their study. Political action refers to government and opposition parties' role. In the conceptual model, we did not consider political parties but we considered their actions which are called "political action" (Adhikari and Weeratunge 2006).

External and internal stakeholders: External stakeholders are parties who are not directly part of the RMG supply chain but have sufficient influence on its activities. Internal stakeholders are parties who are directly part of the RMG supply chain and are influenced by the external elements.

RMG: RMG means ready-made garments, that is, garments (apparel products) that are ready to sell and use. According to the Cambridge Dictionary, 'ready-made' means "bought or found in a finished form and available to use immediately" or, according to the AudioEnglish.net Dictionary, "a manufactured artefact (as a garment or piece of furniture) that is made in advance and available for purchase". 'Garment' means, according to the Oxford Dictionary, "an item of clothing".

Therefore, RMG means a finished clothing item ready to sell and use. The ready-made garment industry is the largest industry in Bangladesh. It is a sub-sector of the textile and clothing industry. This industry produces deals with factories producing woven, knit and sweater garments (Nuruzzaman 2001; Habib 2009).

A widely accepted definition of the ready-made garment industry is contained in the International Standard Industrial Classification of all economic activities adopted by the United Nations (UN) and the ILO which is followed by the Government of Bangladesh. This definition indicates that "those establishments which do not make

fabrics or knitted fabrics but only cut and make garments out of them, could be covered under the garment industry" (EU 2011).

Stakeholder: For the purpose of this study, stakeholders are "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman 1984). Clarkson (1995) defined stakeholders as persons or groups that have, or claim, ownership rights, or interests in a corporation and its activities, be they past, present, or future. Buyers (customers), suppliers (manufacturers), raw materials suppliers, logistics support providers, government, bureaucrats, political parties, etc. are the stakeholders in this study. There are many challenges in the South Asian region, some of which can be overcome only through concerted efforts by various stakeholders (Adhikari and Weeratunge 2006).

Suppliers: Parties that supply goods and services. In this study, suppliers are the manufacturers of the final garment products.

Supply chain management: Supply chain management spans all movement and storage of raw materials, work-in-process inventory and finished goods from point-of-origin to point-of-consumption. In the garment sector, the supply chain commences with the sourcing of raw materials, design and production to distribution and marketing which is organised as an integrated production network (Lee and Ng 1997; Stock and Boyer 2009; Nordås 2004). The supply chain in the RMG industry consists of an array of players (RMG manufacturers, fabrics and accessories suppliers, government agencies, buying offices and sourcing agents, forwarders and carriers, and buyers) performing different activities and adding value to consumers who purchase the product (Nuruzzaman 2008; Nuruzzaman, Haque, and Rafiq 2010).

1.6 Significance of the Research

Many countries from South Asia, South East Asia and Africa are involved in the garments business and earning large amounts foreign currency. The textile and garment sectors of these countries are now in fierce competition as they are all in a quota-free world. Countries are very anxious to retain their markets and to capture more market share in the quota-free world. There are very few countries like Bangladesh that have some special circumstances. Bangladesh is mostly dependent on imported fabrics but the RMG sector has surprisingly developed and contributes

about 75% to total foreign exchange earnings (Rashid 2006; Abdulla 2008; Kabir 2007; Siddiqi 2007). The trade of textiles and ready-made garments comprises 6% of the world's total exports and Bangladesh depends on this trade for 95% of its total exports (Kabir 2007)

After the phasing-out of the MFA in January 2005, this sector lost its previously guaranteed access to EU, Canadian and US markets. The restriction on China was lifted at the end of 2001 and the special restriction in the USA over China was also lifted in 2008. Vietnam entered as a WTO member country in 2007 and has become one of Bangladesh's leading competitors (Saxena and Salze-Lozac'h 2010). However, this does not mean that there is no room for smaller exporters like Bangladesh. The sector in Bangladesh is forced to compete with established suppliers like China, India and others who have sufficient backward linkages and shortened lead times. Therefore, it is a question of how Bangladesh's entire economy will be affected by the present quota-free world if the necessary actions are not taken. In the new business environment, the likelihood of success is very high for the RMG industry if it is able to develop an efficient supply chain. But this sector has been unable to discover a good solution through which they can progress. Overcoming the present situation by establishing sufficient backward linkage industries is very difficult for the Bangladeshi garment sector because this would require huge financial investment. To improve competitiveness, Bangladesh may need to develop new ideas in backward and forward SCM. With this research, it is hoped to discover how a country like Bangladesh can create a significant position in the world's total garment export trade by managing the supply chain through developing closer relationships and coordination among stakeholders and reducing lead time. The significance of the study in its contribution to theory and practice is discussed below:

1.6.1 Contribution to theory

This research will contribute to the understanding of both external and internal stakeholders about national and international perspectives in the textile and garment business. The study combines the insights of stakeholder theory and SCM in improving the effectiveness, dynamism and competitiveness of the RMG supply chain and thus achieving better garment industry performance through minimizing

lead time. Some research studies have been undertaken in apparel SCM to increase performance and reduce lead time using IT and focusing on integrated relationship management, collaborative relationships, etc. (Chandra 1997; Dossenbach 1999; Bowen 2000; Au and Ho 2002; Buxey 2005; Lambert and Pohlen 2001; Nuruzzaman 2007; Nuruzzaman, Haque, and Rafiq 2010; Pramatari 2007; Wong 1999; Zhao et al. 2008). This current research considers some new external variables which previous studies did not consider, such as, political action, bureaucratic behaviour and country risk to seeking to increase the performance or competitiveness of the RMG supply chain. Again, due to lack of resources, the suppliers of garment products are totally dependent on imported raw materials and buyer demand. To minimize the cost, buyers are also dependent on the Bangladeshi suppliers as they do not have sufficient labour. In investigating this situation, resource dependency theory has also been considered in this research. According to this theory, reducing the dependency through closer relationships among the stakeholders is very important in increasing competitiveness. The current research approach is therefore expected to make a unique theoretical contribution in the ready-made garment SC. Moreover, this research will also make a unique contribution in the academic literature by dealing with the RMG industry's SC in a developing country like Bangladesh.

1.6.2 Contribution to practice

It is expected that the outcomes of the study will make an important contribution in the supply chain of garment industries in Bangladesh as it draws attention to some uncovered issues which relate to the development of better customer-oriented SCM. The outcomes of the study will be useful for various stakeholders of the RMG sector in Bangladesh ranging from government to various private organisations. For the first time, stakeholders will be able to see what will make the industry more competitive and what needs to be done to achieve this result. Various policies can accordingly be developed and implemented to support the Bangladeshi RMG sector in competing in the world market.

1.7 Structure of the Thesis

This section presents the overall structure of this thesis which is organised and presented in nine chapters. These chapters are closely related and complementary to

each other. The chronological relationships of these chapters are illustrated through the diagram in figure 1.2. The brief outline of the chapters is as follows:

Chapter 1: Introduction

This chapter presents a discussion on the importance of the research and the gap in the existing literature. The discussion actually helps to draw some research questions and these are followed by the research objectives. Next, some definitions of terms are described. Chapter 1 then explains the focus of the research as well as its practical and theoretical significance and finally presents the overall organisation of this thesis.

Chapter 2: The RMG Industry and Bangladesh

This chapter discusses the historical development of the RMG industry in Bangladesh and its present situation. It also discusses the present competitiveness of the Bangladeshi RMG industry in the global clothing market.

Chapter 3: Literature Review

Chapter 3 presents an extensive literature review focusing on the RMG industry's SC and external and internal stakeholders. It reviews the literature on the SC and its management, external and internal factors and elements of the RMG industry's SC, core theories, and relevant studies related to the SC of the garment industry and improving competitiveness. Finally, based on the literature review, an initial research model to improve competitiveness is developed in this chapter.

Chapter 4: Research Methodology and Design

Chapter 4 describes the methodological foundation used by this research to explore the research questions and objectives. It focuses on determining the appropriate research approach to conduct this research and discusses the methodology adopted for this research. Firstly, the choice of research paradigm and mixed-method design is scrutinised and then the research process for the qualitative field study, pilot test and quantitative survey are discussed. In addition, the sample selection, data collection and data analysis process have also been provided in this chapter.

Chapter 5: Field Study Analysis and Development of a Comprehensive Research Model

Chapter 5 presents the process and outcomes of the qualitative field study. This chapter describes the process for the interviews conducted as part of the field study

and the analysis, through content analysis, of the qualitative data. The chapter presents a brief description of the demographics of the study sample and details the factors and variables identified during the interviews. Chapter 5 describes how the initial model was modified based upon the findings and the final development of a comprehensive research model on the basis of the literature review and field study results.

Chapter 6: Hypotheses and Questionnaire Development

Chapter 6 develops the hypotheses on the basis of the comprehensive research model proposed in chapter 5. It also focuses on the development of quantitative research instruments which resulted from the comprehensive research model. This chapter provides the details of the questionnaire used for the research survey.

Chapter 7: Survey and Quantitative Data Analysis

Chapter 7 presents the quantitative survey that was undertaken providing details of the methodology. The chapter then presents a descriptive analysis of the survey respondents, with this analysis generated by IBM SPSS 21 version in order to understand the demographics of the sample population. Following this, the empirical results from the survey are presented and analysed by the partial least squares (PLS)-based structural equation modelling (SEM) technique. Finally, confirmation of the research hypotheses is provided based on the results of the analysis.

Chapter 8: Discussion and Implications

Chapter 8 presents the interpretation and discussion of the results obtained from the survey in chapter 7. It discusses the major research questions and the hypotheses proposed in this study. More specifically, this chapter discusses the research findings, based on theoretical and practical perspectives.

Chapter 9: Conclusion and Future Directions

Chapter 9 presents the summary of the research and its theoretical and practical contributions. This chapter describes the limitations of the current research and this study's weaknesses and concludes with future research directions in the area of this study.

1.8 Summary

Competitiveness is the buzzword in the world market of the garment business after the abolition of the MFA. Organisations in the RMG industry are required to integrate and be well managed in order to create and improve their competitiveness while considering the internal resources and influence of external and internal stakeholders in the SC. This chapter has provided the background of the current research and has established the scope of the research. It briefly discussed the existing research in the RMG industry providing an overview of the existing research gap and outlining how this gap has been addressed by this research. Research questions were then developed and research objectives were defined based on the research questions. The chapter concluded by presenting a brief outline of the structure of this research

Structure	Description	Output
Chapter 1	i) The overview of the research ii) Establishes the research problem	Determines the research questions and objectives
Chapter 2	i) Historical development of RMG in Bangladesh ii) Discussion about competitiveness	Provides detail about the area of the research subject and rationale of the study
Chapter 3	i) The theoretical background ii) Discussion about the existing gap ii) Conceptual framework	Discusses the relevant literature and proposes initial research-models
Chapter 4	i) Details about the methodology and design of the research	Presents the methodology adopted for this research
Chapter 5	i) Details of the field study ii) Develops constructs and items	Proposes the comprehensive research model
Chapter 6	i) Details hypotheses as per comprehensive research model ii) Development of research instruments	Provides the hypotheses of the research model
Chapter 7	i) Details of the survey method ii) Analyses the survey data using partial least square (PLS) technique	Presents the data and data analysis of the survey
Chapter 8	Discussion of the findings	Provides the interpretations of the research findings
Chapter 9	Overview of the research and future directions	Summarises the thesis and proposes future works

Figure 1.2: Summary of the research structure

CHAPTER 2

The RMG Industry and Bangladesh[1]

2.1 Introduction

This chapter discusses the development of the RMG industry in Bangladesh. The level of competitiveness of this industry is also discussed with statistics provided of Bangladesh's relative position in the world market in the post-MFA period. This chapter also mentions the motivation for considering Bangladesh as a field of study.

2.2 Motivation for Choice of Bangladesh

Bangladesh is a promising developing nation in the global garments market. From a modest start in the 1970s, the Bangladeshi RMG industry grew considerably over the period of the MFA during the last 25 years. The number of garment factories increased from 50 in 1983 to around 4,000 in 2006. In 2008-09, the number of garment factories was approximately 6,000 although not all were operational. Over the years, RMG exports have increased dramatically from a meagre US$68,000 in 1978 to US$12.3 billion in 2008-09. In addition, 75-76% of Bangladesh's total export earnings came from RMG. According to BATEXPO, this figure was 78.6% in 2012 (Batexpo 2012). In the post-MFA period, the amount of average growth reduced to US$15.34 million in 2008-09, a figure which had been US$24.44 million in 2005-06. In terms of the structure of the textile and clothing industry, Bangladesh has a well-established supply chain in the knit segment and sources 80% of knit

[1]Part of this chapter has been presented at the following conferences;

Nuruzzaman, M. (2012), "The Competitiveness and Supply Chain Management of Ready-Made Garment (RMG) Industry in Developing Nations", *In proceedings of The 7th Biennial Conference of Hong Kong Economic Association,* December 13-14, Lingnan University, Hong Kong.

Nuruzzaman, M., Quaddus, M. and Jeeva, A. (2012), "An Investigation into the Factors Influencing Competitiveness of Ready-Made Garment (RMG) Supply Chain- The Experience from Bangladesh", *In proceedings of Annual Conference on Global Economics, Business and Finance (GEBF),* December 15-17, Hong Kong.

Nuruzzaman, M., Quaddus, M. and Jeeva, A. (2013), " Improving Competitiveness and the Role of Stakeholders in Ready-Made Garment(RMG) Supply Chain of Developing Nations: A Qualitative Approach to develop a comprehensive research model" *In proceedings of the American Canadian Conference for Academic Disciplines, International Journal of Arts and Sciences,* May 20-23, Ryerson University, Toronto, Canada.

Nuruzzaman, M.(2013), " The influence of Bureaucratic Behaviour to Improve the Competitiveness of RMG industry", *In proceedings of Emerging Research Initiatives and Development in Business, CGSB Research Forum,* 9-10 May, Curtin University, Perth, Western Australia

fabrics from domestic manufacturers and suppliers. The backward linkage industries are not as well developed in other segments. For example, the RMG industry is able to source only 15% of the required raw materials for the woven market segment and, therefore, the balance has to be imported from countries such as China, India, Pakistan, Hong Kong and Taiwan (Rahman 2005). Moreover, there have been many changes in the global apparel market. Vietnam and China have joined the WTO and entered the quota-free market. In addition, many developing nations from Asia and Africa have entered this sector as it is a labour-intensive industry.

At present, the Bangladeshi economy is highly dependent on the RMG sector which has emerged as a prime job-creating sector for the neglected masses of Bangladeshi society especially for women who are uneducated and unskilled. The RMG industry is a labour-intensive industry with approximately 3.6 to 4 million workers employed, 80% of whom are women (Razzaque and Eusuf 2008; Batexpo 2012). RMG factories and associated businesses (spinning, dyeing, finishing, accessories, etc.) are estimated to provide employment for a total of 20 million people (Batexpo 2012). Well-trained and skilled labourers are not required for this industry. Bangladesh has a huge number of unemployed labourers who are uneducated and unskilled but useful for the RMG industry. However, it would be massively destructive for the economy, if Bangladesh lost its competitiveness and market share. Moreover, the Bangladeshi RMG sector is under pressure from buyers particularly in terms of poor working conditions and associated treatment of employees in this sector. In addition, numerous campaigns about the human rights' abuses that have frequently resulted in accidents and deaths have been undertaken by international media and NGOs against the Bangladeshi RMG sector (Islam and McPhail 2011; Islam and Deegan 2008). These types of actions and incidents are actually negatively impacting on the RMG industry in terms of improving its competitiveness. Lastly, and as a result of direct representation by one of the researchers who is of Bangladeshi origin, the opportunity arose to access all levels of the information provided by BGMEA and all kinds of support from its member organisations for the purpose of this research. This type of access – which is actually difficult for such research in Bangladesh – was crucial to the research that we sought to undertake.

However, until now, there has been a relative lack of research studies that have investigated the competitiveness of the Bangladeshi RMG industry. Considering this phenomenon and the points raised above, Bangladesh was considered as the field of research study.

2.3 Historical Development of RMG Industry in Bangladesh

Bangladesh is an overpopulated developing country. As the statistics show, the total population is 160 million people (The world Fact Book 2011), 70% of whom depend on agriculture; however, this sector is saturated and a declining source of livelihood with natural disasters every year. After the independence of Bangladesh, jute and tea were the most export-oriented sectors. But with the constant threat of flooding, declining jute fibre prices and a significant decrease in world demand, the contribution of the jute sector to the country's economy has deteriorated (Rahman 2004). In these circumstances, there is a great need to develop other sectors in order to create employment opportunities for the surplus manpower. Generating employment opportunities may be possible through the promotion and development of labour-intensive industries. Therefore, attention has turned to the role of the manufacturing sector, especially in the garment industry.

Against the backdrop of overpopulation, underemployment and mismanagement in public sector enterprises resulting in financial burden for the national exchequer, the export-oriented garment sector emerged as the saviour sector assuring job opportunities for the unemployed. In the 1980s, this industry gained momentum and was developing rapidly. Considering the contribution made by the RMG industry, the Bangladeshi government also began to provide various incentives to the garment industry, such as the duty-free import of machinery, bonded warehouse facilities and cash incentives (Quddus and Rashid 2000; Siddiqi 2005). As a result of its rapid growth, this industry was brought under the MFA quota system in 1986. However, the quota system was said to have favoured Bangladeshi producers because it protected them from foreign competition and a more generous export quota had been given to Bangladesh than to India and Sri Lanka (Montfort and Yongzheng 2004; Saxena and Wiebe 2005; Siddiqi 2005). During this time, many textile and garment companies from South Korea and other newly industrialized countries (NIEs) in East

Asia followed Daewoo into locating operations in Bangladesh and provided training to Bangladeshi workers and managers. In addition, the lower labour costs were a major factor behind the development of this industry but they were not the only determinant of the development of the RMG industry in Bangladesh. For example, although the labour costs in Turkey are higher than in Bangladesh and many competitor countries, garment production has been growing there as rapidly as in Bangladesh (Mottaleb 2011).

However, at present, the RMG industry in Bangladesh is certainly one of the promising sectors as it has become the main export sector and a major source of foreign exchange since 1980. The industry employs about 3.6 million workers of whom 80% are women (Batexpo 2012) and now ranks among the largest garment exporters in the world. It accounts for 78.6% of Bangladesh's export earnings and 10% of GDP (Batexpo 2012). This sector provides ample job opportunities for females.

In 1994, the international community decided to gradually abolish the MFA. The phased abolition of the quota system began in 1995 and was completed in 2005. Because the elimination of the quota now allows global buyers to import as many garments as they like from their favourite suppliers, the phasing-out of the quota has increased competitive pressure on suppliers.

The global shift of production to countries which are the least developed and developing has favoured the growth of developing countries and also developed countries' pace of progress. The global economy is now dominated by the relocation of production where firms from developed countries shift their interests to developing countries. This relocation of production is most familiar in the clothing industry. The world textile and apparel industry has undergone several migrations of production since the 1950s and they all involve Asia. The first migration of garment production took place from North America and Western Europe to Japan in the 1950s and the early 1960s. Although the trade was ruled by the developed world, for a second time, garment production experienced a shift, this time from Japan to the Asian Tigers – South Korea, Taiwan, Hong Kong and Singapore in the 1970s as Japan turned its interest to more profitable products such as cars, stereos and computers (Rahman 2004; Saxena and Salze-Lozac'h 2010). But the trend towards

the relocation of production did not stabilise there. As the economies of the Asian Tigers developed, wage levels rose and also trade unions became active. The mid-1980s through to the 1990s saw a third migration of production, this time from the Asian Tigers to other developing countries – the Philippines, Malaysia, Thailand, Indonesia and especially China. The 1990s have been dominated by the final wave of exporters, which include Bangladesh, Sri Lanka, Pakistan and Vietnam (Hale 2000; Rahman 2004). In the last decade, due to the low technology requirements and high labour absorption potential, low-income and middle-income countries from South Asia and Latin America have come to the fore as important locations for the production of garments and apparel that are sold throughout Europe and North America (Saxena and Salze-Lozac'h 2010).

In the early 1970s, RMG as a prospective industry was unknown both to economic planners and entrepreneurs. Entrepreneurs without help and guidelines from any government agency started and developed this sector exclusively with their own efforts. In the mid-1970s when some of the developing countries of South East Asia like Taiwan, Hong Kong and South Korea were shifting to the manufacture of "high tech" products, manufacturing of basic and labour-intensive products was being shifted to the lesser developed countries of the region. This was mainly due to the phenomenal increase in labour costs in the RMG sectors of Korea, Hong Kong and Taiwan. In the circumstances, many companies sought to identify a country within the region which had vast human resources and low per capita income. In this context, Bangladesh was targeted.

The growth of the garment industry in Bangladesh is comparatively recent. During the British period, no garment factories existed in this part of the Indo-Pak subcontinent. In 1960, the first garment factory in Bangladesh was established in Dhaka and by 1971 the number of factories had risen to five. But these garment factories were intended to serve the domestic market only. In 1976 and 1977, some entrepreneurs came forward to set up 100% export-oriented garment factories. Mr Reaz of Reaz Garments and Mr Ashraf of Ashraf Garments were the pioneers of this sector and started their garment businesses much earlier (Ahmed 1995). However, the revolution in this sector came in the 1980s.

In 1977, Reaz Garments was one of the first firms to engage in export. In 1978, a retired civil servant in collaboration with Daewoo, a Korean company, set up a garment factory named 'Desh'. At that time, trained workers and supervisors for the garment industry were not available in the country. Daewoo provided free training to 130 Desh supervisors and managers at its ultra-modern Pusan garment plant, the biggest in the world at the time (Quddus and Rashid 2000). The Daewoo-trained Desh employees were soon enticed away at significantly increased salary levels by new garment firms that were being set up in large numbers in Dhaka. Until the mid-1980s, the number of new entrants in this industry increased rapidly. During the first half of the 1990s, the garment industry growth picked up and expanded at the rate of 22% on average yearly (International business & Technical Consultants Inc. and Uniconsult Imternatinal Limited 2000**)**. Since then, the Bangladeshi garment sector has been playing a dominant role to shape Bangladesh's economy and export trade. After the liberation of Bangladesh, when the country's traditional export items could not yield expected results, the government and a selection of entrepreneurs who were young, educated and dynamic in the late 1970s began to emphasize the development of non-traditional items of export. Starting from the late 1970s, the garment sector of Bangladesh had come into prominence in the mid-1980s. By 1983, RMG had emerged as the most promising non-traditional export- oriented sector in the socio-economic context of the country (Nuruzzaman 2001, 2007; Rahman 2004).

It was revealed in previous research studies that despite the presence of so many internal constraints like the lack of backward linkage industries, lack of raw materials, infrastructure problems, poor port facilities, custom delays, financial sector problems, political instability and lack of government support (World Bank 2005; Nuruzzaman 2007) this sector developed surprisingly from 1985. This was due to some specific external factors such as the quota facility under MFA, Generalized System of Preference (GSP) facilities, duty-free access and an integrated framework for technical assistance for least developed countries (LDCs). In addition, the role of young entrepreneurs in the private sector, very cheap labour and government support through the Export Promotion Bureau (EPB) helped this sector to achieve rapid growth. In 1981, there were only 21 RMG units in the country but the number of RMG units had increased to 5,400 (see figure 2.1) in 2012

(Batexpo 2012)**.** At present, RMG is the leading industrial sub-sector in Bangladesh. This sector is playing a vital role in foreign currency earnings and in solving the unemployment problem. The RMG sector today contributes about 78.6% of Bangladesh's total foreign exchange earnings and is absorbing 80% of the total manufacturing sector labour force (Batexpo 2012).

Earning only US$31.57 million in 1983, the Bangladeshi garment sector by 2010 was earning in excess of US$15 billion in foreign exchange and had become one of the top global exporters. In 2008-09, Bangladesh was ranked as the fourth largest clothing exporting country in the world. Enjoying the status of third largest garment exporter to the EU and fourth largest exporter to the USA, Bangladesh now exports 65 categories of ready-made garments to as many as 80 countries worldwide with the EU as the major importer, followed by the USA which is the largest single importing country (Berg et al. 2011). Currently the industry is worth of USD 21.5 billion in FY2012-2013. Bangladesh is now the second largest apparel exporting country in the world occupying around 4.8% share of the world market (Batexpo 2013).

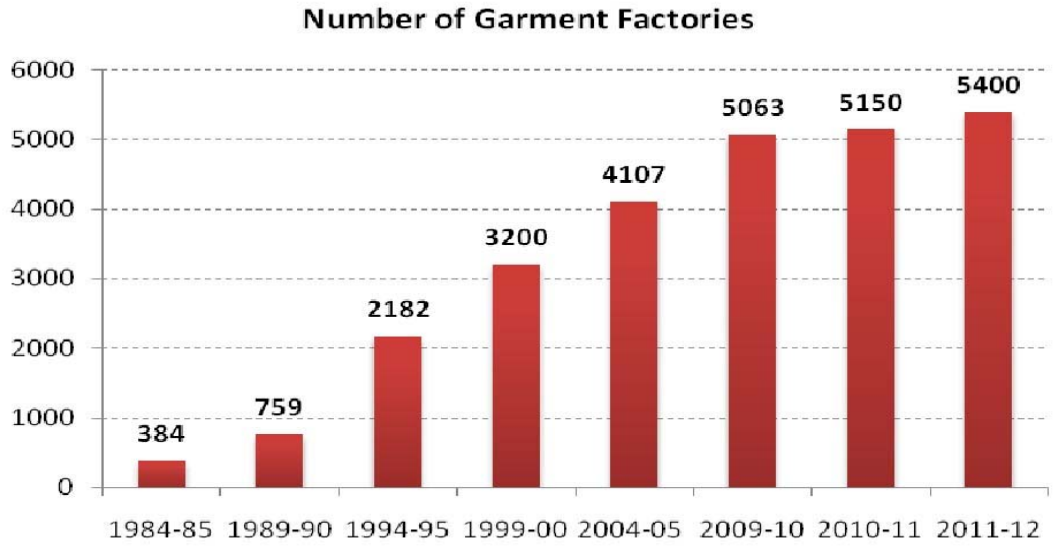

Figure 2.1: Growth statistics of Bangladeshi garment factories

The year 2005 was the most crucial year for the RMG sector of Bangladesh, as the quota facilities under the MFA were fully abolished on 31 December 2004. Starting from 1974, the Bangladeshi garment industry had been governed by the MFA until the end of the Uruguay round (31 December 1994). Until this time, Bangladesh had not faced any competition. The MFA was replaced by the Agreement on Textiles and

Clothing (ATC) for all 147 member countries under WTO rule beginning from 1 January 1995. The MFA was phased out through four stages over 10 years (1995–2005) in accordance with the ATC.

The Bangladeshi RMG industry started to face competition from the end of the phasing-out period. After the abolition of the MFA, Bangladesh so far has been predicted to be one of the major losers. The MFA was introduced in 1974 to serve as a short-term protection measure for the textile and clothing industries in developed countries against the competition and trade imbalances created by low-priced garments manufactured in developing countries. The MFA did not apply to trade between rich industrialized countries. After the introduction of the MFA, Bangladesh became the world's foremost exporter of garments. After the MFA was phased out, Bangladesh entered a new quota-free business environment. From that time, a new competitive environment came into being for the garment sector of Bangladesh. Cambodia, Nepal, Haiti, Laos, Lesotho, Madagascar, Myanmar, many Sub-Saharan African and other Asian countries emerged as major exporters of manufactured garments (Fiaz 2006).

However, to survive in the global garment business, Bangladesh must immediately implement pragmatic policies enabling her to compete more efficiently in the changing business environment. Bangladesh must focus on strategies for strengthening the competitiveness of the RMG industry to minimize vulnerability and maximize market share. The best solution is through improving the domestic and regional supply chain (SC) (Sattar 2005). Montfort and Yongzheng (2004) also mentioned the SC in terms of improving competitiveness.

2.4 The RMG Industry and its Supply Chain

Managing the SC is vital for the global apparel business and increased exports. The ultimate objective is to deliver products to the market with variety, responsiveness, timeliness and efficiency in a competitive manner. The strategic requirements of global business determine the extent, characteristics and strategic direction of the SC. However, some businesses are only involved with international operations to secure a supply of materials and components but their marketing is domestic. Other businesses manufacture and export from a home base and procure materials overseas. In Bangladesh, the RMG business resembles this second type of business in the global garment market. Global corporations take advantage of low-cost

production and coordinate product movement between stages of production and distribution to multiple markets by an effective SC thus dominating many product markets around the world.

Generally SCM is extremely complex. In the Bangladeshi RMG sector, SCM is more complex due to the scarcity of raw materials in the local market. Various general barriers exist in the SC process. The role of government, political pressure, tariffs and non-tariff issues, exchange rates, differences in product requirements, consumer tastes, business practices and many other things are involved in the SC. Manufacturers, suppliers, and buyers at all stages of the SC in the RMG sector are decentralized. Different stages of the SC have conflicting goals and objectives. Through careful use of the available information and integration of the SC, the cost and time of conflicting goals and objectives can be reduced. Therefore, an integrated and very efficient SC is needed in the Bangladeshi RMG sector to reduce cost and lead time.

SCM evolved quickly in the 1990s with the advent of rapid response initiatives in textile and grocery industries, and was refined by large retailer, Walmart, which used point-of-sale data to enable continuous replenishment. Supply chain (SC) is a term "now commonly used internationally – to encompass every effort involved in producing and delivering a final product or service, from the supplier's supplier to the customer's customer" (Feller et al., 2006). The definition of SCM is deceptively simple; Ellram (1991, p. 13) described it as the integration of the planning and control of materials and product flow from suppliers to customers, that is, the ultimate consumers. It is a network of firms, suppliers, processors, service organisations and intermediaries coordinated as a single entity to deliver finished products to the final user. A supply chain (SC) for the textile and clothing industry is shown in figure 2.2. The term "supply chain" encompasses all activities associated with the flow and transformation of goods from the raw materials stage through to the end-user, as well as the associated information flows. In the clothing sector, the SC from the sourcing of raw materials via design and production to distribution and marketing is organised as an integrated production and supply network. As shown in the figure, the direction of the arrows indicates a demand-pull-driven system.

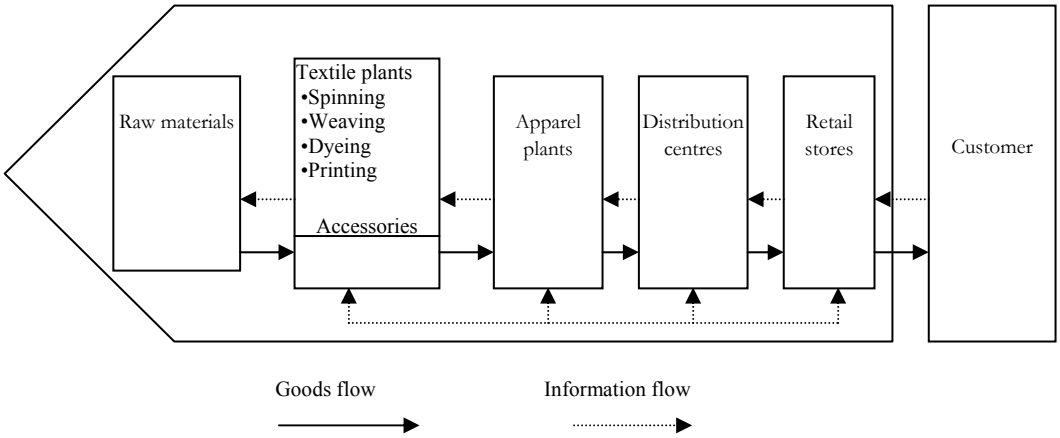

Figure 2.2: Clothing sector supply chain
Source: Nordas (2004)

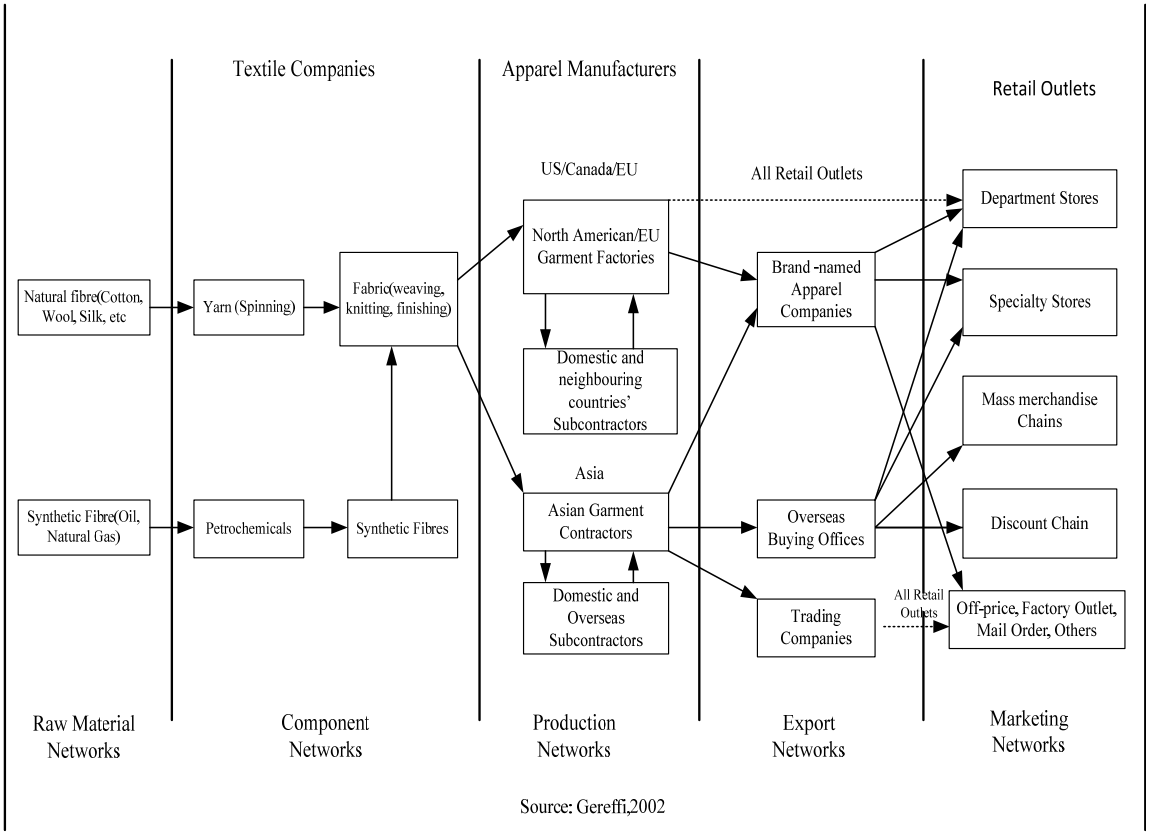

Fig 2.3: Apparel Commodity Chain

The information flow starts with the customer where the basis of what is being produced and when is formed. It is also worth noticing that information flows directly from retailers to the textile plants in many cases. However, to coordinate and make market demands and customer orders visible once again throughout the chain is the task of SCM (Schary, 2000). According to Gereffi (2002), the apparel commodity chain is organised by around five main segments (figure 2.3): the raw

material supply network, component networks under textile companies, production networks under garments or apparel manufacturers, export networks and marketing networks. But the RMG industry considers only three networks in its SC. The RMG industry's SC is shown in figure 2.4.

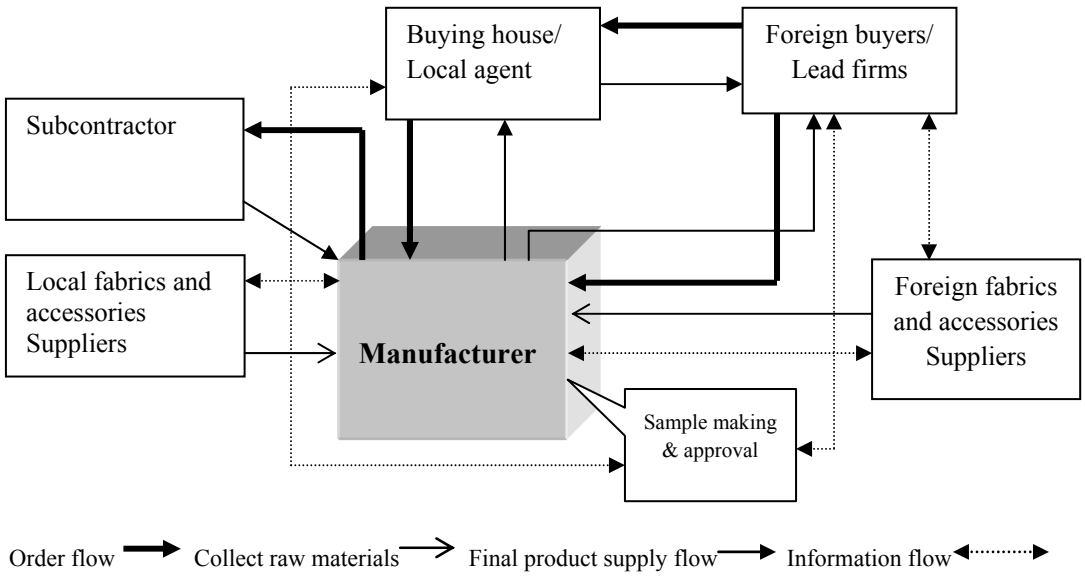

Figure 2.4: RMG supply chain
Source: Nuruzzaman (2007)

Manufacturers collect raw materials after having received the final order from buyers or from their agent. They purchase fabrics from the local textile companies (local fabrics suppliers) and foreign textile companies (foreign fabrics suppliers). Then they cut, make and trim the garment as per order. Finally, they take the necessary steps to export these garment products via the buying house/local agent or through the shipping company. So, basically the RMG industry's SC consists of the components network, production network and export network. However, the detailed RMG industry's SC is shown in figure 2.5.

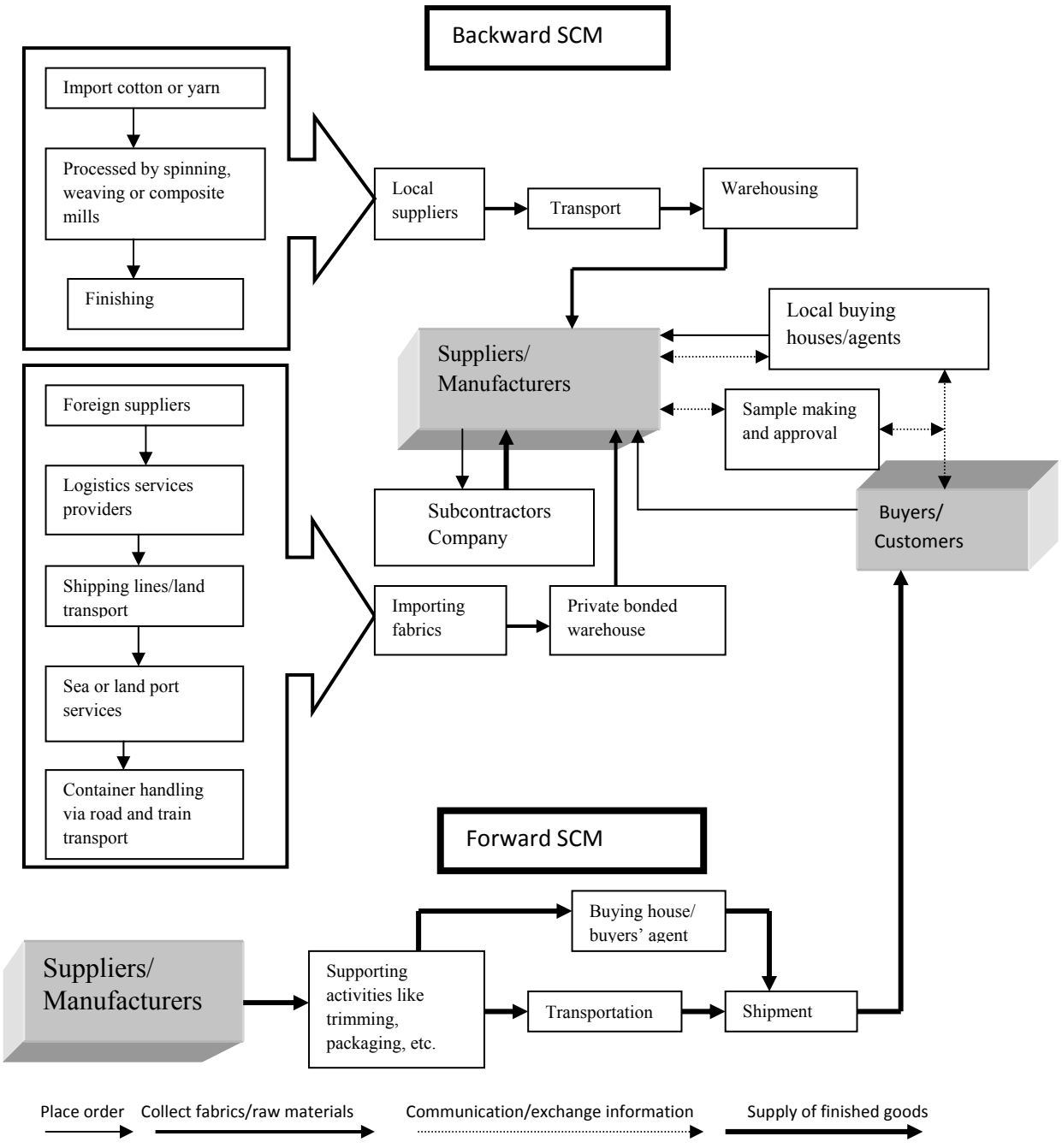

Figure 2.5: Detailed RMG backward (upstream) and forward (downstream) supply chain
Source: Nuruzzaman (2010)

2.5 Present Bangladeshi Supply Chain Scenario to Achieve Competitiveness

Now, more than ever, companies are trying to gain a competitive edge and improve profitability through cutting cost, increasing quality, and improving productivity and delivery. Companies are concentrating on improving delivery through cutting lead time and managing the SC to gain competitive advantage. Although Bangladesh has some promising advantages in certain dimensions, a hurdle like the infrastructure (transport and SC) is the single largest issue hampering Bangladesh's RMG industry (Berg et al. 2011). Therefore, the SC and its management are also very important in the RMG industry and all stakeholders should be very careful about the SCM of RMG industry in order to improve competitiveness.

Supply chain management (SCM) means managing the supply of inbound and outbound goods and services in the most cost-effective and time-sensitive way. This can be done by designing a strategic route plan for the quickest possible pick-up and delivery regimen, from the appropriate suppliers, for all points throughout the assembly line, in order to achieve cost- and time-related efficiency levels. Logistics are generally used to put the SCM strategy in place physically. But in Bangladesh most companies have no logistics department to execute the SCM plans (Khandker 2007). Moreover, the congested roads, limited inland transport alternatives and the lack of a deep-sea port facility have increased the inefficiencies which sustain a longer lead time in the garments sector (Berg et al. 2011). With the aim being to achieve a shorter lead time, reliable and fast transport in the SC is extremely important.

Logistics uses various infrastructure and machinery to bring about the execution of the SCM strategy. Such a SCM and logistics mechanism can be relevant in the macro sense as well, encompassing the economic activity of the whole country. Therefore, roads, railways, waterways, seaport and airport customs facilities, and regulations of a country need to be seamless and free of corruption. All of the above fall in the category of logistical infrastructure and are vital for the economic viability of a country. But in Bangladesh, connectivity and coordination in the logistics system are not good. Logistical infrastructure has been discussed indirectly at length in the media in Bangladesh whenever we have seen news related to port facilities but the significance of SCM and the fact that modern logistical infrastructure is a

national priority has not gained any ground in Bangladesh (Khandker 2007). The SC of the RMG industry is highly dependent on the Dhaka–Chittagong highway and Chittagong port as the only main transport routes but issues such as: i) highway congestion increases transport time by up to 20 hours; ii) lead time is increased by about 10 days due to the lack of a deep-sea port; iii) poor productivity occurs at Chittagong port due to inefficient processes; and iv) the Dhaka–Chittagong train connection's limited capacity all limit the efficiency of the RMG industry's SC (Berg et al. 2011).

A strategic plan for the development of logistical infrastructure could be a unique opportunity for Bangladesh to improve its functional infrastructure but much effort is needed to improve roads, railway lines, ports, airports, etc. Not only does the government need to offer an alternative port to ease congestion in the Chittagong port, internal container depot (ICD) facilities need to be increased so that goods can be unpacked and delivered to destinations in and around Dhaka if needed. Moreover, more off-dock facilities in Chittagong port to facilitate quick movement of containers within the port, and computerisation of customs to shorten customs formalities and make them more transparent are also needed for a better and efficient SC. However, SCM and logistics would have to be accepted as integral to the strategic economic planning done by an economic think-tank in Bangladesh.

2.6 Present Situation and Competitiveness

In January 2005, the Bangladeshi RMG sector entered the post-MFA period although the four stages of the phasing-out process had started from 1995. The completion of the phasing out of the export quota system at the beginning of 2005 raised the issue of the competitiveness of Bangladesh's RMG industry as a top priority topic. Under the quota system, countries like Bangladesh did not even feel the need to develop other industries (like cotton, textiles, etc.) because it was more lucrative to use imported textiles to fulfil the garment product quota (Saxena and Salze-Lozac'h 2010). Therefore, the present situation of the Bangladeshi RMG industry is at the crossroads and facing fierce competition from across the world.

Bangladesh is still dependent on imported inputs. Due to the lack of backward linkage industries, manufacturers are dependent on imported raw material. This actually makes the SC more complex for Bangladeshi manufacturers (Adhikari

2007a; Nuruzzaman, Haque, and Rafiq 2010). Labour productivity in Bangladesh is less than half that of India and Sri Lanka: the average capital intensity per worker in the garment factories of Bangladesh is US$1500 while that of China is US$4000 (Kabir 2007). The World Bank has also identified three main sources of comparative disadvantages for Bangladesh's export industries: infrastructure, corruption and the high cost of finance. Electricity supply, telecommunications and the port facilities of Bangladesh are inefficient which reduces the competitiveness of Bangladeshi exporters. Due to the lack of electricity supply, most factories maintain their own generator which is relatively costly (2.5 times the cost of accessing power from the grid, as noted by the World Bank, 2005). The container terminal at the Chittagong port can handle merely 100–105 lifts per berth per day, which is far below the productivity standard of 230 lifts per day.

Foreign direct investment (FDI) in the apparel sector is highly restricted in Bangladesh. Although this protects local entrepreneurs, the industry suffers in terms of the restricted flow of modern technology and skills. The real interest rate in Bangladesh is twice that of the interest rate prevailing in China and also higher than that in India. In addition to these factors, lead time is two or three times higher than in China, India, Pakistan, Sri Lanka and other competitor countries (Kabir 2007). Due to the lack of relationships between stakeholders, the government has failed to take the necessary steps to reduce the lead time. For example, it can be mentioned that the BGMEA suggested that the government establish a central bonded warehouse to reduce lead time but the BTMA opposed this and the government has not yet taken action to establish a central bonded warehouse. In addition, due to the lack of significant contribution by the government in many areas such as infrastructure, logistics, port management, skill development and training facilities, this sector cannot make its SC efficient in order to reduce lead time (Nuruzzaman 2007; Razzaque and Eusuf 2008).

The government and bureaucrats as important stakeholders do not have a good monitoring system for this business even in the unsafe working environment of the country's thriving garment sector. Therefore, many incidents occur every year creating a rising death toll due to building collapses and devastating fires. Some retail buyers have withdrawn their business to protest about these types of incidents.

Walt Disney withdrew its US$400 million business due to the recent building collapse in Savar, Dhaka, Bangladesh (Fox 2013). In addition, in the last four months, business valued at US$500 million has been transferred to neighbouring countries due to political unrest and its effect on the SC (The Daily Manab Zamin 2013). From this evidence, it is clear that the competitiveness of Bangladesh's RMG industry is not up to the mark. The garment industry employees have frequently created situations of unrest in their claims for a good wage structure. But the government, political parties and bureaucrats have not taken appropriate action to solve this problem. It has now become a permanent problem of the garment industry which has made the SC inefficient (Razzaque and Eusuf 2008; Saxena and Salze-Lozac'h 2010).

Competitiveness is the capability of producing and delivering customized products and services fast and efficiently all over the world (Buckley, Pass, and Prescott 1988). Many companies are implementing SCM in an effort to increase competitiveness, profit and customer satisfaction (Nordås 2004). Activities within the SC are very important as they transform various resources, raw materials and components into a finished product that is delivered to the customer. Therefore, managing the SC is important in improving competitiveness and increasing exports in the RMG sector.

However, due to the above situations and the abolition of the quota facility, the issue of competitiveness needs to be addressed, with special attention given to the long-term sustainability of the industry. In this regard, the government, political parties and bureaucrats should act positively to improve the above areas of business processes. Some other researchers have considered product quality, innovativeness, distribution networks, transaction costs, institutional factors relating to the bureaucracy of export procedures and other non-price factors as factors for measuring competitiveness (Abdel -Latif 1993; Chen, Xu, and Duan 1999). But to improve these factors, external stakeholders such as the government, political parties and bureaucrats need to play a considerable role. As shown in figure 2.6, external stakeholders can influence internal stakeholders and the RMG industry's SC in various ways to improve the latter's efficiency and the competitiveness of the industry.

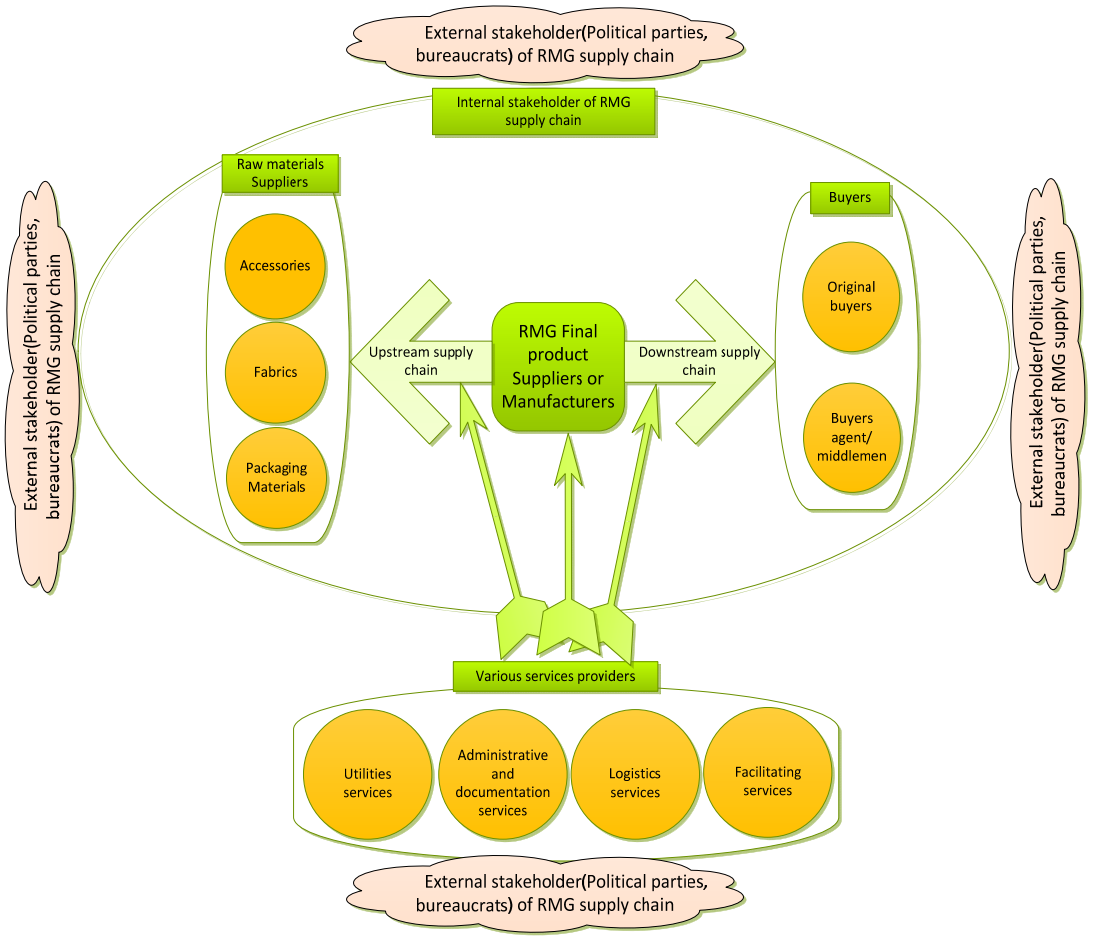

Figure 2.6: Influence of external stakeholders

Bangladesh's RMG exports have grown rapidly over the past 25 years. The value of exports in US dollars has increased more than sixfold, or about 16% per year, during the period 1990-2002 which is considerably faster than the growth of other merchandise exports (Montfort and Yongzheng 2004). However, after the decision was made to abolish the MFA, Bangladesh's exports of garments to the US market reduced from US$1956 million to US$1629 million between financial years 2002 and 2004. China's share of the US import quota for derestricted items has increased from 9% to 65% as of March 2005. The corresponding share for Bangladesh has reduced from 7% to 2% (Rahman and Raihan 2003). However, some evidence was seen of a slow decline in imports from countries like Bangladesh in 2007 and 2008 following the economic slowdown and recession in the major markets of the USA and EU (Saxena and Salze-Lozac'h 2010).

Uddin (2006) mentioned in his research work that the key factors for improving the competitiveness of the Bangladeshi RMG industry were infrastructure (electricity, gas, Chittagong port, all modes of transport but especially road, and telecommunications); compliance issues (good working conditions, fire and safety issues, good wage structure, human rights); IT (e-communication, software for machinery and daily use, databases); and capacity building (education, training, etc.). In the above section, these issues have been discussed and it has been found that Bangladesh is lagging behind in these key factors. Due to their lack, the SC and the competitiveness of the RMG industry cannot achieve the level of expectation required.

Saxena and Salze-Lozac'h (2010) has mentioned that the dependency on imported raw materials and the lack of backward linkage industries are the main barriers to improving competitiveness. Due to the lack of raw materials like cotton, it is very difficult to develop the textile sector. Bangladesh can only supply about 13% of the country's total demand for raw cotton, with imports needing to come from competitor countries, including India, Pakistan and China. The BTMA's 1994-95 Annual Report strongly suggested that Bangladesh should expand its cotton-growing area and use an improved variety of seed. This was considered essential to the competitiveness of the textile sector that needed to achieve 50% productive capacity within five years. However, this goal posed a 'very real problem' due to a shortage of land in the country for such cultivation, especially when the country needed this land to maintain self-sufficiency in food production (Rock 2001).

Nonetheless, for the export-oriented garments sector, an increase in the domestic output of fabric – supported by dyeing and finishing facilities – is the way in which to address this urgent problem. With local textile mills only supplying approximately less than 15% of the woven fabric and 60% of the knit fabric required for the industry (World Bank 2005), the Bangladesh Garments Manufacturers and Exporters Association(BGMEA) has been lobbying the government to prioritize the textile sector as a major investment opportunity for both local and foreign capital. After being identified as the 'thrust' sector for investment, the textile sector in 1995 saw 10 composite textile mills in the process of being established by local capital which, when in operation, would have the productive capacity to increase the supply of fabrics to about 230 million yards. According to the BTMA's Annual Report of

2004, domestic production of woven and knitting fabric was increased to 1430 and 990 metres respectively in 2003-04. This amount was very low compared to the required demand. Due to the lack of sufficient textile mills to date, this sector is facing the problem of losing its competitiveness due to longer lead time. In summary, unless Bangladesh can produce the raw materials required for the garment export industry, the sector will be unable to compete in this quota-free environment and will lose competitiveness (World Bank 2005).

The major recipients of Bangladeshi garments are the USA, Canada and EU countries. Creating new markets will require garment manufacturers to pursue an aggressive and penetrating marketing strategy rather than being reactive to demand from buying agents. As a result, and in concert with the need for further development of backward linkages, increased government support will be required for the garment export sector to overcome its overall lack of diversity. However, from tables 2.1, 2.2, 2.3 and 2.4, the comparative situation and the competitiveness of the Bangladeshi RMG industry in the post-MFA period can be easily identified. In 2004, the market share of Bangladeshi RMG in USA was US$3.05 billion but in 2008 it had increased to only US$4.81 billion. In the same time frame, the market share of its competitors (China, Vietnam, India and Indonesia) was higher than that of Bangladesh (see table 2.1). In the EU market, Bangladesh's market share was 4.1 billion Euros but in 2008 it had increased to only 4.2 billion Euros whereas the market share of its competitors (China, India and Vietnam) within the same period had increased remarkably (see table 2.3). The average growth rate of the Bangladeshi RMG industry decreased dramatically in 2010 (see tables 2.2 and 2.4). In 2005-06, the growth rate was US$23.11% million but in 2009-10 it had reduced to US$1.20% million.

Table 2.1: USA apparel imports (in USD billions)

Country	2000		2004		2005		2008		Sep, 09	
	Value	Share	Value	Share	Value	Share	Value	Share	Value	Share
China	4.50	7.86	8.93	13.78	15.14	22.04	22.92	32.03	17.23	36.36
Vietnam	0.05	0.08	2.56	3.96	2.72	3.97	5.22	7.30	3.78	7.98
Indonesia	2.05	3.59	2.40	3.71	2.88	4.18	4.03	5.63	2.97	6.26
Bangladesh	2.12	3.70	1.98	3.05	2.37	3.45	3.44	4.81	2.66	5.61
Mexico	8.41	14.70	6.68	10.32	6.08	8.85	4.01	5.61	2.53	5.34
India	1.79	3.12	2.22	3.42	2.98	4.33	3.07	4.29	2.27	4.78
Pakistan	0.92	1.61	1.14	1.76	1.26	1.83	1.49	2.08	0.98	2.06
Sri Lanka	1.47	2.57	1.55	2.39	1.65	2.40	1.47	2.05	0.95	2.00

Source: Joarder et al. (2010)

Table 2.2: Export and market share statistics

Country	After MFA (05-08) US$b		Market share in USA (US$b)		EU market share (US$b)		Average growth rate (AGR) of Bangladesh RMG (US$m)			
	Growth	Change in Share	2005	2008	2005	2008	A. G. R.	2005-06	2008-09	2009-10
China	17%	9%	22.04	32.03	17.8	22.7		23.11%	15.38%	1.20%
Bangla-desh	17%	1%	3.45	4.81	3.7	4.2				
India	8%	0%	4.33	4.29	3.4	3.5				
Viet-nam	24%	1%	3.97	7.30	0.7	1.1				

Sources: Joarder et al. (2010); Export Promotion Bureau (EPB) Bangladesh, 2009

Table 2.3: EU-27 Apparel imports (values in Euros billions)

Country	2000		2004		2005		2008		Sep.09
	Value	Share	Value	Share	Value	Share	Value	Share	Value
EU27_Intra	41.2	50.8	44.7	49.8	27.6	48.2	51.6	46.2	27.6
China	7.8	9.6	11.5	12.8	14.7	17.8	25.3	22.7	14.7
Turkey	5.4	6.7	7.7	8.6	4.2	8.5	7.9	7.0	4.2
Bangladesh	2.6	3.2	3.7	4.1	3.2	3.7	4.7	4.2	3.2
India	2.0	2.5	2.5	2.8	2.7	3.4	3.9	3.5	2.7
Morocco	2.4	2.9	2.4	2.7	1.2	2.4	2.4	2.1	1.2
Vietnam	0.8	1.0	0.6	0.7	0.7	0.7	1.2	1.1	0.7
Sri Lanka	0.8	1.0	0.8	0.9	0.7	0.8	1.1	1.0	0.7
Pakistan	0.6	0.7	0.9	1.0	0.5	0.8	0.9	0.8	0.5
Hong Kong	3.1	3.9	2.0	2.2	0.3	1.8	0.9	0.8	0.3
Thailand	0.9	1.2	0.9	1.0	0.4	0.8	0.8	0.7	0.4

Source: Joarder et al. (2010)

Table 2.4: Increasing rate of RMG export earnings

Fiscal Year	Export earnings (US$m)	(+) Increase	Rate of Increase
2004-05	6417.67	+ 731.67	+12.86%
2005-06	7900.80	+1483.13	+23.11%
2006-07	9211.23	+1310.43	+16.58%
2007-08	10701.65	+1490.42	+16.18%
2008-09	12347.77	+1646.12	+15.38%
2009-10	12497.00	+149.23	+1.20%

Source: EPB Bangladesh, 2010

Moreover, the need to continue education and related training is a vital necessity to ensure a ready supply of skilled labour for the production and improvement of high quality garments especially as this is one of the prime determinants for attracting and maintaining export contracts. With the aim of having a supply of the required skilled manpower, BGMEA has established a fashion institute but has failed to meet the demand from manufacturers. The Bangladeshi RMG industry needs to establish more institutes with the help of the government to supply trained people to this

industry to improve its productivity and competitiveness. To boost the productivity and competitiveness of the garments export industry, educated and trained people are highly required but the ability to meet this requirement still lags behind (Saxena and Salze-Lozac'h 2010)

China is now a member country of the WTO. The restriction on China was lifted at the end of 2001 and the special restriction in the USA over China was also lifted in 2008. However, this and other changes do not mean that there is no room for smaller exporters like Bangladesh. What it certainly means is that Bangladesh will have to improve its competitiveness to remain in the heart of buyers. In terms of labour cost, Bangladesh is well positioned and in a comparatively favourable position to other Asian countries.

It is crucial for different stakeholders of the sector to have dialogue and hold discussions amongst themselves with the purpose of identifying the main issues that need to be addressed in order to improve the sector's competitiveness. Discussion should also cover a wide range of areas where improvements and reforms have to be made in order to make the garment industry more competitive. These areas include inadequate infrastructure, inefficient and corrupt facilities in port and custom procedures, insufficient business support, the low level of labour standards and compliance, and ineffective policy support. Political action of the government and bureaucrats' behaviour are very important to solve these problems. The three parties, employers, labour unions and the government, need to come together to discuss areas of collaboration through which to improve the competitiveness of the RMG sector. In the post-MFA period, the Asia Foundation has launched a regional project on building competitiveness and has recommended that key actors in the RMG sector be identified and discuss with different stakeholders to help build relationships with the three parties, namely, employers, employees and public authorities (Fiaz 2006).

However, buyers are primarily interested in three factors: price, lead time and quality. Other factors are also important such as design and product development capability, labour compliance standards, advanced production facilities and a long-term business relationship (Berg et al. 2011).

Rapidly changing buyer behaviour coupled with the demand for low-cost supplies with minimum lead time has meant that countries with vertically integrated production structures, critical mass production apparatus and low lead time are among the most-favoured suppliers. Only those countries with skilled workers, state-of-the-art machinery and equipment, the ability to source inputs at global prices at short notice, a good understanding and relationships among external and internal stakeholders of the SC and infrastructure that allows exporters to process orders at the lowest possible cost and time can take advantage and create competitiveness in the present situation of the RMG business. Considering the above-mentioned perspective, Bangladesh still lags behind the required level of competitiveness.

2.7 Summary

This chapter has introduced the subject of the current research and the rationale for conducting the research. It was found that the Bangladeshi RMG industry was significantly affected by the post-MFA period even though it was a significant contributor to the economy of Bangladesh. Therefore, studying stakeholders in the SC of the Bangladeshi RMG industry is a vital step in improving the industry's competitiveness.

CHAPTER 3

Literature Review[2]

3.1 Introduction

As discussed in chapter 1, improving the competitiveness of the ready-made garment (RMG) industry of Bangladesh is the main focus of this study. This chapter presents the literature review which investigates various themes in relation to current research. Moreover, the main objective of this study is to improve competitiveness by analysing the supply chain (SC) of the RMG industry. This research deals with the operational SC and aims to investigate the influence of elements under the external and internal stakeholders of the RMG industry's SC in seeking to improve competitiveness. An operational SC is a set of networked organisations (stakeholders) working together to source, produce and distribute products to customers (Lee 2002). Analysing the SC has become a major research issue in contemporary management literature.

The literature review chapter is divided into two parts. The first part considers the supply chain (SCM), supply chain management (SCM) and supply chain competitiveness (SCC). The SC and its various issues have been explored from

[2] Part of this chapter has been presented at the following conferences:

Chowdhury, M., Nuruzzaman, M., Dewan, M. and Quaddus, M. (2012)," An AHP Integrated QFD Appoach for Mitigating Upstream Supply Chain Barriers: A Study On Readymade-Made Garment(RMG) Industry Of Bangladesh", *In proceedings of 26th Annual Australian and New Zealand Academy of Management (ANZAM)Conference,* 5-7 December, Perth, Western Australia.

Nuruzzaman, M. (2012), "The Competitiveness and Supply Chain Management of Ready-Made Garment (RMG) Industry in Developing Nations", *In proceedings of The 7th Biennial Conference of Hong Kong Economic Association,* December 13-14, Lingnan University, Hong Kong.

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Chowdhury, M., Nuruzzaman, M., Dewan, M. and Quaddus, M. (2013)," Supply Chain Readiness, Response and Recovery for Supply Chain Resilience to Vulnerabilities: A Study on Ready-Made Garment Industry of Bangladesh" *In proceedings of the 3rd International Forum & Conference on Logistics and Supply Chain Management(LSCM),* June 27-29, Bali, Indonesia

various literatures. Many researchers have explained supply chain (SC) and supply chain management (SCM) in various ways, viz. definitions, dimensions, performance measurement, frameworks, applications, strategy and allied concepts, supported by a number of empirical studies. The second part explores the issues related to the SC and its competitiveness in the clothing sector, especially in the RMG industry, to reveal the research gap which was addressed in the current research.

Drawing on the conceptual base of stakeholder theory and resource dependence theory, this chapter provides a review of past studies to argue that the competitiveness of an industry depends on improving the SC efficiency through developing various measures. After having extensively analysed and discussed the existing literature, this chapter presents the research concept used in this study and then proposes the preliminary research model.

3.2 Supply Chain

The subject of 'supply chain (SC)' has been explored by numerous researchers and practitioners from various perspectives and applications. The term 'supply chain (SC)' has been defined in various ways according to the observation of various researchers and practitioners. The most common aspect of any SC, however, is the flow of products from its source (production plant, wholesaler, etc.) to its destination (customers, retail stores, etc.). Landeghem and Vanmaele (2002) identified three hierarchical levels of the SC: operational, tactical and strategic. The SC is actually a link among suppliers, manufacturers and the different stakeholders involved in a specific firm or industry.

The supply chain (SC) is a network of relationships within a firm and between interdependent organisations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing and related systems that facilitates the forward and reverse flow of materials, services, finances and information from the original producer to the final customer with the benefits of adding value, maximizing profitability through efficiencies, and achieving customer satisfaction (Stock and Boyer 2009). Christopher (1998) stated that the 'supply chain (SC)' was: "[t]he network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services delivered to the ultimate consumer". According to

Mentzer (2004), a 'supply chain (SC)' is a set of three or more entities (organisations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer. Sunhilde (2008) provided a very short and excellent definition of 'supply chain (SC)': "[a] supply chain is the system of organizations, people, technology, activities, information and resources involved in moving a product or service from supplier to customer".

From the above literature, it is clear that the supply chain (SC) is a connected chain of different types of stakeholders at the upstream and downstream levels who supply products or services from a manufacturer to the ultimate customer. In this study, the RMG industry's SC has been considered from the manufacturer to the customer (buyer). In the RMG industry, about 90% of woven fabrics and 60% of knit fabrics are imported to make garments for export (Siddiqi 2007; Abdulla 2008). This sector therefore needs to maintain a long backward and forward SC and it takes a long lead time to process an order (Knutsen 2004; Nuruzzaman, Haque, and Rafiq 2010) which creates problems in achieving competitiveness. However, by properly managing the SC, efficiency may be increased and competitiveness achieved.

3.3 Supply Chain Management

'Supply chain management (SCM)' is "the management of material, information and finance through a network of organizations (i.e. suppliers, manufacturers, logistics providers, wholesalers/distributors and retailers) that aims to produce and deliver products or services for the consumers. It includes the coordination and collaboration of processes and activities across different functions such as marketing, sales, production, product design, procurement, logistics, finance, and information technology within the network of organizations" (Blos et al. 2009). Supply chain management (SCM) has also been explored by various researchers. Supply chain (SC) activities are very important in delivering any kind of product or service. Supply chain (SC) activities actually transform various resources, raw materials and components into a finished product that is delivered to the end customer. Supply chain management (SCM) spans all movement and storage of raw materials, work-in-process inventory and finished goods from point-of-origin to point-of-consumption (Sunhilde 2008). It integrates supply and demand management within and across companies. Many companies are implementing SCM in an effort to

increase competitiveness, profit and customer satisfaction (Nordås 2004). Therefore, managing the SC is important for improving competitiveness.

Moreover, a number of studies have effectively used different aspects of SCM for improving management in various industries. Seuring, Goldbach, and Kopline (2004) illustrated increased cooperation through an integrated SC; Cavinato (1992) considered the inter-firm total cost concept and value-added management; Lummus and Vokurka (1999) has shown a collaborative relationship improving competitiveness; and Stadlter (2005) cited the task of integrating organisational units along a SC and coordinating materials, information and financial flows in order to fulfil customer demand. It is observed that all these studies have placed an emphasis on coordination and cooperation among organisations. But all these studies were in relation to internal stakeholders and did not mention external elements. Bhatnagar and Sohal (2005) explained that operational competitiveness was influenced by qualitative factors which actually support coordination, cooperation and relational activities. However, Gunasekaran, Pate, and Tirtiroglu (2001) emphasized improving performance at the strategic, tactical and operational levels. Selldin and Olhager (2007) described the relationships between product design and the SC process, with specific reference to the model by Fisher (1997). In this study, it was clear that alignment between the type of product and the type of SC was important. In other research studies, Bacallan (2000) and Rao and Holt (2005) have described and considered the green supply chain (SC).

Several studies have also been conducted on various aspects of SCM. Most of these studies are on comparative analysis, conceptual development, increased performance through development of relationships, coordination and integration among the partners in the SC, factors affecting the quality of the SC, time management, production process for an effective SC, etc. (Bertolini et al. 2007; Bozarth, Blackhurst, and Handfield 2007; Eng 2005; Giannakis and Croom 2004; Halldorsson 2007; Kwon and Suh 2004; Nonino and Panizzolo 2007; Paulraj and Chen 2007; Prasad and Sounderpandian 2003; Sengupta, Heiser, and Cook 2006; Sila, Ebrahimpour, and Christiane 2006; Selldin and Olhager 2007; Sunhilde 2008; Sobhan 2003; Wu et al. 2004). A few studies have been conducted specifically on SCM in the clothing sector (Hunter and Valentino 1995; Christopher, Lowson, and Peck 2004; Nordås 2004; Knutsen 2004; Seuring, Goldbach, and Kopline 2004;

Magder 2005; Lam and Postle 2006; Brito, Carbone, and Blanquart 2008). But most of these studies have primarily dealt with ICT applications and the development of relationships amongst the members of the SC. In these studies, country factors such as country risk (CR) and elements of external stakeholders were not considered. There is no right theory for managing the SC but Halldorsson (2007) considered different organisational theories and models to explain inter-organisational phenomena in order to develop the SCM paradigm as a scientific discipline. Kleindorfer and Saad (2005) mentioned in their research that there are two broad categories of risk affecting SCM. Firstly, risks arise from the problems of coordinating supply and demand. Secondly, risks arise from disruption to normal activities like strikes, labour unrest and economic disruption. From this research, the influence of external stakeholders in the SC becomes evident.

In the clothing or garment sector, the SC can be seen as starting from the sourcing of raw materials via design and production to distribution and marketing, all of which is organised in an integrated production network (Lee and Ng 1997; Stock and Boyer 2009; Nordås 2004).

Table 3.1: Literature about supply chain management

(Jones and Riley 1985)	The supply chain dealt with the total flow of materials from suppliers through to end-users.
(Johnson 1995)	Strategically managing the movement and storage of materials, parts, and finished goods inventory from suppliers through the firm and to the customer.
(Christopher 1998)	The management of upstream and downstream relationships with suppliers and customers.
(Giunipero et al. 2008)	This study covered a decade of academic research on supply chain management
(Gripsrud, Jahre, and Persson 2006)	This paper presented the distribution arrangements in a business to uncover how they are interrelated and to suggest extensions.
(Kleindorfer and Saad 2005)	This paper provided a conceptual framework that reflects the activities of risk assessment and risk mitigation in the supply chain.
(Wu, Blackhurst, and Chidambaram 2006)	This paper investigated the inbound supply chain risk and its management
(Prasad and Sounderpandian 2003)	In this paper, the researchers have shown how information systems (IS) help to coordinate global SCM networks.
(Wu et al. 2004)	This research focused on how to integrate the supply chain management business process.
(Seuring 2008)	Supply chain management is the integration of these activities through improved supply chain relationships
(Khandker 2007)	Supply chain management (SCM) means managing the supply of inbound and outbound goods and services in the most cost-effective and time-sensitive way. This can be done by designing a strategic route plan for the quickest possible pick-up and delivery regimen, from the appropriate suppliers, for all points throughout the assembly line, in order to achieve cost- and time-related efficiency levels.

The SC in a RMG business consists of an array of players (RMG manufacturers, fabrics and accessories suppliers, government agencies, buying offices and sourcing agents, forwarders and carriers, and buyers) performing different activities and adding value to consumers (Nuruzzaman 2008; Nuruzzaman, Haque, and Rafiq 2010). Table 3.1 shows many studies from the literature related to SCM. In these literatures, the scholars focused on the things that are covered by SCM, how SCM is defined, upstream downstream relationship, distribution arrangement, risk assessment and mitigation and integration of activities. However there is no clear indication of external stakeholder and competitiveness. In the next section, steps have been taken to discover more literature on SCM as it relates to the textile and clothing industry.

3.4 Textile and Garment Industry

Relatively speaking, there are some research works in the field of the textile and garment industry but very little substantial research has been done in this field. Most of the research works are from the perspective of Western culture and developed countries but the literature is scarce in relation to developing nations and especially about South East Asian nations. However, some related research works about the textile and garment industry were found and carefully reviewed in this study.

Islam and McPhail (2011) investigated the adoption of the ILO's human rights standards by major multinational garment retail companies that source products from developing countries like China, India and Bangladesh. In the study by Perry, Sohal, and Rumpf (1999) about the textile and garment industries, they investigated the adoption by developed nations of new technology in the garment industry. Another research study was undertaken to discover some new strategies to survive the pressures of globalization (Buxey 2005). The above research works were mostly on the general development of the garment industry. Toni and Meneghetti (2000) undertook research on the Benetton group (textile and garments companies) of Italy. The research investigated the production planning process for a network of firms in the textile-apparel industry. In their study, it was observed that compression of the production planning period was helpful for achieving significant improvement in the external time performance. Oxborrow (2000) studied the UK apparel (garments) supply chain investigating the changing practices in the UK apparel industry as

vertical integration has largely been abandoned. These two research works were actually related to the SC and discussed compression of time and vertical integration in SCM. Moreover, some research works have been undertaken by the WTO, USAID and other international organisations about the textile and garment sector of different countries. These papers have discussed several constraints, politics, lack of foreign direct investment, regional trade agreements, and processes and mechanisms in the textile and garment sector (D'Souza Undated; Knutsen 2004; Adhikari and Weeratunge 2007b; Meenu 2006; Tewari 2006). Other studies in the literature on the textile and garment industry are briefly summarized in table 3.2 below. In these studies, various constraints and challenges in the textile and garment industry of the South Asian region and South East Asian countries have been discussed. Some papers have discussed the mechanism of the garment industry and the global textile and clothing trade. The literature in the next section specifically focuses on the SC in the garment industry.

Table 3.2: Literature about textile and garment industry

(Adhikari and Weeratunge 2007b)	This paper argued that despite several constraints, the South Asian region has a potential to develop itself as a global T&C (textile and clothing) sector hub. This paper recommended three necessary steps to enhance competitiveness.
(Chandra 2005)	This study described the competitiveness and challenges of the Indian textile and garment industry.
(Jin 2004)	This study is a preliminary attempt to illustrate how apparel industries in Asian NICs (newly industrialized countries) can obtain competitive advantage in the global economy and to suggest their future direction and challenges. This study presented three critical factors for Asian NICs: global brand, global sourcing and agility.
(Knutsen 2004)	This paper explained the processes and mechanisms that led to difficulties in the garment industry in Vietnam and Sri Lanka. It also discussed in what respect this was as a result of contingencies and in what respect of impediments to the industrial development that is essential to buyer-driven networks.
(Adhikari and Weeratunge 2006)	This paper discussed the scenario emerging in the global textile and clothing trade and the position of the South Asian countries vis-à-vis other global players.
(Nordås 2004)	The writer discussed various issues of the textile and clothing sector in this discussion paper on the WTO. The researcher mainly focused on the impact of phasing out the ATC (Agreement on Textiles and Clothing). The paper's objective was to assess the likely impact of liberalization in the textile and clothing sector. Most of the analysis of the impact of the phasing out of the ATC concluded that China and India will come to dominate world trade in textiles and clothing.
(Chen and Hui-Tzu Shih 2004)	This study described the impact of WTO accession on the Chinese garment industry.
(Mayer 2005)	This paper presented the situation of the textile and clothing trade in a quota-free environment. It also discussed how the present situation will be helpful for China and other competitors in the clothing export market.

3.5 Supply Chain and its Management in the Textile and Garment (Clothing) Industry

Since the introduction of the term 'supply chain management (SCM)' in 1982 (Oliver and Webber 1992), it has received ever-growing interest both in the literature as well as from industrial practice. Many of the research studies in the literature on SCM in various industries have been summarised in table 3.3 below. These studies discussed SCM in the health care, IT, toy and construction industries, among many others. These studies have been mostly undertaken in the context of developed countries. Although the SC and its management are still neglected in the textile and garment industry, some research studies have been undertaken on SCM in the garment industry.

Table 3.3: SCM in various industries

(Allen, Wade, and Dickinson 2009)	Supply chain in health care industry
(Sahay, Jatinder N.D. Gupta, and Mohan 2006)	IT industry is studied to explore SCM
(Love, Irani, and Edwards 2004)	SCM in construction industry
(Koskinen and Hilmola 2008)	SCM in paper industry
(Danese, Romano, and Vinelli 2006)	SCM in pharmaceutical industry
(Wong, Arlbjorn, and Johansen 2005)	SCM in toy industry
(Bertolini et al. 2007)	SCM issues for footwear industry in Italy. ICT application to reduce lead time.
(Park and Hartley 2002); (Blos et al. 2009)	SCM in automotive industry

Most studies in textile sector have focused on integration and relationship management for building partnerships between different parties of the SC and synchronizing activities throughout the SC (Chandra 1997; Zhao et al. 2008). In the research work of Dossenbach (1999); Wong, Arlbjorn, and Johansen (2005); Bowen (2000); Rungtusanatham (2003)and Cao et al. (2008), coordination, collaborative relationships and partnerships are described as preferential situations and as beneficial to all parties involved in the SC. Some studies (Chandra and Sameer 2000; Au and Ho 2002; Buxey 2005; Lambert and Pohlen 2001; Nuruzzaman 2007; Nuruzzaman, Haque, and Rafiq 2010; Pramatari 2007) have recommended the adoption of various technological applications such as IT, ICT, e-commerce, EDI implementation to improve competitive advantage and performance through lead time reduction and SC collaboration. Other studies, for example, those by Mason - Jones and Towill (1999); Perry, Sohal, and Rumpf (1999); Chandra and Sameer (2000); and Bruce, Daly, and Towers (2004) have emphasized an information-enriched SC, for example, quick response (QR) and accurate response (AR) (Hunter and Valentino 1995) in the textile SC. Some studies have also recommended the JIT

delivery system, production planning period compression, and lean and agile approaches that effectively synchronize the manufacturing process in order to reduce cycle time and lead time (Mason - Jones and Towill 1999; Toni and Meneghetti 2000; Christopher and Lee 2004; Ferdousi and Ahmed 2009). Jin (2004) described in his research how the least developed countries (LDCs) obtained competitive advantage in the garment (apparel) industry using Vernon's (1966) PLC (product life cycle) theory and Frobel's (1980) NIDL (New International Division of Labor) theory. Jin also described how these countries increased their competitive advantages leveraging industry-specific and country-specific advantages.

The textile and garment industry has been neglected in terms of extensive SCM research. More recently, the industry has undergone a great deal of change, particularly with global sourcing and high levels of price and lead time competition (Bruce, Daly, and Towers 2004). The textile and garment industries have been facing three main challenges since the new millennium. The first challenge comprises consumers' rigorous demands and rational consumption. The second challenge is the dominant status of mega-retailers and mega-brands, and the third challenge is the influence of quota-free international trade. The third and final situation has actually pushed countries into fierce competition forcing them to think about survival in this present competitive environment of the clothing or garment business. Garment products are mostly fashionable. Due to the characteristics of fashionable products, rapid changes in the apparel or garment industry is normal and occurs faster than in any other businesses (Ning 2006). In these circumstances, in order for companies to survive in the competitive garment export business, SCM has become a crucial factor and much more attention has been given in this industry to making the SC more efficient and effective. There are several reasons for the increasing interest in the management of supply chains since the 1990s. Firstly, companies have been moving away from vertical integration and moving towards specialization; thus, they have the need to deal with, and rely on, more outside sources (Sunhilde 2008). In order to reduce production costs, most clothing firms and giant retailers emphasized outsourcing the production of their goods to low-cost countries and subcontractor companies are also outsourcing raw materials to specialized low-cost countries. Thus, the structure of garment (clothing) SCs has become even more complex. Careful management of the SC is evidently required in order to reduce lead times and achieve quick responsive actions to the changing business environment.

The textile SC is complex and relatively long, involving a number of cross-country enterprises (Jones 2002). Therefore, Lummus and Vokurka (1999) have given emphasis to the quick response (QR) system. Without this system, a long supply chain would result in undesirable losses of resources. A QR system actually enables the capability of all parties working together. Froza and Vinelli (1997) have underlined the importance of the QR strategy in the clothing industry. However, the support of information technologies is very important for this strategy (Perry, Sohal, and Rumpf 1999; Birtwistle, Siddiqui, and Fiorito 2003).

The above discussion reveals that researchers have studied SCM in the textile industry with varying purposes and from these varying purposes, one common objective has been to create competitive advantage through the utilization of SCM. A supplier selection criterion has possibly been the most researched topic in SCM and it has also been explored in the textile industry. However, improving competitiveness through the SC has not yet been explored. Other studies in the literature about SCM in the textile industry have been reviewed which are summarised in table 3.4.

Table 3.4: SCM in textile and garment industry

(Fernie and Azuma 2004)	Modern SCM is obstructed in the textile industry as it is time consuming and labour intensive. This study described how QR improves SC efficiency.
(Cao et al. 2008)	This study explored the coordination of SCM specifically in the textile and garment sector.
(Bruce, Daly, and Towers 2004); (Masson et al. 2007)	Discussed lean and agile SCM in the textile industry. As SCM is neglected in the textile industry, researchers discussed characteristics of the textile and clothing industry and identified the perspective of the lean and agile SC.
(Cetindamar, Çatay, and Basmaci 2005)	This study explored SC collaboration and its benefits in the Turkish textile SC.
(Teng and Jaramillo 2005)	An evaluation model was developed for textile manufacturers to select suppliers to maintain their competitiveness in the global textile business.
(Ho 2005a)	Investigated enhancing the understanding of collective competitive advantage through SCM.
(Nuruzzaman, Haque, and Rafiq 2010)	This paper described how to create competitive advantage through SCM.
(Lam and Postle 2006)	The concept of SCM in textiles revealed (exposed) that for fashion items, long lead time and short product cycle are some distinctive problems faced by this industry.
(Romano and Vinelli 2001)	Operational and strategic consequences due to quality management with the utilization of SCM in the textile industry.
(Kwok and Wu 2009)	RFID system was introduced to assist the coordination and integration of the SC function in the textile industry.
(Chen, Murray, and Jones 2007)	Identified some insights into clothing SCM on the issue of quality and communication management.

(Bozarth, Blackhurst, and Handfield 2007)	Described industry cluster theory within the context of SCM decisions for the textile industry.
(Forman and Jørgensen 2004)	Environmental SCM in the Danish textile industry.
(Kogg 2003)	Investigated Swedish SCs for textiles made from organically grown cotton in the context of environmental SCM.
(Cao et al. 2008)	This paper examined the implementation of coordination for the textile-apparel SC in some Hong Kong-based textile businesses. Three different types of coordination practice in three textile-apparel SC structures were examined.
(Chandra and Sameer 2000)	This paper described the application of a system analysis methodology to a garment SC for the US textile industry, utilizing principles of QR and AR strategies in synchronizing activities throughout the system.
(Au and Ho 2002)	This paper presented a B2B (business-to-business) electronic commerce model for enabling SCM in a clothing manufacturing company using the notion of harnessing information technologies(the web, email and EDI).
(Rajput and Bakar 2011)	This study investigated SCM literature and explored the categories of SCM literature in descending order from the most studied categories to the least studied categories.
(Magder 2005)	This paper investigated the global apparel and textile SC. It suggested that using an SC model with shortened lead time would have an impact on profit. This paper actually included the extent to which geography, trade preferences and local production factors might help Egypt's textile and apparel industry in favour of lean retailing.
(Nordås 2004)	This paper assessed the impact of liberalization and also focused on recent developments in SCM in the clothing industry.
(Ning 2006)	This paper was designed as an exploratory study to investigate SCM practice and the SC as competitive advantages in the textile and apparel industry.
(Ning 2006)	In this thesis, the author developed a model of an SC performance measure in the textile and apparel industry.
(Chandra and Sameer 2000)	A common problem of the SC is coordinating or synchronizing activities through the life cycle of products. In this research, the writer tried to deal with this problem in the US textile industry by achieving quick response (QR) (Perry et al., 1999) in the SC through accurate response (AR) (Hunter, 1990; Hunter & Valentino, 1995).
(Seuring, Goldbach, and Kopline 2004)	Discussed managing time and the complexity of the SC in the textile industry.
(Weil 2006)	This paper examined how lean retailing and SC restructuring has affected performance and evaluated the supply relationship for judging potential competitors.
(Bruce and Moger 1999)	How to develop a strategy to maintain closer control over the SC in efforts to deliver the highest quality product at a competitive price. The paper examined the implications of SCM for innovative developments within the UK clothing industry.
(Sunhilde 2008)	The researcher described how SCM was used to increase profit and customer satisfaction.

In these studies, techniques such as QR, lean and agile SC, collaborations, an evaluation model for suppliers' selection, introduction of the RFID system, the life

cycle of fashionable items and many others have been considered in relation to competitive advantage and competitiveness but no discussion was found the related to the co-operational relationship of external stakeholders and internal stakeholders in the SC. However, the next section of the literature review focuses on the Bangladeshi garment industry.

3.6 Bangladeshi Garments (RMG) Industry and its Supply Chain

In the above section, the literature about the garment and textile industry has been discussed from a different perspective being mostly in the context of developed countries. This section discusses some specific relevant studies in the literature about the Bangladeshi RMG and textile sector. In the previous section and in chapter 2, much has been discussed about the garment industry of Bangladesh. The structure of the Bangladeshi RMG industry is totally different and therefore the SC in the CMT (cutting, making and trimming)-based industry is quite unique. Moreover, there have many studies on the RMG industry but these have been very general in nature and mainly deal with the industry's problems, prospects, growth and development (Quddus and Rashid 2000; Debapriya and Rahman 2003; Azad 2004; Rahman and Anwar 2006; Rashid 2006; Abdin 2008; Nuruzzaman 2001). Many studies have been conducted on strategies in the post-MFA period (Ahmed 2004; D'Souza Undated; Nordås 2004; Kabir 2007; Habib 2009). Ahmed (2009), in her research work, has described the drivers of growth, challenges faced and performance of RMG manufacturing in Bangladesh following the abolition of the MFA. In a research report for the Centre for Policy Dialogue (CPD), Sobhan (2003) has mentioned some drivers and barriers from the demand and supply sides of the RMG industry. In this research, from the perspective of internal stakeholders, drivers and barriers of manufacturers and buyers were strongly considered. Adhikari and Weeratunge (2007b) have also discovered some drivers and barriers on the basis of the demand and supply sides. But the writers did not focus on the influence of these drivers and barriers in the SC whereas the World Bank (2005) suggested that improving the domestic SC would be a strategic option for the Bangladeshi RMG industry to develop competitiveness.

As the Bangladeshi RMG industry is dependent on imported raw materials, this sector therefore needs to maintain a long backward supply chain and it takes a long

lead time to process an order (Knutsen 2004; Habib 2009; Nuruzzaman, Haque, and Rafiq 2010). There is huge opportunity for the RMG industry of Bangladesh to capture more export share in the apparel (garment) sector. But due to the long lead time, the industry cannot increase its competitiveness and grasp the opportunity (Haider 2007; Nuruzzaman 2009). Therefore, the question to be asked is: how can this Bangladeshi RMG industry grasp this opportunity through increasing its competitiveness?

The phasing-out of the export-quota system from the beginning of 2005 has raised the issue of the competitiveness of the Bangladesh RMG industry as a top priority (Haider 2007). Due to the influence of non-supportive bureaucratic behaviour, political action and country risk, the Bangladeshi RMG sector has failed to reduce lead time and increase competitiveness (Quddus and Rashid. 1999; Adhikari and Weeratunge 2007b; Nuruzzaman 2008). Some studies have been conducted on the influence of different country factors derived from external stakeholders such as: bureaucracy, political risk and country risk in the international SC of international business (Hadjikhani and Hakansson 1996; Haque 2007; Kim 2006). However, no significant studies were found of the RMG SC in terms of the influence of these factors and how these factors could affect the competitiveness of the RMG industry through the SC. The RMG industry SC is international in nature. To develop an efficient SC, the Bangladeshi RMG industry must consider these factors which are derived from the external stakeholders (Hadjikhani and Hakansson 1996; Kabir 2007).

Exporting garments to the global market is currently challenged by the growing competition from low-cost producers, reduction of consumer shopping time, and the growth of overseas buyers' bargaining power (Ho 2005b). Responding to these challenges, the RMG industry of Bangladesh is seeking new sources of competitive advantage and to improve its competitiveness through the development of the SC and its management (Gunasekaran, Pate, and Tirtiroglu 2001; Nordås 2004). However, some research studies have been found about the garment industry as stated above but no in-depth study was found on SCM for the Bangladeshi RMG industry and the improvement of its competitiveness. SCM, in general, is still a relatively new concept in most developing countries: many companies have not even begun to consider the formal management of their SC (Blos et al. 2009).

In the RMG industry's SC, buyers (customers) and suppliers (manufacturers) are two important prime stakeholders (Ertek and Griffin 2002) and their drivers (strengths) and barriers (weaknesses) are the main internal stakeholder factors (Haider 2007; Razzaque and Eusuf 2008) in the SC for improving competitiveness. Drivers are defined as the perceived/expected benefits and barriers are defined as perceived or likely constraints (Quaddus and Didi 2005). The elements (country factors) come from external stakeholders affecting these internal factors. Moreover, the coordination, relationships and capabilities of internal stakeholders are also influenced by external stakeholders (Sarkis, Zhu, and Lai 2011). A firm's competitiveness is associated with the configuration of resources and capabilities as the markets evolve (Halldorsson 2007). The RMG sector in Bangladesh has some resources like cheap labour, competitive price, capability, skilled personnel, quality machinery and significant experience which are the drivers (strengths) of the manufacturers (suppliers) of the industry (Meenu 2006; Adhikari 2007a; Adhikari and Weeratunge 2006; Saxena and Salze-Lozac'h 2010). The Bangladeshi RMG industry has developed dramatically leveraging these resources in the last three decades (Adhikari and Weeratunge 2007b; Nuruzzaman, Haque, and Rafiq 2010). The industry's major barriers include the lack of fabrics supply and of its main resources, and the long lead time (Tewari 2006; Nuruzzaman, Haque, and Rafiq 2010). On the basis of stakeholder and resource dependence theories (discussed in the next section), this study has examined how the proper utilization of these strategic resources (drivers/strengths) and barriers in the SC of the RMG business process would lead the industry to gain competitive advantage and eventually to the improvement of its competitiveness by overcoming the main barriers.

Moreover, many of the research studies in the literature about the RMG sector of Bangladesh have been reviewed. Most of the literature has focused on the necessary action required in the post-MFA period (Karim 2003; Choudhury and Hossain 2005; Rahman 2005; World Bank 2005; Adhikari and Weeratunge 2006; Tewari 2006; Kabir 2007; Joarder, Hossain, and Hakim 2010) and about growth (Rock 2001; Rahman 2004; Kee 2005; Rashid 2006; Uddin 2006; Razzaque and Eusuf 2008; Berg et al. 2011; Mottaleb 2011). The research literature, including those studies listed above, is summarised in table 3.5. However, very few research works (World Bank 2005; Adhikari and Weeratunge 2007b; Claeys and Brachet 2008; Saxena and Salze-Lozac'h

2010) have discussed the SC and competitiveness. Hence, as the main objective of this research is to improve competitiveness via the SC, the literature related to competitiveness and improving competitiveness is discussed in the following sections.

Table 3.5: Literature about Bangladeshi RMG

(Claeys and Brachet 2008)	This paper discussed Bangladeshi labour rights in the SC of the garment industry.
(Adhikari and Weeratunge 2007b)	This paper argued that despite several constraints, the South Asian region has the potential to develop itself as a global T&C hub. This paper recommended three necessary steps to enhance competitiveness but did not mention the SC.
(Rahman 2005)	Described the global apparel market and discussed Bangladesh's RMG industry's experience and relative strengths for facing the post-MFA period.
(Saxena and Salze-Lozac'h 2010)	The authors described the issue of competitiveness in the Bangladeshi RMG industry, mentioning the stakeholders' roles and comparative advantages and disadvantages of the RMG industry.
(Uddin 2006)	This dissertation addressed the history of the Bangladeshi RMG industry and acknowledged both international and national factors that contributed to the enormous growth.
(Rahman and Anwar 2006)	In this report, the authors explained the competitiveness of the Bangladeshi RMG industry compared to China in the US market. It also described the comparative advantage scenario of Bangladesh's RMG.
(Rahman 2004)	The author described how the garment business globally shifted and came to Bangladesh. It also described its growth in Bangladesh.
(Choudhury and Hossain 2005)	The authors have taken step to define the challenges and opportunities in the post-MFA period in the RMG sector and indicated the government response to combat post-MFA challenges.
(Joarder, Hossain, and Hakim 2010)	This paper made an attempt to analyse the post-MFA export performance of major apparel exporting countries with special concentration on the Bangladeshi RMG industry.
(Berg et al. 2011)	Discussed the potentiality of growth and challenges to growth for the RMG industry. Authors gave emphasis to reducing country risk and mentioned the role of three main stakeholders (government, buyers and suppliers) in the RMG industry.
(World Bank 2005)	This report actually discovered why Bangladesh achieved competitiveness before the abolition of the MFA and how it could gear up its competency post-MFA period. Emphasis was given to improving domestic and regional SCs.
(Razzaque and Eusuf 2008)	Described the three stakeholders, demand and supply-side drivers and barriers. Also focused on the issue of competitiveness through improving productivity and workers' skill.
(Bhattacharya, Rahman, and Raihan 2002)	Authors presented the contribution of the RMG sector to the Bangladeshi economy.
(Karim 2003)	Strategically how the Bangladeshi RMG sector coped with the post-MFA challenges.
(Rock 2001)	The author described in this paper how the wave of globalization came to the Bangladeshi RMG sector.
(Mottaleb 2011)	The author described in this discussion paper the rapid growth of the garment industry of Bangladesh.

(Rashid 2006)	In this paper, it was explained how the Bangladeshi RMG industry emerged considering the favourable trade environment and low labour cost and also discussed the sustainability of the RMG industry.
(Habib 2009)	In this paper, the author emphasized the backward linkages for minimizing lead time. This paper focused on the policy implications of the backward linkage industries.
(Kee 2005)	To increase the firm's productivity, the author gave emphasis to FDI (foreign direct investment) in his paper indicating the government's role and that of political action.
(Tewari 2006)	After quotas, price and cost competitiveness alone are not enough for a firm to gain market share. Timely supply, short lead times, low inventories, innovation and the ability to contribute to design and full package supply are also very important.
(Kabir 2007)	After quotas, the author has given emphasis to preferential trade agreements and political stability for the RMG sector. To promote economic enhancement, political parties need to achieve common consensus about economic growth and long-term vision to run Bangladesh as a prosperous country.
(Quddus 2001)	The author discussed the bureaucratic corruption in garment exports from Bangladesh.
(Ferdousi and Ahmed 2009)	This study investigated the improvement of manufacturing performance through lean practice in the Bangladeshi garment industry. It has helped to reduce lead time and cost and to improve productivity.
(Hossan, Sarker, and Afroze 2012)	This paper discussed the recent unrest in the RMG industry which indicates political action in this industry.
(Islam, Begum, and Rashed 2012)	Due to operational disturbances, manufacturers are facing competition with respect to quality, cost and time to market.
(Khondker , Razzak, and Ahmed 2005)	Discussed the exports, employment and working conditions of RMG industry in the post-MFA period. The authors discussed competitiveness in reference to decent work where productivity, the role of government and stakeholders were examined
(CPD 2007)	This paper discussed Bangladesh's apparel sector in the post-MFA period with emphasis given to structural weaknesses and policies for strengthening competitiveness.
(Sultana et al. 2011)	Discussed the impact of the abolition of the quota policy and the reality in the RMG industry.
(Ahmed 2009)	This paper analysed the main drivers of growth, challenges faced and performance of RMG manufacturing in Bangladesh in the post-MFA period.
(Clark and S.Kanter 2010)	Discussed the violence in the RMG sector and country risk.
(Kaes and Azeem 2009)	This paper mentioned about proper management of supply chain and shorter lead time. Here the writer mainly discussed on demand forecasting and supplier selection for importing raw materials.
(Ahamed 2013)	This study discussed about the poor working conditions in the RMG factories, lack of social compliance and other international labour standards. This study proposes an effective monitoring and surveillance system (EMSS) model to establish social compliance.
(Khosla 2009)	In this paper the author has taken steps to find out means to reduce gender-based social exclusion of women in the RMG industry. The findings have been given importance on the role of stakeholders in reducing social exclusion of women.

3.7 Competitiveness

Survival and success in business in such turbulent times increasingly depends on competitiveness: the ability to compete. The term ‘competitiveness’ itself is a broad concept. Its meaning, implications, adaptation and achievement vary from firm to firm, industry to industry, or country to country. Competitiveness is basically reflected in exports (Min and Galle 1991a). The literature provides no universal agreement on the definition of competitiveness. Some researchers have considered the labour cost, exchange rate, interest rate, prices of materials inputs or costs related as quantitative factors for measuring the competitiveness of a manufacturing industry (Haider 2007). Other researchers have considered product quality, innovativeness, design, distribution networks, after-sales service, transaction costs, institution factors relating to the bureaucracy of export procedures, and other non-price factors as factors for measuring the competitiveness of a manufacturing industry (Haider 2007). Few definitions of competitiveness exist in the literature; however, competitiveness was defined in one study as the ability to sustain trade in the local and global environment (Rooyen, Stroebel, and Esterhuizen 2010). In today’s world, SCM is a key strategic initiative for increasing organisational effectiveness and for better realization of organisational goals such as enhancing competitiveness. Porter (1990) defined, competitiveness as productivity growth that is reflected in either lower cost or differentiated products that command premium prices. Competitiveness can be defined as the ability of a firm to design, produce and/or market products superior to those offered by competitors, considering the price and non-price qualities (D’Cruz and Rugman 1992; Ambastha and Momaya 2004). According to the report of the House of Lords (1985) on overseas Trade (the Aldington Report), a firm is competitive if it can produce products and services of superior quality and lower costs than its domestic and international competitors.

Competitiveness is synonymous with a firm's long-run profit performance and its ability to compensate its employees and provide superior returns to its owners. This suggests that measurement of a company's "competitiveness" should incorporate quantitative measures of costs, prices and profitability, and qualitative indicators of non-price factors, specifically quality, if the definition is to be satisfied. A parallel approach was taken by the European Management Forum (1984), which defined competitiveness as "the immediate and future ability of, and opportunities for,

entrepreneurs to design, produce and market goods worldwide whose price and non-price qualities form a more attractive package than those of foreign and domestic competitors" (Buckley, Pass, and Prescott 1988). Competitiveness refers to those assets and processes within organisations that provide competitive advantage (Porter 1985). Competitiveness is the capability of producing and delivering customized products and services fast and efficiently all over the world (Buckley, Pass, and Prescott 1988). Stadtler (2005) also included factors such as fulfilling customer demand, integrating organisational units along a SC and coordinating materials, information and financial flows.

Competitiveness is used by many different researchers to mean many different things (Hagmann and McCahon 1993; Momaya 1998; Serin and Civan 2008; Rooyen, Stroebel, and Esterhuizen 2010). Sometimes, it is used as an excuse for protectionism, sometimes for cost cutting or to inspire innovation and increased productivity. According to the Task Force of Canadian Agrifood Industry, an industry is competitive if it has "the sustained ability to profitably gain and maintain market share in domestic and/or foreign markets"(Duren, Martin, and Westgren 1991). This definition indicates that a competitive industry cannot be created through government assistance and an efficient SC. The literature in table 3.6 shows various meanings of competitiveness. But as companies are increasingly relying on the process of the SC as a source of competitive advantage and increasing competitiveness (Cohen and Roussel 2005; Gunasekaran, Pate, and Tirtiroglu 2001; Gunasekaran, Patel, and McGaughey 2003), the achievement of firm-level or industry-level competitiveness can be gained by the achievement of SC competitiveness.

Table 3.6: Literature about defining competitiveness

(Rooyen, Stroebel, and Esterhuizen 2010)	The paper explored trade competitiveness and competitive performance in the South African wine industry.
(Serin and Civan 2008)	This paper discussed the competitiveness of Turkey's agriculture, fruit and vegetable industry in the EU.
(Lall 2001)	This paper analysed the national competitiveness from the developing countries' perspective.
(Oral 1986)	The paper proposed a model for: (i) measuring the competitiveness level of a given industrial firm, (ii) identifying the strengths and weaknesses of the firm, and (iii) formulating strategies to improve the competitive position of the firm.
(Moon and Newman S.Peery 1995)	Here the author defined competitiveness from the perspective of the product, firm, industry and at the national level.

(Porter 1990)	The author considered factor conditions, demand conditions, supporting industries and firm rivalry to analyse competitiveness.
(Momaya 1998)	In this article, the author discussed different levels of competitiveness and reviewed its significance at the industry level.
(Razzaque and Eusuf 2008)	Emphasis was given to the wages pattern and productivity and also to the government's role in improving competitiveness. They also mentioned some barriers.
(Hagmann and McCahon 1993)	In this paper, the authors gave emphasis to implementing a strategic information system (IS) for increasing competitiveness in SMEs (small and medium enterprises).
(Hobbs, Kerr, and Klein 1998)	In this paper, an assessment was made about creating competitiveness in the Danish pork industry. The competitive strengths, weaknesses, opportunities and threats facing the Danish pork SC were analysed.
(Ahn et al. 1999)	This paper addressed the issue of SC competitiveness (SCC) from the manufacturing capability perspective in the context of the Korean home appliance industry.
(IFC 2006)	How global trends are influencing competitiveness in the textile and apparel industry
(George and Manasis 2010)	The authors used Porter's diamond model to analyse the competitiveness of Greece's olive oil sector.

Supply chain competitiveness (SCC) deals with both quantitative and qualitative factors. Qualitative factors are infrastructure, business services, labour, government, customers, suppliers, supply chain uncertainty, manufacturing practices, etc. while quantitative factors are transport cost, exchange rates, labour rates, taxes, etc. (Bhatnagar and Sohal 2005). According to Bhatnagar and Sohal (2005), a firm's SC competitiveness is measured by lead time performance, inventory turnover, responsiveness to demand variability, customer service, flexibility, time to market and quality.

Supply chain competitiveness (SCC) cannot be thought of as a single unit but is the integrated effort of the components of the SC as a whole (Lim et al. 2006). According to Gunasekaran, Patel, and McGaughey (2003), SCC is comprised of the competitiveness of all of the SCC components such as suppliers, manufacturers and distributors. Therefore, creating competitiveness by analysing the SC means that there is a need to achieve competitiveness in all components of the SC. Different researchers have described different strategies for achieving competitiveness. To create competitiveness, many authors have given emphasis to analysing the SC and most of the literature (La Londe 1997; Williams 1999; Sahay, Jatinder N.D. Gupta, and Mohan 2006; Verma and Seth 2010) has highlighted the importance of internal cooperation and relationships. A few research studies (Momaya 1998; Bhatnagar and Sohal 2005; Sahay, Jatinder N.D. Gupta, and Mohan 2006; Kale 2007; Song and Panayides 2008;

Verma and Seth 2011) have highlighted the importance and influence of the external stakeholder element. Moreover, most of the literature, including the above studies, has considered a wide range of strategies for competitiveness which are summarised in table 3.7. The literature about SCC in the garment industry including the Bangladeshi garment sector is discussed in the following section.

Table 3.7: Literature about supply chain competitiveness

(Verma and Seth 2011)	This paper highlighted the importance of the concept of competitiveness in the SC and presented a conceptual framework for supply chain competitiveness (SCC). To create competitiveness, it emphasized the activities of manufacturers and suppliers, and the implications of political, legal, technical, socio-cultural, competition and demographic factors.
(Pine 1993)	The researcher gave emphasis to mass customization for gaining competitiveness of the SC.
(La londe and Powers 1993)	Information and communication technology. Suggested the use of the internet and other communication systems for SCC.
(La Londe 1997)	Agility and flexibility. Develop and manage cooperation and collaboration partnerships.
(Williams 1999)	Supplier–customer relationship (but did not mention supplier- and buyer-side drivers and barriers).
(Mentzer 2004)	Identified 12 drivers for competitive advantage in the SC which are necessary for the SC to be competitive.
(Niraj, Gupta, and Narasimhan 2001)	Building relationships with customers for improvements in profitability, serviceability and reduced costs in the SC.
(Verma and Seth 2010)	Due to economic globalization, competition has arisen among enterprises and their SCs. SCC has emerged as one of the strongest tools for gaining competitive advantages. This paper identified some issues of competitiveness and presented the role of suppliers, manufacturers and distributors.
(Kale 2007)	The researcher mentioned the external factors like political and macro-economic forces and supply-side barriers in the SC for increasing competitiveness. He mentioned that to increase global competitiveness, a company needs to increase its SCC. The researcher also mentioned about the lean SC for increasing competitiveness. Lead time and cost risks were two main risks to improving SC competitiveness.
(Sahay, Jatinder N.D. Gupta, and Mohan 2006)	This paper analysed the current state of SCM practices in order to increase their competitiveness. It is important to coordinate, synchronize and integrate the three dimensions of SC activities (i.e. SC objectives, SC processes and management's focus on SC) to increase competitiveness.
(Rao and Holt 2005)	The research paper identified after analysis that greening the different phases of the SC would lead to competitiveness and economic performance.
(Hult, David, and Mathias 2007)	This paper discussed the influence of a culture of competitiveness and knowledge development on improving SC performance in varied market turbulence conditions.
(Bhatnagar and Sohal 2005)	In this research paper, competitiveness via the SC was examined by emphasizing qualitative (labour, infrastructure, political stability, key competitors' locations, SC uncertainty) and quantitative (transport cost, exchange rate, labour rate and taxes) factors including operational factors like quality, flexibility, inventory turnover and responsiveness.
(Song and Panayides 2008)	The authors have highlighted the importance of port and terminal integration in the SC to achieve competitiveness.
(Gereffi 2002)	This paper highlighted the global textile commodity chains involved in the global sourcing network. It also discussed the competitiveness of Asian economies in the apparel SC. The paper emphasized the buyer-seller linkages in the upstream and downstream segments of the apparel chain.

3.8 Competitiveness of the RMG Industry and Supply Chain

Exporting garments to the global market is currently challenged by the growing competition of low-cost producers, reduction of consumer shopping time, and growth of overseas buyers' bargaining power. Responding to the challenges, clothing companies in Bangladesh and other competitor countries are seeking new ways of gaining competitive advantage through improving the management and efficiency of the industry's SC. Very few studies in the literature have been investigating SCC in the RMG industry (Gereffi 2002; Bhatnagar and Sohal 2005; IFC 2006).

In the textile and garments industry, managing the SC and increasing competitiveness has been a major research issue in contemporary studies (Bruce, Daly, and Towers 2004; Kabir 2007; Nuruzzaman, Haque, and Rafiq 2010). In the Bangladeshi RMG industry, the competitiveness tends to increase or to retain market share in the quota-free environment by reducing lead time and increasing productivity through an efficient supply chain(Duren, Martin, and Westgren 1991; Nuruzzaman 2007, 2008). The phasing-out of the export-quota system from the beginning of 2005 has raised the competitiveness issue of Bangladesh's RMG industry as a top priority issue (Haider 2007). In a research Asgari and Hoque (2013) have mentioned about supply chain performance using a system dynamics approach to increase the RMG industry's competitiveness. In this research Causal Loop Diagram has been developed given emphasis to the use of information technology for reducing lead time and cost. But there is no indication about the role of stakeholders and their integrated relationship. It can be said from some of the previous studies (Montfort and Yongzheng 2004; Adhikari and Weeratunge 2006; CPD 2007; Razzaque and Eusuf 2008; Nuruzzaman, Haque, and Rafiq 2010; Berg et al. 2011) that due to non-supportive bureaucratic behaviour, unfavourable political actions and country factors, the Bangladeshi RMG sector failed to reduce lead time, increase productivity, and develop good understanding and cooperation among the stakeholders. From the above literature review, it has been found that the above barriers are faced by the Bangladeshi RMG industry in increasing competitiveness. Although few studies have been found on the influence of different factors such as bureaucracy, political risk and country risk in the international SC(Kim 2006; Haque 2007; Hadjikhani and Hakansson 1996), very limited studies (see table 3.8) were found about the RMG industry's SC and the influence of those factors on the

competitiveness of the SC. As the RMG industry's SC is international in nature, it must consider these country factors or the external stakeholder elements to develop an efficient SC. As the main focus of this study is on improving competitiveness, the literature about improving competitiveness is discussed in the next section.

Table 3.8: Literature about competitiveness of Bangladeshi RMG industry through the supply chain

(Sattar 2005)	The author addressed the post-MFA competitiveness and challenges for the RMG industry. This study described a number of strategic options including the SC of the RMG industry.
(Montfort and Yongzheng 2004)	This paper evaluated the impact on the Bangladeshi economy of the phasing-out of textile and clothing quotas, with a particular focus on the balance of payment, GDP and employment. This paper also evaluated the competitiveness and supply constraints. The author mentioned improving supply management to achieve competitiveness.
(Saxena and Salze-Lozac'h 2010)	The author described the issue of competitiveness in the garment industry of some Asian countries like Bangladesh in the post-quota world. He mentioned the stakeholders' roles and comparative advantages and disadvantages of the RMG industry.
(Haider 2007)	The writer presented how the surface-level and deep-level competitiveness of the Bangladeshi RMG industry can be increased. The writer expressed various factors that should be considered and a model was developed to increase competitiveness.
(Razzaque and Eusuf 2008)	This study showed how the RMG industry of Bangladesh played an effective role in poverty alleviation through international trade in the clothing business. It also gave direction to increase competitiveness through improving productivity and workers' skills.
(Khondker , Razzak, and Ahmed 2005)	This paper presented the most important issues and challenges facing the RMG industry during the current post-MFA regime. This paper also discussed the competitiveness issue in relation to productivity, working environment and stakeholders.
(Berik and Rodgers 2009)	This paper examined recent evidence on Bangladesh's RMG exports and working conditions in the context of trade liberalization since the end of 2004. The financial crisis of 2009 and the resulting resource constraints have made it difficult to initiate the new policy and export diversification for improving competitiveness.
(Haque et al. 2011)	In this research study authors have measured the performance of supply chain network of RMG using Supply Chain Operation Reference(SCOR) model. They have measured four Key Performance Indicators which are Timely Delivery, Adherence of Production Target, Quality Capability and On time Shipment. The outcome of the research shows that the overall efficiency of the supply chain was not good enough.

3.9 Improving Competitiveness

Besides the above studies, no significant studies were found that dealt with improving competitiveness through the SC in the clothing sector. However, there were several studies undertaken on different aspects of SCM for improving competitiveness in various other industries. For example, Seuring, Goldbach, and Kopline (2004) illustrated increasing cooperation through an integrated SC; Hult, David, and Mathias (2007) examined the influence of a culture of competitiveness and knowledge development on SC performance; a research study by Luchi and Paladino (2000) explored improving competitiveness in a manufacturing value chain for the automobile industry; another study undertaken by Čižmana and Černetič (2004) was on improving competitiveness using a decision support system in the production of veneers. Rao and Holt (2005) and Bacallan (2000) described and considered a green SC; Breen and Hing (2002) addressed improving competitiveness through cooperation. Bramorski (2000) discussed about improving competitiveness through IT and information management. Thomas and Long (2000) mentioned some managerial critical success factors (CSFs) namely, market responsiveness, utilization of resources, management and control, and organisation objectives to create sustainable growth and finally to improve competitiveness. It has been shown in a study focused on monitoring and controlling versus supporting process improvement that promoting overall system optimization and addressing the dynamics of changing systems improve manufacturing competitiveness (Ghalayini 1997). Stadtler (2005) stated that improving competitiveness is the task of integrating organisational units along a SC and coordinating materials, information and financial flows in order to fulfil customer demand; Bhatnagar and Sohal (2005) explained that operational competitiveness was influenced by qualitative factors; (Gunasekaran, Pate, and Tirtiroglu 2001)emphasized improving performance at the strategic, tactical and operational levels; Lummus and Vokurka (1999) illustrated collaborative relationships for improving competitiveness. However, in these studies, the country factors were not considered. While there is no right theory for managing the SC, Halldorsson (2007) considered different organisational theories and models to explain inter-organisational phenomena in order to develop the SCM paradigm as a scientific discipline. Some research works (Au and Ho 2002; Eng 2005; Sengupta, Heiser, and Cook 2006; Suhong et al. 2006; Nonino and Panizzolo 2007) have been

conducted on increasing competitive advantage and performance but very little research has been conducted on the Bangladeshi RMG industry about improving competitiveness. Hence, there is a big gap in the field of research on improving competitiveness in the RMG industry of Bangladesh.

At present in the business environment, industries are facing intensified global competition, rapid technology advances and increasingly more demanding customer expectations. In this new environment, to improve firms' competitiveness, the traditional manufacturing model has been re-engineered and restructured. As companies have improved their internal operations by increasing product quality while reducing costs, now they are looking to develop competitive advantages in areas such as delivery, collaborative relationships, flexibility and innovation. All these activities emphasize the importance of time. Firms have found that a successful initiative to accomplish this objective is through SCM (Vokurka, Zank, and Lund 2002). Kleindorfer and Saad (2005) mentioned, problems of coordinating supply and demand and problems from political actions and economic disruptions that made SCM inefficient. In this situation, all the internal and external stakeholders and their actions may come together through co-operational relationships and integrated activities along the SC. However, from the above literature about the SC and competitiveness in the garment sector, it is clear that there are very few research works related to the SC and competitiveness. However, many research scholars have been quoted in a scattered way in their various research studies on the SC, the role of internal and external stakeholders, and strengths and barriers of those stakeholders. Therefore, taking into consideration the research questions and objectives, some specific stakeholders and their elements have been considered from the previous literature. In the next section, the elements that were considered from different stakeholders are discussed in a meaningful way: these are the constructs of our preliminary research model.

3.10 External Stakeholders (Country Factors)

Freeman (1984) defined a stakeholder as "any group or individual who can affect or is affected by the achievement of the firm's objectives". This includes employees, customers, suppliers, public interest groups and government bodies. There are two types of stakeholder in the RMG supply chain: internal and external. Internal

stakeholders such as employees, suppliers, manufacturers and buyers (Tsai, C.Yeh, et al. 2005; Fassin 2009)are directly involved in the process of the SC. External stakeholders such as the government, political parties, bureaucrats, etc. (Tsai, C.Yeh, et al. 2005; Fassin 2009) are indirectly involved and influence the process through their action, pressure and services.

In this study, we considered two external stakeholders, that is, the government or political parties and bureaucrats. Under these external stakeholders, two main factors/elements are considered: bureaucratic behaviour and political action. Country risk was another factor which was the ultimate result of these first two factors. In this study, these factors were considered as country factors (Hadjikhani and Hakansson 1996).

Although the government, political parties and bureaucrats are not directly involved in the process of SCM, they are very influential external stakeholders in the whole business process and especially in the international perspective. Therefore, political action and bureaucratic behaviour have been considered in the SC as stakeholder analysis has become a conceptual device over the past couple of decades in the fields of business and society, business ethics and management (Reed 2002).

3.10.1 Political Action (PA)

Political action (PA) means the role and action of political stakeholders (the ruling political party, political opposition groups) in business (Hadjikhani and Hakansson 1996; Holtbrugge, Berg, and Puck 2007). Political action or activities are defined as the efficient design of all relationships with political stakeholders that may affect the operations of a company in a positive or negative way in order to achieve competitive advantages (Welge and Holtbrugge 2006; Holtbrugge, Berg, and Puck 2007). Boddewyn and Brewer (1994) have mentioned in their research study that the international firms which are exporters operate under a great variety of evolving political regimes that have an impact on the firms' operations.

In business studies, as an environmental factor, political risk is very important with this being derived from political action by the ruling government and the opposition groups (Porter 1985; Grosse and Behrman 1992; Miller 1993; Hillman 2003; Hillman and Wan 2005). This is obviously the case when a government in a certain

country is the actor on the political side and a large multinational corporation is the actor on the business side. The interplay becomes complex when the government or some of its units, political opposition groups and units responsible for the commercial transaction take part in the commercial exchange. This scenario is the same in several business areas (Hadjikhani and Hakansson 1996) and also in the RMG business. In the SC of the RMG industry, the government and political parties play vital roles as national stakeholders through their political action (Choudhury and Hossain 2005).

Absar (2001) mentioned, economic diplomacy for Bangladesh in which the government's role and political action (PA) are very important in any business. So, in this study, the political action comes from the national stakeholders, that is, from the government and political parties. Based on stakeholder theory, these are instrumental stakeholders that management needs to consider when seeking to achieve the organisations' goals (Jones 1995; Reed 2002). The action from these stakeholders may increase or decrease competitiveness directly or indirectly (Bhatnagar and Sohal 2005; Kale 2007; Verma and Seth 2011). Islam, Begum, and Rashed (2012) highlighted in their research that the RMG sector needs to focus on the disruption-free supply of products to international markets. They mainly highlighted the disruptions caused by political instability. Therefore, political action (PA) has been considered as an important factor in the proposed model on the basis of stakeholder theory.

3.10.2 Bureaucratic Behaviour (BB)

Bureaucrats are responsible for executing the decisions of the political leadership and for maintaining the day-to-day regulatory and service functions of the state (Nimir and Palmer 1982). The term bureaucracy means any administrative system based on professionalization and hierarchical subordination (Friedrich 1952). Dimock and Hyde defined bureaucracy in terms of the subdivision of jurisdiction, hierarchy and professionalization of personnel (Selznick 1943). Bureaucracy or bureaucratic behaviour (BB) is concerned with the behaviour of officials while the actions of, for example, worker groups, may also lead to deflection of an organisation (Selznick 1943). The capacity of bureaucracy to perform a developmental function depends on two components: the structure of bureaucracy and the behaviour of the individuals (Nimir and Palmer 1982). The context of BB is

revealed by bureaucratic decisions. The bureaucrats are part of the government of a country and play an important role in making decisions regarding administration and development in any sector of a country. In any business process or commercial transaction, the government, political groups and bureaucrats play important roles (Hadjikhani and Hakansson 1996). An ideal bureaucratic structure is assumed to contribute to unity and coordination, precision and speed, obedience and loyalty, the reduction of friction, continuity across changes in government. Merit-based bureaucracy fosters economic growth in developing countries (Evans and Rauch 1999; Olsen 2006). According to stakeholder theory, the government and political groups are important stakeholders (Donaldson and Preston 1995)and as part of the government, bureaucrats are also important stakeholders. As defined by Freeman (1984), a stakeholder is 'any group or individual who can affect or is affected by the achievements of the organization'. Therefore, BB is an important part of the proposed model which is supported by stakeholder theory.

The research study by Kim (2007) mentioned that bureaucratic behaviour (BB) was influenced by political action (PA). The dynamics of political institutions affect bureaucratic behaviour. This research showed that multi-institutional characteristics of the political system influence bureaucratic behaviour in predictable ways. Therefore, BB also affects the SC process. In another research study (Haque 2007), it was found that diverse national settings and political structures are responsible for producing their respective patterns of administrative system and its reform. Many others factors such as one-party dominance, military rule, political instability, violent political conflict, frequent changes in the ruling party and corruption contribute to the inability to maintain bureaucratic principles and to causing problems in terms of making the SC efficient. Quddus (2001) also mentioned the bureaucratic problem and corruption in the Bangladeshi RMG export business.

In the RMG industry, buyers (demand side) and suppliers (supply side) are involved directly in their business processes but with some issues they are involved in the bargaining process with the help of the government and bureaucrats. Much paperwork and documentation need to be completed in the processes of the SC of the RMG industry. Buyers can bargain with suppliers for timely delivery with short lead time, an efficient SC, competitive price, quality product, etc. They also expect inexpensive sources of raw materials, inexpensive labour, technology and a very

good and healthy manufacturing environment. Political government expects to increase income and employment through manufacturing and exporting, managerial knowledge and technology, improvement in the balance of payment and soft conditions (Grosse and Behrman 1992). A political government and bureaucrats through their political activities can bargain for different issues in RMG export and create an advantageous position. With stakeholder theory, it will be investigated how the demand- and supply-side issues are influenced by bureaucrats and negotiated in the RMG sector to increase competitiveness.

3.10.3 Country Risk (CR)

All business transactions involve some degree of risk. When the clothing business occurs across borders, this carries additional risks which are not present in domestic business. These additional risks are called country risk (Meldrum 2000). Others have attempted to define country risks as factors affecting foreign direct investment (Picard 1982; Min and Galle 1991a; Bergara, Henisz, and Spiller 1998; Min and Galle 1991b; Fatehi and Safizadeh 1994). Country risk is the result of political, social and economic factors (Oetzel, Bettis, and Zenner 2001). It also includes risks arising from a variety of national differences in economic structures, policies, socio-political institutions, geography and currencies. Tsai, C.Yeh, et al. (2005) argued in their research work that according to 'stakeholder influence strategy theory', external stakeholders such as the country, the media or some labour groups have influence on the internal stakeholders of a business. Due to some actions of political parties, the government and bureaucrats, a negative influence or risk may arise in a country. In this study, country risk comprised the ultimate result of the different non-supportive role of the government, non-cooperation and misunderstanding between the ruling party and the opposition, and the activities of bureaucrats. When country risk is higher, it affects the SC and weakens the competitiveness of the RMG industry.

As noted earlier, the RMG sector in Bangladesh is essentially international. In all activities of international business, country risk is considered to be a significant factor (Grosse and Behrman 1992; Meldrum 2000). Developed countries are trying to remain competitive in business by locating their operations in low-wage countries and sourcing (outsourcing) from those countries (Kogut 1993; Fraering and Prasad 1999). By international outsourcing, firms have been able to reduce costs, improve

quality, become more flexible and innovative and reduce lead times for delivery. In addition to these advantages, outsourcing has some complexity in transport, custom clearances and tariffs and payment systems (Picard 1982; Min and Galle 1991a; Frear, Metcalf, and Alguire 1992; Birou and Fawcett 1993; Swamidass 1993). Moreover, companies select appropriate outsourcing strategies and an attractive outsourcing platform to achieve competitive advantage in business taking into consideration the level of country risk.

A country might be an attractive location or outsourcing platform due to its primary, secondary or tertiary endowment factors (Porter 1986; Prasad and Sounderpandian 2003). These factors include access to low-cost labour or perhaps proximity to raw materials; the quality of the infrastructure, skilled labour and scientific personnel; the country demands and operating conditions; cultural nuances and legislation (Bass, McGregor, and Walters 1977; Kogut 1985; Chikán and Whybark 1990; Goonatilake 1990; Birou and Fawcett 1993; Prasad and Sounderpandian 2003; Porter 1986) . Various types of risk may arise in all aspects of endowment factors and these are associated with the involvement of the political role and bureaucratic behaviour. A firm may source from a specific location or a number of locations to minimize overall cost and gain competitive advantages by exploiting these factors or advantages. Therefore, the country risk is very relevant in this study. This research will look into how country risk influenced buyers in making decisions and how buyers were motivated to conduct business in Bangladesh.

In a research study, Miller (1993) expressed the view that in the country risk analysis, the uncertainties are related to political, government policy and macroeconomic factors but in strategy studies, uncertainties are instead input supply, product market and competitive uncertainties that are closely related to industrial organisation economics.

3.11 Internal Stakeholders (Business Factors)

In the development of organisational strategies, firms must realize that they are responsible for creating good relationships and cooperation between internal and external stakeholders. In the Bangladeshi RMG industry's SC, external stakeholders are non-supportive and non-cooperative in numerous services to internal

stakeholders which are intended to make the SC efficient (Adhikari 2007). Each stakeholder group has a different set of expectations relating to firms' performance. These different expectations may cause conflict to arise between the firm and its stakeholders. Such conflict can be extremely disadvantageous for the RMG marketer, as RMG marketers tend to be more integrated with their buyers and suppliers, two key internal stakeholder groups. Any strategic process which reduces the barriers in the SC, such as the stakeholder management process, should therefore be extremely beneficial to the manufacturers cum exporters of RMG products. In the above discussion, we have defined and identified the external and internal stakeholders in the RMG industry's SC. The internal stakeholders are, namely, the suppliers of the final products and the buyers of the final products (Fassin 2009; Philip et al. 2005). Some studies in the literature about the elements of internal stakeholders have been reviewed and summarised in the following section.

3.11.1 Supply-side Drivers (SD)

Drivers are defined as the perceived/expected benefits (Quaddus and Didi 2005). In the SC of the RMG industry, supply-side drivers are the suppliers' strengths which passively play positive roles for the SC (Ahmed 2009). These are in the form of a competitive price, cheap labour, quality products, marketing strength, experience in working with a reputed brand and with the largest companies such as Wal-Mart, Tesco, H&M, etc.(Rahman 2005; Rahman and Anwar 2006). Razzaque and Eusuf (2008) mentioned some supply-side drivers, that is, domestic trade policy and producers' response. In another study, Haider (2007) also mentioned some drivers for the issue of competitiveness such as suppliers who had achieved some level of product diversification and the upgrading of products in terms of exporting to the European countries which had added more strength. (Saxena and Salze-Lozac'h 2010) mentioned in her research report that low-cost labour, fast and efficient workforce, high labour supply, hospitable and cooperative nature of the suppliers, better price offer and good communication skill are the supply-side drivers. Joarder, Hossain, and Hakim (2010) mentioned that one of the main reasons for Bangladesh success in the garment market is price competitiveness for low wage rates. Therefore, the main driver of the suppliers is cheap labour. Sultana et al. (2011) have described that the availability of cheap labour, preferential treatment, lowest wage rates, technological upgrade and trade union-free EPZ (export processing zone) are also supply-side drivers for the Bangladeshi RMG industry.

3.11.2 Supply-side Barriers (SB)

Barriers are defined as perceived or likely constraints (Quaddus and Didi 2005). In the RMG business, supply-side barriers are the weaknesses (Ahmed 2009) in the SC. The barriers include poor infrastructure, a long lead time, lack of commitment and trust, being under pressure to reduce price, weak bargaining power, buyers' freedom to choose alternative suppliers from another country, lack of cooperation, etc. (Nuruzzaman 2001; Nuruzzaman 2009; Adhikari 2007a; Kale 2007; Berg et al. 2011; Sultana et al. 2011; Halder and Kim 2012). In a research study, (Quddus and Rashid. 1999) mentioned the role of politicians, bankers and bureaucrats who were creating barriers to suppliers. Uzzaman (2010) also mentioned the political corruption, bureaucracy and poor customs' formalities in Bangladesh. Abdin (2008) has also revealed that anomalies in the banking sector, vindictive political environment, bureaucratic shackles, lack of policy support from the government, lack of stakeholders' relation are the weaknesses for falling competitiveness against its competitors in the international market.

Razzaque and Eusuf (2008) also mentioned other barriers such as the lack of proper infrastructure, lack of safety in the workplace, very low wages, wage discrimination, and lack of skill development and training opportunities. Haider (2007) mentioned some supply-side barriers in relation to the issue of competitiveness such as the lack of government support, lack of backward linkage expansion, compliance issues, price competitiveness, long lead time, and production and distribution time (Islam, Begum, and Rashed 2012).

3.11.3 Demand-side Drivers (DD)

As previously stated, drivers are defined as the perceived or expected benefits (Quaddus and Didi 2005). In the Bangladeshi RMG business, demand-side drivers are the buyers' strengths which passively play positive roles for the SC (Razzaque and Eusuf 2008; Ahmed 2009). Demand-side drivers include: strong bargaining power, ability to choose alternative suppliers from another country, ability to offer a good price, a bulk customer, brand name, special facility for importing garments from member countries of the LDCs, trust and commitment, etc. (Wu et al. 2004; Rahman 2005; Zhao et al. 2008). Razzaque and Eusuf (2008) mentioned another demand-side driver, that is, a favourable international trade environment. Suppliers

are careful about the drivers of the buyers and take the necessary action to fulfil the buyers' demands. These types of actions actually make suppliers more competitive.

3.11.4 Demand-side Barriers (DB)

As previously stated, barriers are defined as perceived or likely constraints (Quaddus & Didi 2005). In the Bangladeshi RMG business, demand-side barriers are the pressures (Adhikari and Weeratunge 2007b; Ahmed 2009)from the buyers which play a negative role in the SC. Barriers include pressure for a shorter lead time, raising the NGOs' complaints about human rights, different types of conditions and regulations imposed on the suppliers, and different types of conditions and regulations imposed by the country's government (Nuruzzaman 2001; Adhikari and Weeratunge 2007b; Nuruzzaman, Haque, and Rafiq 2010). The compliance issues, pressure to reduce price and lead time barriers were raised by the buyers (Rahman 2005; Claeys and Brachet 2008). Razzaque and Eusuf (2008) also mentioned some barriers that were raised by the buyers such as better working conditions, and continuous pressures about international labour standards, etc.

Above elements of internal and external stakeholders according to the previous literature have been considered as parts or components of the SC. As the stakeholders are dependent on each other, a co-operational relationship is very important as per dependence theory. Moreover, the supportive theories are discussed in the next section;

3.12 Review of Underlying Theories

In a research study, Halldorsson (2007) discussed and developed SCM as a scientific discipline using different theories from non-logistics areas. This paper used various socio-economic and organisational theories applied in various managerial disciplines. Four different theories; principal agent theory (PAT), transaction cost analysis (TCA), network theory (NT) and resource-based theory (RBV) were used to contribute to selected fields of the SCM research domain, that is, third party logistics (TPL) and new product development (NPD). In another study Sarkis, Zhu, and Lai (2011) mentioned about 14 organisational theories applied in the SCM-related research studies. Stakeholder and Resource Dependence theories are two among these theories. No substantial number of research works about SCM of textile and

garment industries has used stakeholder or resource dependence theories. However, these two theories are very important and useful specifically in SCM of the RMG industry to bring together all the stakeholders and their factors to improve competitiveness. The detail of the theories is discussed in the following section.

3.12.1 Stakeholder theory

For the purpose of this study, stakeholders are 'any group or individual who can affect or is affected by the achievement of the organization's objectives' (Freeman 1984). According to stakeholder theory, buyers (customer), suppliers (manufacturers) of raw materials and finished products, logistics support service providers, the government, bureaucrats, political parties, etc. are stakeholders. Stakeholder theory suggests that companies produce externalities that affect many parties (stakeholders) which are both internal and external to the firm. Externalities often cause stakeholders to increase pressures on companies to reduce negative impacts and increase positive ones (Sarkis, Zhu and Lai 2011).

Organisations are not limited to interaction with market actors like customers, suppliers and shareholders in the business. They are also influenced by political stakeholders like governments, the media and non-government organisations (NGOs) (Holtbrugge, Berg, and Puck 2007). The insufficient consideration or ignorance of the stakeholders may create some conflict in different level of activities in the SC which may lead to poor competitiveness and financial losses. As a consequence, political parties and their activities, the government (political party and bureaucrats) and country-specific issues are becoming critical success factors (CSFs) in business (Hillman 2003; Hillman and Wan 2005; Holtbrugge, Berg, and Puck 2007). Therefore, stakeholder theory has become a crucial part of management literature (Donaldson and Preston 1995; Tsai, C.Yeh, et al. 2005) and also for this research. But who are the stakeholders? A variety of criteria has been suggested for establishing those who hold stakes. Among many criteria, only two have been considered: a) being necessary for the survival of the firm; and b) being influenced by or influencing the achievement of the organisation's objective (Freeman 1984). Our understanding of who is a stakeholder has been determined by these two criteria. Stakeholder theory argues that the success of a firm or organisation does not depend primarily on the efficient coordination and control of its operations, but on the

establishment and maintenance of a cooperative dialogue with all relevant internal and external interest groups or those with stakes who may influence its activities in a positive or negative way (Clarkson 1995; Freeman, Wicks, and Parmar 2004; Holtbrugge, Berg, and Puck 2007). Stakeholders are individuals or groups that have material, political, affiliated, informational, symbolic or spiritual interests in a company and that are able to advocate these interests through formal, economic or political power (Freeman 1984; Gioia 1999; Holtbrugge, Berg, and Puck 2007). As there are many internal and external stakeholders directly or indirectly involved in the RMG industry's SC, stakeholder theory has been used in this study. The discussion about resource dependence theory (RDT) follows in the next section.

3.12.2 Resource dependence theory (RDT)

Resource dependence theory (RDT) suggests that, in the SC, member firms should be dependent and collaborate to seek higher performance gains in the long-run instead of pursuing short-term benefits at the expense of others. According to RDT, firms are dependent on resources provided by others in order to sustain growth, as well as having other organisations that may be dependent on them (Pfeffer and Salancik 1978). One important assumption of RDT is that firms cannot be fully self-sufficient with regards to resources that are strategically critical for survival. They need to depend on resources from outside parties to compete, and carefully manage this dependency with other firms to strive for sustainable development (Heide 1994).

This theory proposes that organisations engage in exchanges with their environment to obtain resources (Pfeffer and Salancik 1978) and it is invoked to examine the direct relationship between SC uncertainties and strategic supply management (Paulraj and Chen 2007). Organisational success in RDT is defined as organisations maximizing their power (Pfeffer 1981). This theory emerged in the late 1960s and has become an influential theoretical perspective in international business research (Doh 2005). During this time, RDT has been applied broadly across the research domain to explain how organisations reduce environmental interdependence and uncertainty (Hillman, Withers, and Collins 2009). Hillman, Withers, and Collins (2009) discussed five streams of research, that is, mergers & acquisitions, joint venture, Board of Directors, political action and executive succession where RDT has been used to minimize dependences. Resource dependence argues that external

pressures—such as competition, regulation and social forces—will cause firms to seek out environmental linkages (Boyd 1990). In consideration of RDT, (Street 2007) advised to develop relationships with external organisations that have the potential to assist business development, survival and growth. This theory has been tested successfully in studies of social service agencies (Aldrich 1976), university administrative structure (Tolbert 1985), joint ventures (Pfeffer and Nowak 1976), and corporate mergers (Pfeffer 1972b). Carter and Rogers (2008) presented a framework of sustainable SCM and developed research propositions based on RDT. The author has also demonstrated the relationships among environmental, social, and economic performance within an SCM context.

Sarkis, Zhu, and Lai (2011) mentioned that one important insight from RDT was that firms lacking the required resources to attain their goals are likely to develop relationships with others in order to acquire these resources. Sarkis, Zhu, and Lai (2011) explored green supply chain management (GSCM) practices and their relationship with organisational performance based on resource dependence theory (RDT).

Resource dependence theory (RDT) centres on how some firms become reliant on others for needed inputs such as goods and materials, and how firms can manage such relationships (Pfeffer and Salancik 1978). As SC members work together closely, they often become more dependent on each other. Thus, RDT has a high level of value in the SC context (Ketchen 2007).

3.13 Justification for Adoption of the Theories in Current Research (Conceptual Framework)

The study has suggested a primary research model based on the two underlying theories as well as on the review of the applications of those theories in the SCM fields already discussed in the above sections of this chapter. Various factors, identified in studies on SCM-related fields, were also taken into consideration. The model development was done by combining stakeholder theory (ST) by Freeman (1984) with the resource dependence theory (RDT) by Pfeffer and Salancik (1978). This combination of theories was adopted in this study by following a specific research process (see section 4.4 of chapter 4) in order to develop a specific research model for improving competitiveness in the RMG sector of Bangladesh.

Competitiveness can be evaluated at various levels: product, company, sector/industry, country. Whereas competitiveness at the firm and country levels has been regularly evaluated, the role of the industry level has not received adequate attention (Momaya 1998). Not only that, but there is also no substantial number of research works on improving the competitiveness of the textile and garment industry or even on analysing the SC using stakeholder theory and resource dependence theory. But these two theories are very important especially in the SC of the Bangladeshi RMG industry in bringing together all the stakeholders and their factors to improve competitiveness.

Justification of Using Resource Dependence Theory (RDT)

RDT considers the customer and supplier relationships as important linkages for firms to reduce the uncertainty surrounding their operations (Cao and Zhang 2011; Carter and Rogers 2008). In many instances, inter-organisational relationships are essential for managing the internal and external coordination required for SCM to gain the performance outcomes (Zhu, Geng, and Lai 2010). There is also empirical evidence showing a positive relationship between resources dependency in the form of relational resources and SC performance (Yang et al. 2008). Therefore, this theory extends this line of research and is valuable in understanding inter-organisational behaviours in terms of their SCM implications. Based on RDT, SC members recognise that dependence can create patience and trust but, in a traditional SC, members try to avoid becoming dependent on others and try to make others dependent on themselves (Crook and Combs 2007). In the RMG industry's SC, Bangladesh cannot avoid dependence. Therefore, RDT is useful for creating trust and making others dependent on Bangladeshi RMG.

Justification of Using Stakeholder Theory

Stakeholder theory begins with the postulation that beliefs are necessarily and explicitly a part of doing business. This theory brings its core stakeholders together. This drives the firm forward and allows it to generate outstanding performance. What responsibility does management have to stakeholders? This pushes managers to articulate how they want to do business and, specifically, what kinds of relationships they want and need to create with stakeholders to deliver on their purpose (Freeman, Wicks, and Parmar 2004). Even though many developments and

directions for stakeholder theory exist, the basic principle is that internal and external groups will influence organisational practices (Delmas and Toffel 2004; Street 2007; Sarkis, Zhu, and Lai 2011). Harrison (1999) used stakeholder theory in social responsibility and achieved performance. Stakeholder theory gives emphasis to the two-way relationship between the firm and its stakeholders (Preble and Preble 2005) which is very important in the Bangladeshi RMG sector. Reed's (2002) research work applied stakeholder theory to increase the responsibilities of corporations active in developing countries. In a research work, Kaler (2006) addressed suitability and the validity of stakeholder theory for the purposes of business ethics. Stakeholder theory was also used by Knox and Gruar (2007) and Payne, Ballantyne, and Christopher (2005) in their research work on development relationship marketing strategy in a profit and non-profit organisation. However, although this theory has been used in various aspects of business development, it has had scarce usage in the competitiveness model.

Justfication of Adoption Theories

In the RMG industry, the firms, that is, the cutting, making and trimming (CMT)-based manufacturers, are totally dependent on buyers' wants and demands as they are not powered by their own brand: this industry is also dependent on fabrics suppliers, suppliers for the raw materials of fabrics, and some other accessories suppliers. So, resources dependency is one of the supply-side barriers. We know that there are many organisations engaged in the RMG sector that are involved in the SCs. Due to the above supply-side barriers (i.e. scarcity of raw materials and dependency), organisations are engaged in exchanges. RDT illustrates that actors facing scarcity in essential resources will seek to establish relationships with others in order to obtain needed resources (Freeman 1999). Competitiveness can be increased through minimizing dependency by using this theory; therefore, RDT has been considered in this study. In the proposed model, the stakeholder elements (country factors) can play a vital role in reducing dependency. In that case, this study has examined how elements or country factors influence the RMG manufacturers to minimize their dependency and maximize their bargaining power.

As shown in the literature review, there are many internal and external stakeholders directly or indirectly involved in the RMG industry's SC; therefore, stakeholder

theory has been used in this study. In the proposed conceptual model, the conceptualization of two influential groups, that is, political parties and bureaucrats has been drawn on the basis of stakeholder theory which may have influence on the SC. Textile SCs are basically an integrated SC (Seuring, Goldbach, and Kopline 2004). Within this chain, three levels of actors, namely, at the company level, chain level and the political or societal level were also considered. At the company level, buyers and suppliers, and at the political and societal level, the government, political parties and bureaucrats, are the actors of the RMG industry's SC. As this study is international in nature, there is a need to extend stakeholder theory into an international perspective and, therefore, buyers are one kind of international stakeholder and the others are national stakeholders. In addition to firm-to-firm relationships, it is important to include business associations (such as the BTMA), government agencies (such as EPB), trade unions, NGOs, consumer groups and individuals (Henderson et al. 2002; Knutsen 2004) in the typical SC of labour-intensive consumer goods such as the textile and garment industry in a developing nation. Considering the theoretical concepts of stakeholder theory, an attempt has been made to find out the influence of political parties and bureaucrats in improving competitiveness through the development of relationships and coordination.

As discussed previously, this current study has applied the two above-mentioned theories due to their applicability to the idea that an organisation and its stakeholders are part of the larger social system in which they operate. These theories have frequently been used in developed countries' SCM research and, more recently, in developing countries. As these theories were developed from the broader political economy theory, therefore emphasis has been placed on the government, political parties, bureaucrats and country risk as antecedent factors in measuring industry competitiveness by analysing the SC in a developing nation.

The research objectives for this study are to explore the competitiveness of the RMG industry of Bangladesh in facing the present situation after the abolition of the MFA. As stakeholder theory and resource dependence theory appear plausible in addressing this study's research questions (see chapter 1), the current study has adopted these theories to determine to what extent stakeholder theory and resource dependence theory are appropriate in the improvement of the competitiveness of the RMG industry in the context of a developing country such as Bangladesh.

3.14 Preliminary Research Model

The above literature review and the review of underlying theories have justified that the theories under consideration have sufficient applicability to garment business research.

However, this section explores the theoretical rationale behind the proposed research model for improving the competitiveness of the SC of the RMG industry in Bangladesh. Figure 3.1 portrayed the model which was developed from an understanding of two generic theories that had been defined in the conceptual framework described in section 3.13. As discussed in the above sections of this chapter, the external and internal stakeholders factors (constructs) and items used in the model drew extensively from the combination of stakeholder theory (Freeman 1984), resource dependency theory (Pfeffer and Salancik 1978) and previous literature relating to SC and competitiveness studies. The preliminary research model sought to extend these theoretical models to develop a model that would explain the external and internal factors that influence the competitiveness of RMG companies in Bangladesh, which would thus result in competitive advantage for these companies.

The model in figure 3.1 shows that the factors or constructs from external stakeholders has an impact on the dependent factors or constructs of the internal stakeholders for improving competitiveness. The model also shows two groups of constructs. The first group has two independent constructs and one dependent construct from external stakeholders. Political action (PA) and bureaucratic behaviour (BB) are the independent constructs and country risk (CR) is the dependent construct. The second group has four dependent constructs, that is, supply-side drivers (SB), supply-side barriers (SB), demand-side drivers (DD) and demand-side barriers (DB). These seven constructs are postulated to be the influencing factors in the RMG supply chain towards improving the competitiveness of the Bangladeshi RMG industry.

This study proposed that these stakeholders and their capabilities such as their behaviour, actions, and the drivers and barriers of the stakeholders in the SC would allow garment companies to sustain competitive advantage and achieve competitiveness. This was based on the combined activities and capabilities of stakeholders in the SC that produce good relationships and understanding, reduce dependency and improve competitiveness by gaining competitive advantage.

RDT (resource dependency theory) posits to reduce dependency by establishing good relationships and ST (stakeholder theory) posits to maintain good relationships with all stakeholders. Based on ST and considering external stakeholders, this study also took into account the activities of the government, their officials and opposition parties in terms of cooperation, policy making, funding, infrastructural development,

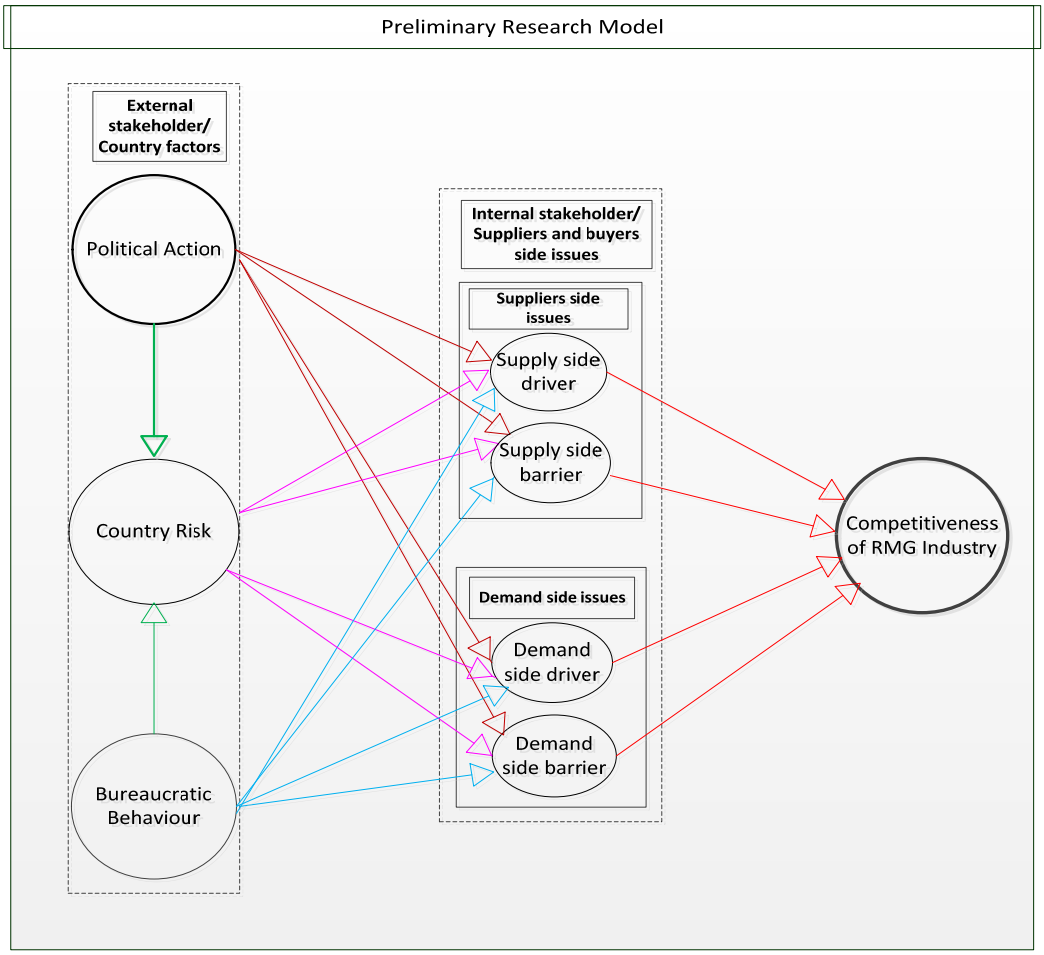

Figure 3.1: Preliminary research model

controlling, staffing and training. This study also considered the internal stakeholders, that is, the buyers' and suppliers' strengths and weaknesses as buyers and suppliers played the main role in the SC and were influenced by the activities of external stakeholders. The basic principle of ST is that internal and external groups will influence organisational practices (Delmas and Toffel 2004; Street and Cameron 2007; Sarkis, Zhu, and Lai 2011). Stakeholder theory (ST) gives emphasis to the two-way relationship between the firm and its stakeholders (Preble and Preble 2005) which is very important in Bangladeshi RMG sector. RDT considers customer and

supplier relationships to be important linkages for firms to reduce the uncertainty surrounding their operations (Carter and Rogers 2008; Cao and Zhang 2011). Therefore, the combination of these two theories supports the SC of the Bangladeshi RMG industry to gain a competitive advantage and finally to improve competitiveness.

The development of the field study has been guided by the development of this preliminary research model.

3.15 Summary

This chapter presented the previous and related literature of this current research. Since improving competitiveness is a recent phenomenon in the RMG industry of Bangladesh, the proven stakeholder and resource dependence theories can be used as a foundation for improving competitiveness among Bangladeshi garment companies. Therefore, the relevant details of the theoretical concepts from RDT and ST have been reviewed. In addition, the well-developed ST provides the basis for proposing that perceptive factors such as political action, bureaucratic behaviour and country risk affect the supply- and demand-side issues to improve competitiveness. The related literature of external and internal stakeholders and their role in the context of improving competitiveness have been discussed here. Hence, this chapter has presented a preliminary research model, based on the existing literature, which will be further improved by integrating the contextual factors.

In the following chapter, the research methodology and design for answering the research questions and achieving the research objectives are discussed.

CHAPTER 4

Research Methodology and Design

4.1 Introduction

This chapter discusses the research methodology including the process used to explore the research questions and objectives. The selection of the research methodology and design was determined by the research questions and objectives drawn in chapter 1. A sequential mixed-method (Creswell 2009) approach comprising qualitative and quantitative methods was employed as the research method in this study. The approach was adopted in order to enrich the understanding of the issues through affirmation of the conclusion, and to extend the knowledge by implementing new ways of conducting the research (Bazeley 2004).

This chapter starts with the discussion of the research paradigm, which addresses the rationale and the justification of the mixed-method approach used in the current research. The definition and research design of the mixed-method approach are then discussed. This is followed by clear descriptions of the research process. The research process included three stages that were: qualitative field study, quantitative pilot study and main quantitative survey which are explained in detail in the second section. For each stage, the sample selection, data collection and analyses techniques are presented. Finally, other issues relating to the research methodology used in this study are also discussed.

4.2 Research Paradigm

The research paradigm is the basic set of beliefs that guide action to achieve research objectives (Denzin and Lincoln Yvonna S. 2000). Within the research process, the research paradigm or "world view" (Creswell 2009) reflects how the research is designed, how data are collected and how the findings are presented. As stated by Guba and Lincoln Y.S. (1995), "[research] paradigms define for the [researcher] what it is they are about and what falls within and outside the limits of legitimate [research] ..." (p. 108). There are three major research paradigms, namely, positivism, constructivism and pragmatism that have been explored to establish the

methodological basis of a study. These paradigms can be visualized broadly as research methodologies (Neuman 2000). It is also recognised that there are three approaches, methods or concepts for research: quantitative approach, qualitative approach and mixed-methods approach (Creswell 2009; Johnson and Onwuegbuzie A. J. 2004) following the different paradigms. However, the paradigms are also known as ontological (Guba and Lincoln Y.S. 1995), epistemological (Burrel and Morgan 1979) and methodological under certain assumptions in research. The ontological assumption is related to the philosophical belief of the researcher about the nature of the reality to be investigated in the study; the epistemological assumption refers to the grounds for the knowledge and understanding that can be acquired through different types of inquiry in the research (Hirschheim, Klein, and Lyytinen 1995) and the methodological assumption is related to the qualitative and quantitative methods used to discover the reality based on the adopted paradigm (Guba and Lincoln 1994). Two additional assumptions in research are named "axiological" and "rhetorical" (Creswell 2003).

Table 4.1 presents a precise view of the research paradigms and assumptions as discussed by the above authors**.**

Table 4.1: Research paradigms

Assumptions	**Paradigms**		
	Positivism	**Constructivism/Inter-pretivism**	**Pragmatism**
Ontological Nature of reality	Naïve realism: reality is objective and singular, and apart from the researcher	Relativism; multiple, subjective, local and specific 'constructed' realities	Accept external reality; choose explanations that best produce desired outcomes
Epistemological Relationship of the research to the issue being researched	Objective point of view: researcher and the one being researched are independent	Subjective point of view: researcher and the one being researched are inseparable	Both objective and subjective points of view
Methodological Process of research	Deductive process; quantitative: experiments, surveys, hypothesis testing. Believing in realism	Inductive process; qualitative: in-depth interviews, focus groups, participant observation. Believing in idealism	Both inductive and deductive; both quantitative and qualitative (mixed method)

Sources: Adapted from Creswell (2003); Nelson (2006)

The positivism paradigm relies on the paradigm of realism where researchers assume that reality is independent from the knower (Smith 1983; Johnson and Onwuegbuzie A. J. 2004). This paradigm is associated with the quantitative research method in which hypotheses formulation is essential (Creswell 2009; Johnson and Onwuegbuzie A. J. 2004). Positivism views reality as objective, external to and independent of the researcher and involves the use of deductive logic and the testing of hypotheses with rigorous quantitative methods such as experiments, surveys and statistics (Neuman 2000; Creswell 2009): it seeks to predict and explain causal relationships among key variables (Gephart 1999).

The second paradigm in conducting research is the interpretivist or constructivist view. The interpretivism paradigm aims to develop a natural science through social interpretation (Neuman 2003). This paradigm is typically an approach to qualitative research by means of in-depth interviews, focus groups and participant observation from which the researchers develop subjective meanings of their experiences, use inductive logic and interpret the findings based on the broad complexity of the context (Guba and Lincoln 1994; Creswell 2009). It is concerned with the subjective point of view in which a phenomenon is explained through multiple explanations or realities rather than one causal relationship (Neuman 2000). The third research paradigm, pragmatism, supports the use of both qualitative and quantitative research methods based on the research questions or problems. These are more important than either the method used or the paradigm. Pragmatist researchers are free to choose all the available methods and techniques to collect, analyse and interpret the data to meet the research objectives (Teddlie and Tashakkori 2003). Thus, under the methodological assumption, the pragmatism paradigm is applicable to mixed-methods research where inquiries can be drawn liberally from both quantitative and qualitative approaches.

The focus of this research was to create an understanding regarding improving competitiveness through the management of the SC of the Bangladeshi RMG industry. This study aimed to discover the measurable and observable determinants of the RMG supply chain that could be considered in the various contexts of improving competitiveness. To adopt a paradigm and method for this study, it was imperative to focus on the research questions and objectives. The research questions

and research objectives required the definition of some of the antecedent factors (such as political action (PA), country risk (CR) and bureaucratic behaviour (BB)) or the external reality that may influence the performance of the RMG industry's SC. This research sought the improvement of competitiveness by developing the performance or efficiency of the RMG industry's SC by linking the associated antecedents and consequences for the RMG industry. The model was developed and enhanced by combining the background literature and the real-world opinions of stakeholders working in the garment industry SC. Finally, the objectives of the study required the model to be tested to determine the important predictors of SC performance in the garment industry. However, according to our previous discussion, there is a lack of relevant empirical studies and appropriate scales to measure the impact of PA, BB and CR issues in the RMG industry's SC. Therefore, the mixed-method approach in this research can help in two ways: (i) the qualitative phase can answer exploratory questions about how and which variable of PA, BB and CR is related to SC performance which will have impact on internal stakeholders' activities and performance and (ii) the quantitative phase can demonstrate that a particular variable has a predicted relationship with performance proving relevant policy implications to improve competitiveness of the industry.

Hence, to fulfil the research objectives, the method selected for this research is the mixed-method approach suggested by Creswell (2009) where combinations of qualitative and quantitative approaches are involved. The goal of mixed methods is not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both in single research studies and across studies. The pragmatism paradigm has been determined as the most appropriate philosophical world view for the research. Epistemologically, the pragmatist view can combine both subjective and objective points of view and can use both inductive and deductive logic for a better understanding of reality and to explain the findings of this research. Therefore, the pragmatism paradigm has been chosen in this study as it is the best paradigm for justifying the use of mixed-method research (Howe 1988; Tashakkorri and Teddlie 1998).

4.3 Research Methods

This research considered elements of both qualitative and quantitative methods, commonly referred to as the "mixed method" (Teddlie and Tashakkori 2003) which is as mentioned earlier, the third paradigm, pragmatism. This paradigm recommends a combination of qualitative and quantitative approaches within different phases of the research process (Tashakkori and Teddlie 1998). In this method, a qualitative research approach contributes to the quantitative research work, by identifying salient variables, facilitating the sampling design and helping to explain the quantitative findings. Johnson and Onwuegbuzie A. J. (2004) presented mixed methods as the third research paradigm in educational research and clarified some of the issues regarding mixed methods such as topology, and strengths and weaknesses of the methods as well as the research process. Creswell (2009) also argued that the mixed method approach can help to develop the survey instruments when existing instruments are not adequate. The sequential mixed-method approach comprising qualitative and quantitative methods employed in this research is much like the sequential exploratory strategy that involves all the data collection and analyses techniques imposed by both methods. It helps to explore a complex research area and then to design the survey questionnaire combining the components of background theory and the components that have emerged from the qualitative analysis (Creswell 2009). However, the research can be done by three phases under exploratory and confirmatory stages as shown in figure 4.1.

Moreover, Creswell (2009) stated that applying the mixed method approach in research will utilize the capability of data collection and enhance the validity of research measurements. This is due to the fact that each method, either qualitative or quantitative, has its own limitations. More specifically, a study followed by a single method will "inevitably yield biased and limited results" (Greene, Caracelli, and Graham 1989). Therefore, the combination of qualitative and quantitative methods would compensate for their mutual and overlapping weaknesses (Greene, Caracelli, and Graham 1989). The quantitative method, for example, provides a strong foundation for the theoretical background while the qualitative method provides real insights into real issues.

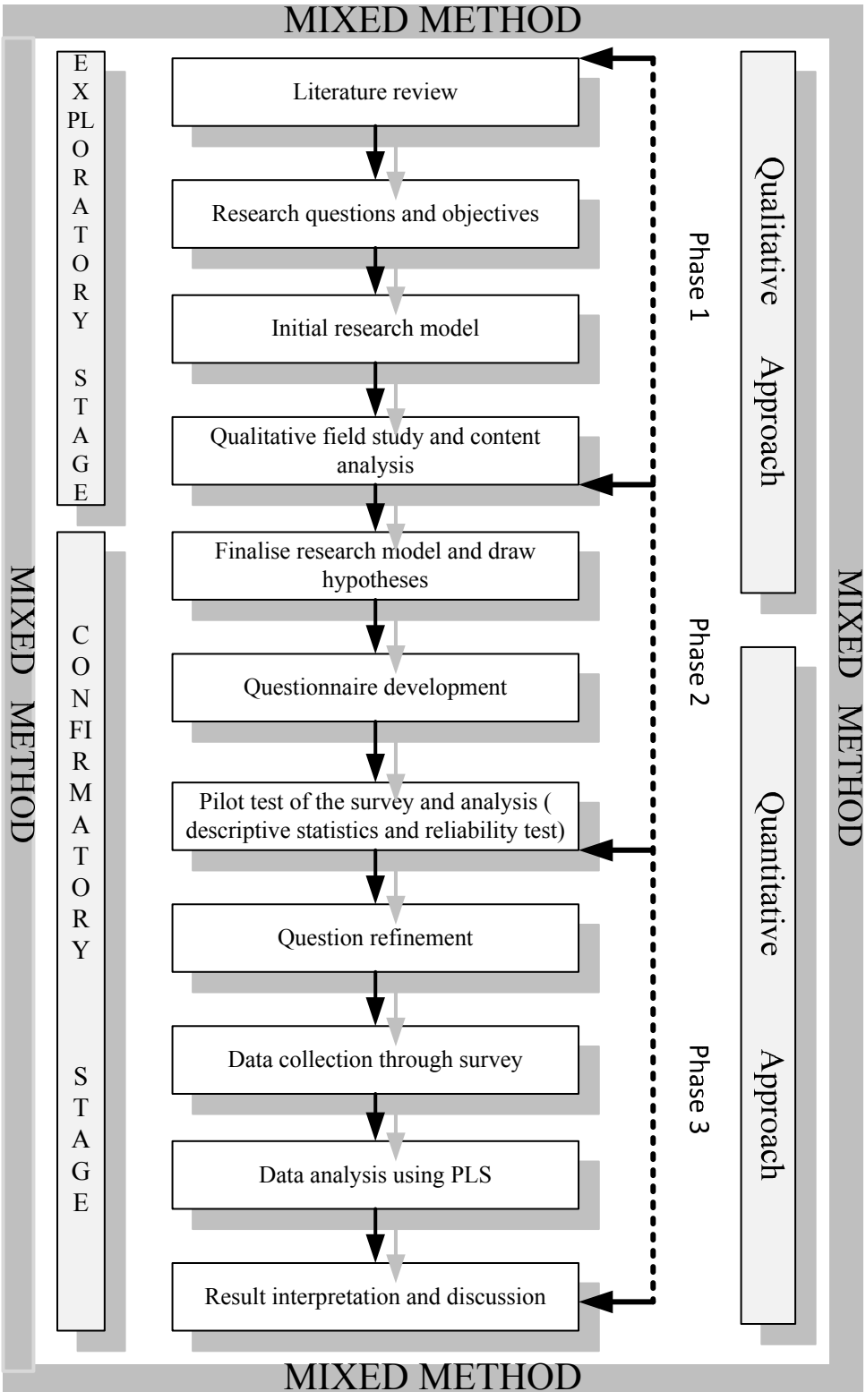

Figure 4.1: Mixed methodology

As discussed in chapter 1, the main aim of this research is to explore the factors arising from external stakeholders of the SC and the relationships among external and internal stakeholders and their activities in the RMG industry's SC. However, as highlighted in

our discussion above, under the pragmatism paradigm, the mixture of both methods is capable of strengthening research results and contributing to the competitiveness of the RMG industry's SC. Figure 4.1 therefore shows the three distinct phases of the mixed-methods research used in this study which are divided into exploratory and confirmatory stages. It shows that the process of the first phase (exploratory stage) started with a literature review that led to the development of the research questions, objectives and the development of a preliminary research model based on previous theoretical grounds and frameworks, as shown in the preliminary research model in figure 3.1. On the basis of this model, a field study was conducted on 10 RMG companies using a semi-structured interview questionnaire to collect information about stakeholders' (suppliers/manufacturers) experiences and opinions of the RMG industry's SC and their role. The results of these interviews were transcribed and analysed to extract the important construct variables that related to the RMG industry's SC and its competitiveness which were then included in developing the finalised research model by reconsidering and labelling the variables within the literature. These results then led to phase 2 (the quantitative part) for the development of constructs, measurement scales and associated hypotheses: the survey questionnaire was then developed and pre-tested. Finally, in phase 3 (continuation of the quantitative part), a survey was conducted and the results were analysed using partial least squares (PLS)-based structural equation modelling (SEM). The discussion and interpretation of these results concluded the confirmatory stage.

In the pragmatism paradigm, the qualitative phase can answer exploratory questions about how and in what way variables such as PA and BB of non-business actors in the RMG industry's SC are related to the improvement of RMG industry competitiveness. This is important for gathering information on external and internal stakeholders' activities and developing the survey instruments: the confirmatory quantitative phase can demonstrate that a particular factor has an influence over performance which is important for theory development as well as for relevant policy implications for the competitiveness of the RMG industry. Moreover, this paradigm can combine both subjective and objective points of view and can use both inductive and deductive logic for a better understanding of reality and explaining the findings (Creswell 2003; Nelson 2006). Accordingly, the objectives of the study have made it suitable to adopt a mixed-method approach (both qualitative and

quantitative) with the pragmatism paradigm determined to be the most appropriate philosophical world view for the research. Since there has been limited previous research on improving competitiveness, the research process has been divided into a number of phases and stages to collect more constructive information. The whole process used in this study is diagrammatically presented in detail in figure 4.1 and in chapter-wise form in figure 4.2.

4.4 Research Process

The research process has been carried out in three distinct phases, under two stages and two sequential approaches (figure 4.1). Figure 4.2 illustrates the overview of the research process with the 14 steps taken in conducting this research. The process started with a review of the previous literature on topics related to the SC in the clothing industry, especially in the RMG sector of Bangladesh, and various related issues such as competitiveness, influencing factors in connection with internal and external stakeholders, key concepts and gaps. This stage explored the potential key variables to develop a conceptual preliminary research model. Various printed and electronic resources such as journals, books, and seminar and conference proceedings were used to study the research field (see literature review in chapter 3).

By combining all the sources, the initial model was developed and presented for this research, as illustrated in figure 3.1. In order to test and confirm the research model, two phases of the data collection process involving qualitative and quantitative approaches (steps 4, 11 and 12) were followed. In the first phase, the qualitative approach (step 4), a field study was conducted by interviewing top-level managers of large RMG companies in Bangladesh. The interviews were transcribed and analysed using content analysis (step 4). A comparison was then made between the findings and the initial model. After this step, justifications based on previous theories and studies were analysed for each selected construct and its variables. Next, a comprehensive model for this research was proposed considering all individual models and their links according to the interview results. Based on the comprehensive model, the second phase, the quantitative approach (step11and12) was carried out by developing the hypotheses (step 8) to justify the relationship among the constructs. In the next step, items or variables for each construct were identified and a questionnaire was designed (step 10).

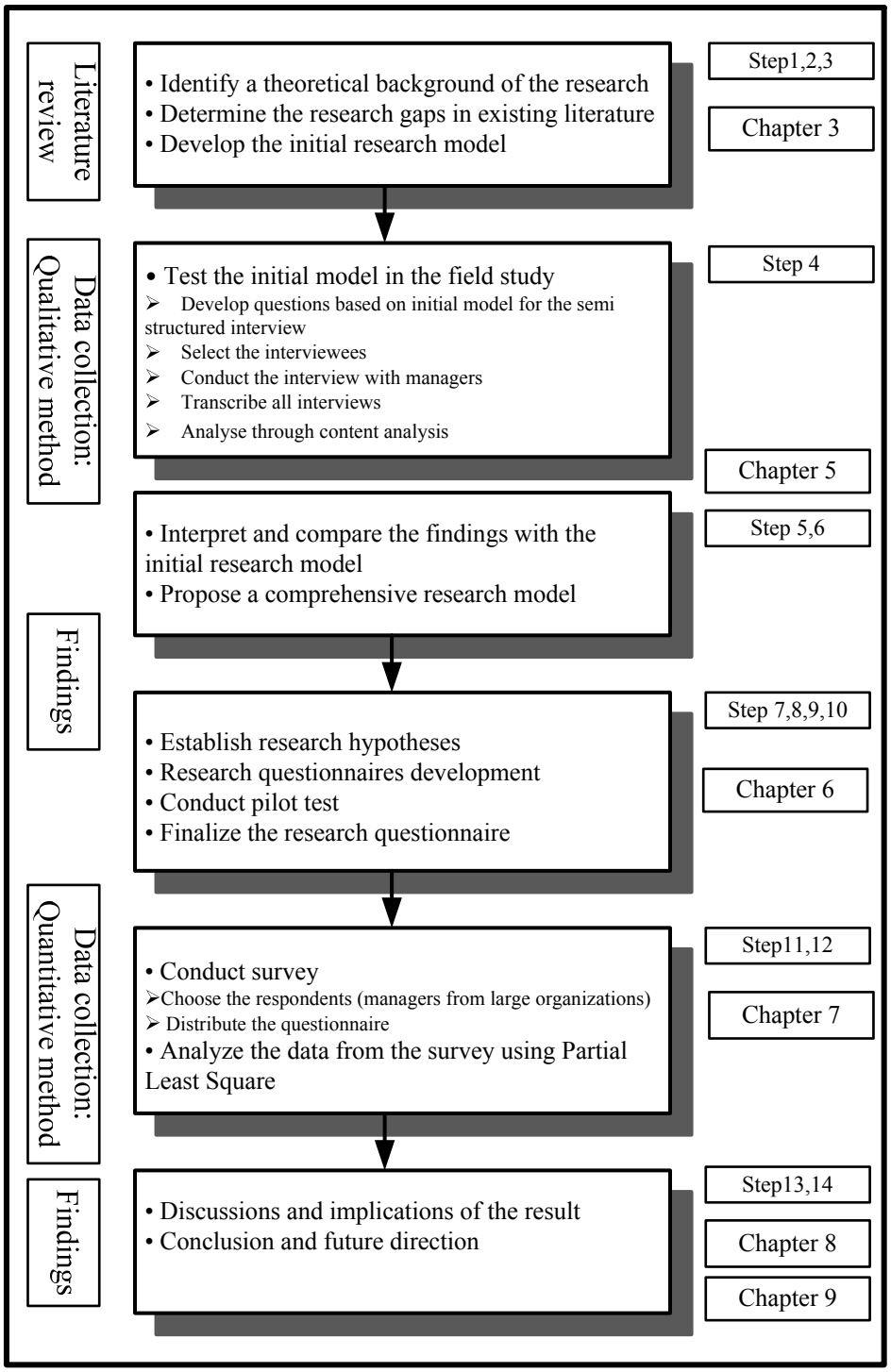

Figure 4.2: Research process

The pilot test (step 9) and manipulation check were conducted to ensure the accuracy and reliability of the research instrument.

The questionnaires were distributed for the survey among middle- and top-level managers of marketing and merchandising departments of some large and medium Bangladeshi garment companies. The two main methods of data collection used

within the two phases of the whole research process were a field study and a survey. The pilot test was also a data collection method within the process but it was done only to ensure the reliability of the research instrument. Data collected from the survey were analysed using SPSS and a structural equation modelling (SEM) technique based on partial least squares (PLS) (Chin 1998a)to test both the measurement model and structural model. Following this process, in the last step, the results were interpreted. A detailed description of this research method is described in the following section.

4.5 Qualitative Field Study Method

This phase of the study attempted to explore the phenomenon of improving competitiveness in the RMG sector to validate and enhance the constructs/factors and variables identified as part of the inclusive literature review. This phase was concerned with understanding the concept of improving competitiveness and, as the nature of this section of the research was exploratory, the qualitative method was considered to be the most appropriate. However, as recommended by Kaplan and Maxwell (1994), a better understanding of a phenomenon can be achieved by obtaining authentic participants' point of view in a particular social and institutional context. Therefore, it was believed that a 'pseudo case study' that involved a qualitative study of a small number of participants would meet the objectives of this phase of the study.

Patton (1999) and Zikmund (2000) suggested field study as an effective method to explore existent participants' perspectives in a specific setting. Qualitative field study methods permit the evaluator to study selected issues in depth and detail. Approaching fieldwork without being constrained by predetermined knowledge contributes to the depth, openness and detail of qualitative inquiry (Patton 1990). This field study required the researcher to be involved in investigating the factors influencing the RMG industry's SC, its competitiveness, and internal and external stakeholders' relationships with the aim of developing an effective SC for sustaining competitive advantage and ultimately improving the competitiveness of the Bangladeshi RMG industry. The qualitative approach used in this study was the semi-structured interview.

As stated by Patton (1990) "the purpose of interviewing is to allow us to enter the other person's perspective". The interview participants selected for this study were based on three criteria: the position of the participant, the availability of the participant and the location of the organisation. The selection of all interviewees was based on personal contacts or the convenient sampling procedure (Babbie 1990). Participants were given a copy of the interview questions with a detailed information sheet about the study objectives and their role in the study. All participants took part in this study voluntarily. The general interview guide approach was used to collect data through open-ended interviews (Patton 1990). A semi-structured interview was employed where a list of questions were developed to explore the variables of the study (PA, BB, CR, suppliers' drivers and barriers, and buyers' drivers and barriers) within the SC of the RMG industry. The questions were pilot tested after which minor adjustments were made. In total, 10 interviews were conducted. Each interview lasted for about one to two hours. With the permission of the interviewees, each interview was recorded by a tape recorder and notes were taken during the interview as well. The transcription of the interview was done on the same day or the day following the interview. Forty pages of interview transcripts were produced from the 10 interviews conducted in this stage and were used for analysis. The technique used to analyse the interview data was content analysis (Berg 2001; Thomas 2003). Ten individual models were developed for each of the interviews and all these models were then combined to produce a modified research model where a few changes were made (demonstrated in chapter 5, figure: 5.13).

4.6 Quantitative Study Method

The initial research model was developed on the basis of the literature review (see fig.3.1). After developing that research model and undertaking the qualitative field study, the next phase involved the confirmation or rejection of the factors and variables and establishing the linkages among the constructs. This second phase of the research aimed to find the important factors and variables affecting the improvement of competitiveness which was reflected in the competitiveness model developed prior to this phase. A number of hypotheses were derived from the model with these subjected to empirical testing that focused on verifying or falsifying these hypotheses (Anderson 1987). Since the methods used in this phase were designed to be detached and independent of the specific situation under study, a quantitative

method was considered to be most appropriate. Furthermore, the sample size was large and spread over a wide geographical location. Therefore, the survey method was considered most appropriate for this study and a questionnaire-based survey was adopted.

4.6.1 Developing the questionnaire

The structure of the questionnaire took a considerable amount of time. Based on the comprehensive research model, a questionnaire was developed and designed to explore the important factors and to test the relationships among the constructs. In designing the survey, this study adopted closed-ended questions.

A 6-point Likert scale questionnaire was intended to measure the factors and variables of the final competitiveness model defined at the earlier stage. These types of scales have been subjected to academic debate in several studies. Jöreskog (2005) claimed that the Likert scale is an ordinal variable in essence due to the fact that it has origins or units of measurement, its distribution is discrete, and it does not have values between numbers. In practice, however, it is reported that during the past 15 years, the application of SEM has mostly relied on the Likert scale (Byrne 2008) and similarly, it has been adopted in this research. The researcher debated over the optimal number of scale points to use. (Hair, Money, and Samouel. 2007) stated that the two choices were between using an odd or even number of numbers in selecting scale categories. Many studies have used a 7-point Likert scale which has a central 'neutral' point. This type of scale is used when, based on the experience or judgment of the researcher, it is believed that some portion of the sample is likely to feel neutral about the issue being examined. Nonetheless, (Mattel and Jacoby 1972) advised to either not use or use the neutral point when the scale consisted of many points. Furthermore, avoiding the central tendency error of respondents is another reason to use a 6-point scale. Central tendency error is observed when respondents answer a middle choice 'neutral' or 'neither agree or disagree' when that is not really their intention. In addition, the choice of a 6-point Likert scale was also based on the study by Fong (2005) that anticipated that participants of Asian ethnicity tended to choose the middle score or to be non-partisan in their responses as this phenomenon was regarded as producing a non-attractive research result (Fong 2005). As the study was done in Bangladesh which has an Asian culture, the study used a 6-point Likert scale.

4.6.2 Pre-testing the questionnaire

In the quantitative survey process, a pre-test was conducted to identify any problems with the survey instrument prior to administering the actual survey. The pre-test process took a convenient sample of 10 middle- and top-level managers representing three garment companies but based in one head office. The objective of the pilot study was not to run the model but rather to examine the descriptive statistics using SPSS and to determine whether respondents found difficulties in understanding any of the items or to see if they preferred the survey to be presented in a different style. The process allowed time for each participant to complete the survey and requested them to record the time taken. A follow-up interview was conducted with each participant to identify any weaknesses in the instrument. The questionnaire was then finalised by making several changes after participants' opinions were obtained regarding the meaning and clarity of the questions.

4.6.3 Sample selection and quantitative data collection

In this study, the survey was conducted among more than 70 RMG companies in Bangladesh. The companies were selected based on their geographical location especially those which were located in the city of Dhaka and nearby. Moreover, only garment companies which were members of Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and which were 100% export-oriented were selected (www.bgmea.com.bd). The survey questionnaires were distributed to 580 managers in the middle- and top-level management positions of the marketing and merchandising departments within these companies by personally contacting the respective person or via the human resource (HR) department managers (in some cases, employees working in HR were contacted). A number of questionnaires were given to the HR department to distribute among the managers working in their company within those two above-mentioned departments. The survey instrument together with the covering letter explaining the purpose of and instructions for the survey were sent to the identified contact persons. The main task of the contact persons was to distribute the questionnaires to the target sample across departments. They were also expected to collect the questionnaires upon their completion from respondents. Sometimes, direct contact occurred with the respective contact persons by telephone and email some selected garment companies and a soft copy of the questionnaire was sent to them. Thus, a purposive and cluster sampling procedure

was applied in this study (Creswell 2003; Malhotra 2004). The study questionnaire was divided into four sections (see appendix-3)

a. Demographic information about the participants and their organisations;
b. Questionnaire about the influence of external stakeholders in the RMG industry's supply chain;
c. Questionnaire about the influence of internal stakeholders in the RMG industry's supply chain; and
d. Questionnaire about improving competitiveness of the RMG industry.

The total response rate was 50.77% which was considered adequate for analysis and reporting (Babbie, 1990) with 253 survey responses returned to the researcher. Of the 70 companies, 21 did not participate in the survey. Moreover, from the 580 questionnaires distributed, 227 were unreturned. However, as PLS was used to analyse the main survey data, the sample size was appropriate. A number of authors have declared that PLS is suitable for small sample studies (Barclay, Higgins, and Thompson. 1995; Gefen, Straub, and Boudreau 2000). A rule of thumb to determine the proper sample size for PLS analysis is 10 times the number of items in the model (Barclay, Higgins, and Thompson. 1995; Chin 1998). As is shown in chapter 5(figure-5.14) , the number of items in the final research model was 56; thus, 560 (56 x 10 = 560) was an appropriate sample size for this study. In terms of the number of cases, the guidelines in PLS analysis have stated that the sample should have at least 10 times more data points than the number of items in the most complex formative constructs in the model (Gefen, Straub, and Boudreau 2000). In this regard, 580 samples was a suitable number in this research but the low response rate among top-level managers and executives was also taken into consideration when selecting the sample size.

The first round of survey packages was sent out in mid-April 2012. The researcher was physically involved in this first round. Respondents were given ample time of two months to complete the survey. After one-and-half months, a total of 131 completed responses were received (first wave). In an attempt to boost the response rate, follow-up phone calls and email contact were made with the contact persons. This process resulted in a further 72 managers and executives responding with completed surveys within two months of the reminder (2^{nd} wave). At this point, around mid-June 2012, the survey had generated 203 responses. This figure gave a response rate of approximately 40.84%. For this third time, the decision was made to

pay visits to the contact persons of the companies in an attempt to further improve the response rate. Therefore, further telephone calls were made and emails consisting of reminder letters were sent to the contact persons and it was agreed to give respondents another three weeks to respond. This desperate move was made based on the earlier understanding that a minimum response of 300 was needed in order to yield a good result from the PLS data analysis procedure. Finally, after about 4-5 months of continuous process, the total number of returned questionnaires was 253 which gave a relatively high and acceptable response rate of 50.77%.

The data from the respondents were immediately put into an MS Excel spread sheet as input. The raw data showed some missing values meaning that respondents either refused to answer or overlooked the question. Either way, data were examined closely for the analysis stage. Responses deemed to be invalid or incomplete were rejected from the analyses. Three questionnaires had to be rejected due to invalid responses: this included respondents who did not fill in their demographics information and some had some missing answers. However, finally, the survey yielded 253 effective and accepted responses, excluding the three questionnaires with missing data.

4.6.4 Quantitative data analysis

In this research, data analysis for the quantitative phase was done by utilizing the structural equation modelling (SEM) approach (Chin 1998; Gefen, Straub, and Boudreau 2000). SEM techniques such as linear structural relationships (LISREL) and partial least squire (PLS) are second generation data analysis techniques; either of these can be used to test the variables/factors affecting the competitiveness of the RMG industry or to test the research model of this study. SEM also enables "researchers to answer a set of interrelated research questions in a single, systematic and comprehensive analysis by modelling the relationships among multiple independent and dependent constructs simultaneously" (Gefen, Straub, and Boudreau 2000). The PLS technique with causal modelling works by "simultaneously assessing the reliability and validity of the measures of the theoretical constructs and estimating the relationships among these constructs or variables" (Barclay, Higgins, and Thompson. 1995). The PLS technique is more efficient in testing complex and sophisticated conceptual models. PLS-SEM is a causal modelling approach aimed at maximizing the explained variance of the dependent latent constructs (Hair, Ringle, and Sarstedt 2011).

Moreover, PLS is better suited for causal modelling when the sample size is relatively small and when the model is complex (Hulland 1999; Teo, Wei, and Benbasat 2003). The literature review and field study had produced a complex theoretical measurement model; therefore, PLS became the ideal data analysis method for this study. It was evident that the ability of PLS to model latent constructs under non-normality conditions and small sample sizes has made it popular among researchers in recent years (Compeau and Higgins 1995; Chin 1998). PLS is more appropriate when the measurement items are not well established and are used within a new measurement context (Barclay, Higgins, and Thompson. 1995). Furthermore, PLS is suitable when the primary objective of the research is the explanation of the model variance for one or more constructs and when the research focus is on theory development. Since the existing literature on improving competitiveness in the RMG industry via analysing the SC was very limited, the proposed research model in this research was also not based on strong theory. The model can be observed as an estimate model that combines a relevant theory and previous empirical research findings. Thus, the concentration of this research was more on the forecast of application and theory building, rather than testing the suitability of a strong theory-based model. In addition to its capability of handling formative as well as reflective indicators and constructs, one of the greatest advantages of adopting PLS was that LISREL can only be used to measure latent variables that use reflective items (Chin 1998). As this study would include both formative and reflective items, PLS was the best option for data analysis (Fornell and Bookstein 1982; Gefen, Straub, and Boudreau 2000).

In view of the above-stated features and advantages, PLS was considered as the most appropriate data analysis technique for the quantitative part of this study. This study thus used PLS to establish the relationship between constructs and thus to test the hypotheses. As such, the data collected in this study were analysed with the PLS technique utilizing the PLS-Graph version 3.0 computer software developed by Chin (2001) (www. en.softonic.com/s/pls-graph-3.0).

4.6.5 Partial least squares (PLS) data analysis procedure

Two distinct stages are involved in the data analysis procedure via the PLS technique. The two stages are: i) assessment of the measurement model and ii) assessment of the structural model. These have been illustrated in tables 4.2 and 4.3. The following section describes how the competitiveness model was tested and

evaluated in these two stages as identified by Barclay, Higgins, and Thompson. (1995) using the PLS technique.

4.6.5.1 Stage 1: Assessment of measurement model

The assessment of measurement model stage is concerned with the relationships between the observed variables or items and the constructs (Igbaria, Guimaraes, and Davis 1995). The analysis of the measurement model leads to the calculations of loadings that provide the researcher with an indication of the strength of the measures. This assessment is also concerned with the construct validity. Reflective measurement models should be assessed with regards to their reliability and validity (Hair, Ringle, and Sarstedt 2011). This stage involves the assessment of reflective items examining convergent validity and discriminant validity. The examination of the indicators' weight and multicollinearity are involved in the assessment of formative items. We must distinguish between reflective and formative measurement models to evaluate them (Henseler et al. 2009).

Table 4.2 shows the two-step procedure undertaken in the first stage of the measurement model assessment in this study: the following sections will discuss the details of the steps.

Table 4.2: Stage 1 (assessment of measurement model)(Hair et al.2011)

Type of Items in the Construct	**Type of Measurement**			**Assessment Procedure/ Acceptable Value**
Reflective	1.Convergent validity	i) Item reliability(loading)		Item loading ≥ 0.5 and significant t- value
		ii) Internal consistency	Composite reliability	Calculated value ≥ 0.7
			Average variance extracted (AVE)	Calculated value ≥ 0.5
	2.Discriminant validity	i) Construct level		AVE analysis: square root of the AVE of construct > correlation between the construct and other constructs
		ii) Item level		Cross-loading matrix: loading of items under a construct > all other cross item loadings under the constructs
Formative	1. Inward weight	Item level		Indicators' weight (relative importance), loading (absolute importance) and significant t- value
	2. Multicollinearity	Item level		Variance inflation factor (VIF) ≤ 10

Assessment of reflective items

Convergent validity:

The first step of the assessment of the measurement model is to test its convergent validity. Convergent validity actually measures the correlation of items in a single construct. This is accomplished by examining individual item reliability (item loading) and internal consistency for the reflective items. Item reliability assessment refers to an analysis estimating the amount of variance in each individual item's measure that is due to the construct (Barclay, Higgins & Thompson 1995). The PLS assessment procedure is conducted by conducting simple correlations of the measures with their respective construct. The calculated correlation leads to an item loading which gives an indication of the item's strength. Researchers have different opinions on the assessment of the item loading's strength but the rule of thumb is that the higher the item loading, the better it represents its constructs. While item reliability refers to a measure of items against their constructs, internal consistency is referred to as the measure of reliability of the constructs (Fornell and Larcker 1981). Many quantitative researchers had been using Cronbach's alpha as a measurement for internal consistency (Bruhn, D., and K. 2008). Fornell and Larcker (1981) have suggested two types of measurements for assessing internal consistency: (a) composite reliability and (b) average variance extracted (AVE). Composite reliability checks the internal consistency of a construct and AVE indicates the amount of variance shared between a construct and its measures/items.

The minimum requirement for item reliability is 0.5 (Chin 1998). Hair et al. (1998) have provided guidelines for using item reliability to assess the relative significance of constructs and suggested three types of significance level for item loadings with loadings in excess of 0.5 considered to be very significant. The most frequently cited rule of thumb in the literature, provided by Carmines and Zeller (1981), suggests retaining only those items with loadings greater than or equal to 0.7. Hair, Ringle, and Sarstedt (2011) also suggested indicator loading should be higher than 0.7. But to provide more robust and reliable findings, the more conservative of Hair et al.'s (1998) assessment guidelines were chosen for this study which has taken a stand by having item reliability rules of 0.5, the value proposed by Hair et al. (1998). This approach was considered more practical, given that the competitiveness-related study was exploratory and very few studies in the literature had investigated factors

affecting the SC that led to improved competitiveness of the industry. Therefore, reflective items with loadings less than 0.5 were not considered in this research: for measuring internal consistency, the composite reliability and AVE were 0.7 and 0.5 respectively (Fornell and Larcker 1981; Hair, Ringle, and Sarstedt 2011).

Discriminant validity:

The second step of the assessment involved the reflective items being tested by the measurement of discriminant validity. This was assessed by applying two analytical procedures suggested by Barclay, Higgins and Thompson (1995). Firstly, the square roots of the AVE of the items were calculated and these values were compared with the inter-construct correlation. Barclay, Higgins and Thompson (1995) specified that discriminant validity is achieved when the square root of the AVE of a construct is larger than its correlations with other constructs. Secondly, the matrix of loadings and cross-loadings of items was generated. Gefen, Straub, and Boudreau (2000) stipulated that the loading of an item within the construct it intends to measure must be higher than its loading with any other construct. The cross-loading analysis in PLS measures the correlation of an item with respect to all of the constructs in the model, including the construct it intends to measure (Chin 1998). The two techniques examine the extent to which a construct differs from other constructs. The goal of discriminant validity is to ensure that all the constructs are mutually exclusive. However, the PLS-Graph 3.0 software used in this study does not produce these statistics. Thus, the researcher had to manually calculate the output produced by the software using another statistical software package, namely, SPSS version 21 for Windows.

Assessment of formative items

Convergent validity and discriminant validity could not be applied as the formative items were not correlated. Instead, indicator weight, which describes the relative importance of each item towards the formation of the construct, was calculated. The goal was to ensure that each item contributed towards the construct's formation. For items that had a very low indicator weight, the items' contributions towards construct conceptualization were reviewed. As recommended by Diamantopoulos and Winklhofer (2001), conceptual considerations were prioritized before any indicator was eliminated. Next, multicollinearity was tested by calculating the variance inflation factor (VIF). This was to ensure that each indicator had distinct

influence on the intended latent variable (Diamantopoulos and Winklhofer 2001). The maximum threshold for the VIF is 10 (Kleinbaum et al. 1998). If items failed to meet the requirements of multicollinearity, they were eliminated.

The measurement model was assessed and adjusted by eliminating outstanding items. This was done repeatedly until the requirement for each criterion of convergent validity and discriminant validity was achieved. In addition, for the formative indicator, both indicator weight and multicollinearity were tested to delete problematic formative items. The result of these rigorous procedures was an assessment model that could be applied in the second stage.

4.6.5.2 Stage 2: Assessment of structural model

The second stage (table: 4.3) involved the assessment of the structural model. The structural model comprised the hypothesized relationships between latent constructs in the research model (Santosa, K.Wei, and Chan 2005; Azizah 2011). The first step was the assessment of the explanatory power, that is, R^2 of the independent construct of the proposed model. This was done by estimating the variance associated with the constructs. The result determined the variance of the RMG companies' competitiveness in using an effective SC: this could be explained by the constructs in this model. The second step was to examine the direction of the path coefficient and the value of *t*-statistics (Barclay, Higgins, and Thompson. 1995; Santosa, K.Wei, and Chan 2005)

Table 4.3: Stage 2 (assessment of structural model)(Hair et al.,2011)

Type of Items	Type of Measurement	Assessment procedure/ acceptable value
Reflective and Formative	Coefficient of determination	$R^2 \geq 0.1$
	Test of hypotheses	Significant *t*-value≥1.65

The competitiveness model consisted of seven independent latent variables and one dependent variable. The independent variables were: political action (PA), country risk (CR), bureaucratic behaviour (BB), supply-side drivers (SD), supply- side barriers (SB), demand-side drivers (DD) and demand-side barriers (DB), and the one dependent variable was competitiveness(COM). The structural relationships were tested using the SEM approach, which is illustrated by the five-step procedure in table 4.4. The predictive power of the proposed research model could be assessed by obtaining the R^2 values (Hair, Ringle, and Sarstedt 2011; Santosa, K.Wei, and Chan

2005). This represented the extent to which the independent constructs explained the dependent constructs. Interpreting the values of R^2 in the PLS model is the same as explaining the R^2 values produced by multiple regression analysis (Barclay, Higgins and Thompson 1995). Therefore, R^2 values would determine the exploratory power of a component of the model by indicating the amount of variance in the construct explained by its corresponding independent construct. The values of the construct produced by the bootstrap method would allow for assessment of the model's explanatory power (Chin 1998). The well-accepted value of R^2 is 0.10 or above (Rai, Patnayakuni, and Seth 2006). Falk and Miller (1992) also proposed that the minimum value of R^2 should be 0.10.

The next test was to evaluate the relationship of the construct as hypothesized in this research. The statistical analysis was evaluated by assessing the path coefficient and the *t*-value. The bootstrap method (using PLS) was used in testing the structural paths in the competitiveness model. This was accomplished by estimating the value and significance of every path coefficient of the model. The path coefficient and the *t*-value are derived from the bootstrapping procedures. This procedure is a non-parametric test of significance that produces *t*-statistics to evaluate the significance of the structural paths.

Finally, the hypotheses outlined in chapter 6 were tested. The path coefficients and the positive or negative values of the hypothetical relationships were calculated. The goal was to determine the constructs that were significant in the model.

Table 4.4: Four-step assessment procedure of structural model

Step	Procedure
1	Collect standard path loadings
2	Test significance of path loadings
3	Produce R^2 values
4	Revise the model where feasible

4.7 Summary

This chapter has provided details of the research process and the philosophical and methodological approaches undertaken throughout the research. In comparing the current trends of research approaches that have been used within the SC and competitiveness fields, this chapter has mentioned an appropriate research approach, that is, the mixed-method approach (both qualitative and quantitative) selected to guide this particular research. The pragmatist paradigm was determined to be the most appropriate philosophical world view for the research. This chapter also presented the systematic overview of the research process and tools that were used for this research.

In summary, the research process was as follows. After the literature review and formation of the initial research model, the qualitative field study was conducted to refine the conceptual model with real-life contextual perspectives. Middle- and top-level managers from ten large organisations were interviewed. The qualitative data analysis involved the two-stage approach recommended by Miles and Huberman (1994). This was followed by the formulation of the survey instruments. The survey instruments, including the questionnaire, were developed and pre-tested through a pilot survey on 18 respondents**.** The refined instrument was then used in the survey for quantitative data. The quantitative data analysis process utilized the PLS-based SEM technique. In this chapter, the PLS data analysis procedures for the measurement model and structural model were discussed in detail.

The literature review and the formation of the initial research model were the first phase of the research process, which was described in chapter 3. This chapter has continued with descriptions of the three subsequent major stages comprising the field study, pilot study and national survey. Details of sample selection, data collection and data analysis for each stage were also presented. In the next chapter, the operation of the second phase of the research, the qualitative field study including the results of data analysis, will be discussed. Chapter 5 will then conclude with the description of the final comprehensive research model that was tested in the final survey.

CHAPTER 5

Field Study Analysis and Development of a Comprehensive Research Model[3]

5.1 Introduction

The previous chapter described that a mixed-method approach had been chosen for this study. Mixed method describes the combination of qualitative and quantitative methods. A field study was therefore conducted for the qualitative part and, along with the analysis of the data collected, is presented in this chapter. The field study was carried out through semi-structured interviews with 10 top- and middle-level managers of the marketing and merchandising departments of leading garment factories from the Bangladeshi garment industry. The primary goals of this phase were to confirm the various constructs and sub-constructs that were identified in the literature review as well as to discover the significant new sub-constructs and variables. The qualitative approach was performed so that the results of the field study could be utilized to refine and fine tune the initial model proposed earlier (as shown on figure 3.1). The outcomes of this phase helped to develop the final research model to be used in the quantitative part of this study to develop the survey questionnaire.

[3]Part of this chapter has been presented at the following conferences:

Nuruzzaman, M. (2012), "The Competitiveness and Supply Chain Management of Ready-Made Garment (RMG) Industry in Developing Nations", *In proceedings of The 7th Biennial Conference of Hong Kong Economic Association*, December 13-14, Lingnan University, Hong Kong.

Nuruzzaman, M., Quaddus, M. and Jeeva, A. (2012), "An Investigation into the Factors Influencing Competitiveness of Ready-Made Garment (RMG) Supply Chain- The Experience from Bangladesh", *In proceedings of Annual Conference on Global Economics, Business and Finance (GEBF)*, December 15-17, Hong Kong.

Nuruzzaman, M., Quaddus, M., Jeeva, A. and Khan, E. Ahmed (2013), " The influence of External Stakeholder in the Competitiveness of Ready-Made Garment (RMG) Industry: A study on RMG Supply Chain in Bangladesh", *In proceedings of the Business & Economics Society International Conference (B&ESI)*, January 7-10, Perth, Western Australia

Nuruzzaman, M., Quaddus, M. and Jeeva, A. (2013), " Improving Competitiveness and the Role of Stakeholders in Ready-Made Garment(RMG) Supply Chain of Developing Nations: A Qualitative Approach to develop a comprehensive research model" *In proceedings of the American Canadian Conference for Academic Disciplines,* International Journal of Arts and Sciences, May 20-23, Ryerson University, Toronto, Canada.

5.2 Operational Overview of the Field Study

5.2.1 Qualitative research paradigm

It was stated earlier that the first phase of the study was undertaken through a field study using the qualitative research method to explore the SC of the RMG industry in Bangladesh. The field study carried out as a qualitative research process is discussed in detail in the following subsections. The findings of the field study were used to refine the research model and prepare the survey questions for the quantitative study in the second phase of this research.

5.2.2 Interview questionnaire development

A semi-structured interview approach was adopted for the field study in the qualitative part of this research. This interview approach is an exchange between the researcher and the participant and is like a conversation. The researcher here should not dominate the conversation as the purpose is to provoke the views of the participant (Jennings 2010). The literature review helped to develop an initial model and to create a framework for the initial development of the interview questions.

Taking into consideration the initial proposed model, eight questions were designed and developed for the field study to cover the main topics of the research. As the qualitative method was used to provide real-world insights, the development of interview questions was considered very important. Table 5.1 presents the topics with the respective relevant question.

The first topic reveals the present status of the RMG industry and its competitiveness. This topic also explores influential stakeholders and the industry's SCM. Under this topic, question 1 was developed to reveal some new constructs or variables which could be considered to increase competitiveness. The last topic explores the influence of external stakeholders or non-business actors in SC competitiveness. Questions 6, 7 and 8 were developed for this purpose. In question 6, interviewees were asked to describe their understanding of the concept of political action (PA) and its influence on the SC of the garment industry. Through this question, the role of ruling parties (government) and opposition parties were discussed in relation to SC development.

Table 5.1: Issues and related questions in the field study

Main topic	Question no.	Brief concept acquired through the question
Constructs and variables influencing the whole process, i.e., to increase competitiveness	1	Present status of SC of RMG industry Influential stakeholders in the SC Issues or variables that should be considered to increase competitiveness
Business factor, i.e., internal stakeholders of SC	2 3 4 5	Buyers' strengths and weaknesses, i.e., buyers' drivers and barriers Garment manufacturers 'or suppliers' strengths and weaknesses, i.e., suppliers' drivers and barriers
Non-business factors or country factors, i.e., external stakeholders of SC	6 7 8	Role of government, opposition parties and their political action Role of bureaucrats Creation and effect of the country risk

As with previous questions, this question was developed to discover some new variables. Questions 7 and 8 were developed in relation to bureaucratic behaviour and country risk. Similarly, these questions were designed to examine these constructs' influence on the competitiveness of the SC and the various aspects of their dimensionality. Based on respondents' feedback, various issues related to the SC were obtained from the questions. The outcomes of the literature review were then revised and combined with feedback from the qualitative phase. Consequently, the quantitative phase approved the significance of the accepted constructs. The qualitative and quantitative phases, known as the mixed method of research in exploratory studies, were used in the order which has been widely supported by past researchers (Muthusamy 2011; Mustamil 2010; Xu 2003).

A complete set of questions for the field study can be found in appendix- 2. It is noted that these questions were subjected to Curtin University's ethical requirements. The interviews were conducted with 10 top-and middle-level managers from large Bangladeshi RMG manufacturers. These 10 successful interviews were taken into consideration for qualitative analysis.

5.2.3 Sample selection

In this research, convenience sampling was employed rather than random sampling (Jennings 2010). Convenience sampling based on personal contacts was applied. Ten managers from top- and middle-level management were chosen to be interviewed

with their selection based on personal contacts. Participants were provided with a copy of the interview questions which included a separate information section. They were invited by mail and telephone to participate in the field study.

Prior to the interview, participants were well briefed on the objectives of the research and its significance. It was also explained that their participation was fully voluntary and all information would be kept confidential.

The interviews were recorded with the permission of participants and photographs were taken during the interviews. After the interview, the qualitative data were transcribed as soon as possible. As the interviews were conducted mainly in Bengali (the language of Bangladesh), appropriate attention was given during the data transcription to maintain the participants' original meaning.

Participants took part in this study voluntarily. The following table- 5.2 illustrates the field study interview participants' profiles and that of the organisations for which they worked.

Table 5.2: Field study interview participant's profiles

Participants	Position	Nationality	Organisation	Nature of business	Ownership
P1	Managing Director	Bangladeshi	Organisation 1	Manufacturing Garments	Private
P2	Director	Bangladeshi	Organisation 2	Manufacturing Garments	Private
P3	General Manager	Bangladeshi	Organisation 3	Manufacturing Garments	Private
P4	Country Manager	Bangladeshi	Organisation 4	Manufacturing Garments	Private
P5	General Manager	Bangladeshi	Organisation 5	Manufacturing Garments	Private
P6	Deputy Managing Director	Bangladeshi	Organisation 6	Manufacturing Garments	Private
P7	Manager	Bangladeshi	Organisation 7	Manufacturing Garments	Private
P8	General Manager	Bangladeshi	Organisation 8	Manufacturing Garments	Private
P9	General Manager	Bangladeshi	Organisation 9	Manufacturing Garments	Private
P10	Managing Director	Bangladeshi	Organisation 10	Manufacturing Garments	Private

5.2.4 Data collection

In the qualitative phase, the data were collected through interviews. To collect relevant qualitative data in this study, a semi-structured interview questionnaire was chosen. Taking into consideration the initial proposed model, eight open-ended questions were developed as discussed previously.

The interviews were scheduled at participants' convenience to avoid or minimize any disruptions and interruptions in their working schedule. Before starting the interview, a brief description about the research study was presented to the participants as they were requested to participate in an interview session in a specific time. Some participants took the questionnaire in advance for preparation and gave the researcher a specific date and time for the interview. The duration of each interview session was approximately one to two hours. From the 10 garment companies, a total of 10 interviews were successfully conducted: it was observed that participants were at ease, welcoming and helpful. They answered all questions with as much valuable information as they could provide according to their knowledge and experience. This was due to the fact that they had been contacted through personal relationships.

Moreover, fruitful discussions were observed during the session where the interviewer managed to extract some information that had not been pre-defined in the questions. This may be due to the fact that most participants were aware of the subject matter and were totally involved in the RMG business. The interviews were recorded with the permission of participants and photographs were taken. After each interview, the qualitative data were transcribed as soon as possible to ensure trustworthiness (Saunders, Lewis, and and Thornhill 1997). As the interviews were conducted mainly in Bengali, appropriate attention was given during the data transcription to maintain the participants' original meaning. The verbatim transcriptions of all of the recorded interviews were immediately completed for data analysis to ensure accurate data from participants' discussions, body language and other cues (Merriam 1997).

5.2.5 Data analysis

More than 50 pages of interview transcripts were developed for qualitative analysis after the field study. A sample of one transcript has been included in appendix-5. The content analysis technique was adopted to examine and analyse the qualitative data (Berg 2001; Thomas 2003). This technique was adopted to also determine the relationship between the concepts, the interview data and the theoretical framework (Siltaoja 2006). It was used not only for that purpose but also to scrutinise the transcripts and determine key constructs, variables and the link between the constructs. Figure 5.1 shows this study's content analysis procedure.

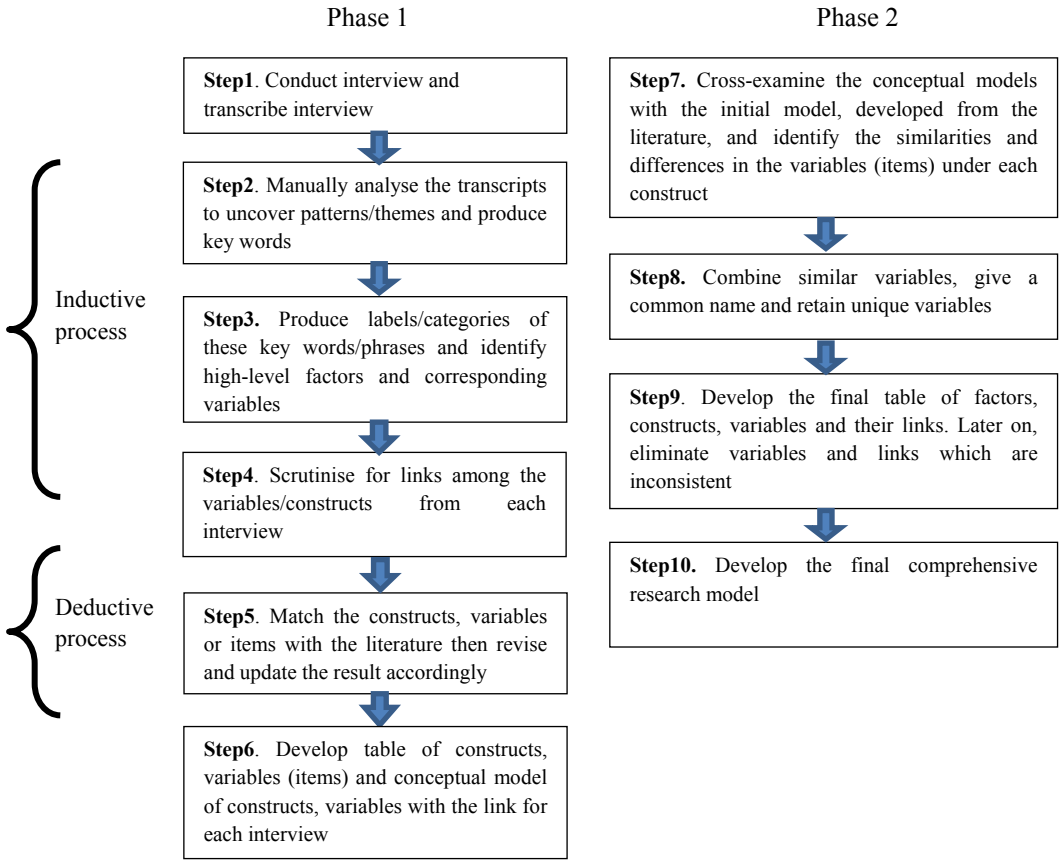

Figure 5.1: Data analysis process of the field study (Azizah, 2011; Muthusamy, Gunasegaran. 2011)

There were two phases of content analysis in this study. A combination of inductive and deductive processes was carried out (Berg 2001) through the two phases using various methods of content analysis. Both these phases were applied to extract and classify the sub-constructs and variables. Phase 1 involved the analysis of all individual verbatim transcripts to explore the key themes/patterns subsequently

identifying themes by using key words. High-level constructs were then identified the links among the sub-constructs were scrutinised, the constructs were matched and the conceptual model developed for each interview with these being the completion steps for the first phase. Phase 2 involved the comparison between the developed models and the initial one, identification of the similarities and differences of the variables among the individual transcripts and finally the development of a comprehensive research model (Xu and Quaddus 2004; Azizah 2011).

As shown in figure 5.1, every step, for example, step1 to step10 in phase 1 and phase 2, was performed in a sequential procedure. Phase 2 started only after the successful accomplishment of phase 1.

Phase 1 commenced with conducting and transcribing the interview (Step1). In Step2, all the interview transcripts were carefully analysed manually by reading each word, line and sentence of the transcripts to uncover key patterns/themes (variables) and afterwards recognising or producing themes (variables) by using key words. After this step, key words were labelled or categorized into relevant variables and corresponding constructs (Step3). The relationship or link among constructs or variables from each interview were next sought and identified (Step4). Then, the constructs and variables or items were matched with similar features previously found in the literature (Step5). In this way, the variables were updated in the deductive process obtained from the interviews. Finally, conceptual models were developed showing the constructs and their links for each interview (Step6).

In the second stage, phase 2 began by comparing the developed models with the initial model from the literature. In this stage, cross-analysis was undertaken of the transcripts to put the relevant constructs, variables and links together to develop a comprehensive research model. At Step7 in the data analysis procedure, similarities and differences of variables under each construct were identified among the answers from all participants and were given a new name after being combined. However, unique variables were retained (Step8). A final table of constructs, variables and links was then developed and tabulated to give a clear outlook of the findings. Finally, a new comprehensive model of competitiveness was developed (Step10) after elimination of variables and links which were inconsistent (Step9). The new comprehensive model is shown in figure 5.13.

5.3 Results and Interpretations

5.3.1 Constructs and variables

The qualitative data, collected through interviews from the field study, were analysed to identify a number of constructs and variables. Initially, 78 variables under eight constructs were identified. As mentioned in the previous section, content analysis was applied to analyse the data. From the content analysis, a total of eight constructs and 56 variables of first-tier and second-tier constructs, directly or indirectly influenced by the RMG industry's SC competitiveness, were identified. Different participants from different garment companies mentioned either similar or different variables during the interview sessions. After scrutinising and combining variables or items that were similar, the final results were achieved which are presented in table 5.3. The results show eight constructs under two factors and 56 related variables under those constructs which were mentioned by 50-100% of the corresponding participants. The table shows the frequency (i.e. the number of times) that each variable was mentioned by participants. The interview data were coded and categorized by cross-referencing to the constructs and variables of the primary research model as presented earlier (chapter 3). Section 5.4 provides actual statements of participants that indicate the existence of some of the constructs and variables in the comprehensive model.

Table 5.3: Constructs and variables of RMG supply chain to improve competitiveness

Factors	Constructs	Variables	Participants									
			1	2	3	4	5	6	7	8	9	10
1. Country factors or external stakeholders	1.Constructs from external stakeholders											
	a. Political action	Political role in functional services	√	√	√	√	√	√	√		√	√
		Political role in utilities support	√		√	√		√	√			√
		Insufficient logistics support		√	√	√		√	√	√		√
		Stakeholder relationships	√	√	√		√		√		√	√
		Trade facilitating services	√	√	√	√	√	√	√		√	√
		Government role	√	√	√	√	√	√	√	√	√	√
	b. Country risk	Political environment	√	√	√	√			√	√	√	√
		Trust and commitment among stakeholders			√		√	√	√	√	√	
		Business environment	√		√	√		√		√		√
		Skilled labour and productivity		√	√	√		√	√		√	√
		Lack of government control and support	√	√	√	√	√	√	√	√	√	
		Increased import dependency	√		√	√	√	√		√		

Factors	Constructs	Variables	Participants									
			1	2	3	4	5	6	7	8	9	10
		Unawareness of government and bureaucrats	√		√			√	√	√	√	√
	c.Bureaucratic behaviour	Administrative support system	√	√	√	√	√	√			√	√
		Lack of professionalism	√	√	√	√	√	√	√		√	√
		Lack of coordination among officials			√		√	√	√		√	√
		Documentation process and approval system	√		√	√		√			√	√
		Lack of management knowledge and delivery of performance			√	√	√	√	√			√
		Non-co-operational attitude	√		√		√		√		√	√
2. Business factors or internal stakeholders	2.Constructs from internal stakeholders											
	a.Supply-side drivers	Cheap and available labour	√	√	√	√	√		√	√	√	√
		Complying with buyers' standards and needs			√	√	√	√	√		√	
		GSP facility				√	√	√	√		√	√
		Price and quality		√		√	√	√		√	√	
		Efficiency		√	√	√	√	√		√		
		Loyalty and devotedness	√		√	√	√	√				
	b.Supply-side barriers	Lack of raw materials	√	√	√	√	√	√	√	√	√	
		Import dependency and long lead time	√	√	√	√	√	√	√	√	√	√
		Lack of government knowledge and role			√	√	√	√	√	√	√	
		Stakeholder relationships		√	√				√		√	√
		Lack of business and technological knowledge	√	√	√	√	√	√		√		√
		Political disturbances	√	√		√		√	√	√	√	√
		Unfavourable bureaucratic behaviour	√	√	√	√	√	√	√		√	√
		Lack of functional support and facility	√	√	√	√	√	√	√	√	√	
		Lack of skilled labour and productivity	√	√	√	√				√		√
		Lack of attention to workers' rights		√	√	√		√	√		√	
	c.Demand-side drivers	Favourable bargaining power		√	√		√	√	√		√	√
		Flexibility			√		√		√	√	√	
		Buyers' brand		√	√				√	√	√	√
		Facilities (duty-free) from local (home) government	√	√				√			√	√
		Bulk and frequent purchase		√			√	√		√		√
		Buyers' history					√		√	√	√	√
	d.Demand-side barriers	Compliance issues	√	√	√		√	√	√	√	√	
		Various terms and conditions (buyers)	√	√	√	√	√	√	√		√	√
		Lack of trust			√		√	√	√			√
		Tariff and regulatory issues (barriers)	√	√	√		√	√			√	√
		Use of middlemen		√			√	√		√	√	
		Weak relationships		√	√			√		√		√

Factors	Constructs	Variables	Participants									
			1	2	3	4	5	6	7	8	9	10
	Competitiveness	Productivity	√		√	√		√	√		√	
		Cost efficiency	√		√	√	√			√	√	√
		Stakeholder relationships		√	√	√		√		√		√
		Delivery time		√		√	√	√	√	√	√	√
		One-stop service		√	√	√		√		√	√	
		Government control and support	√		√	√		√	√	√	√	√
		Quality product and competitive price		√		√		√		√	√	√
		Reduction of import dependency		√	√		√	√	√		√	
		Technology advances			√	√		√	√		√	√

Through the content analysis process, attempts were undertaken to examine the reality and consistency between the data collected from interviews and the variables identified in the preliminary SC competitiveness model (figure 5.2). However, some variables were finally selected although there were small differences in meaning among the variables identified from the literature and field study. Participants expressed their opinions according to their knowledge, experience and emotion. After the interviews, as the data were processed taking into consideration their ways of expression and body language, there might be some differences. The captured data represented the responses of participants in the context of the RMG industry's SC competitiveness in Bangladesh. It was observed from table 5.3 ('Constructs and variables of RMG supply chain to improve competitiveness') that all participants in field study interviews agreed to the identified constructs with little variation to the variables. It was acknowledged by participants that the identified constructs and their variables have direct and indirect negative impacts on the competitiveness of the SC of the RMG industry. During one interview, a prominent respondent from a large garment company stated that, "*as an entrepreneur of a developing country, we always expect cooperation and coordination from the government and their officials. If the government and opposition parties take proper action for the development of the garment industry, we certainly improve our competitiveness. There are many things in the supply chain where their (government, political parties and the bureaucrats) support such as, developing infrastructural facilities, is very important.*"

In the field study, 56 variables were finally identified. Remarkably, of this total, only two variables were recognised by all participants. These variables were one, the government's role about political risk and two, import dependency and long lead

time. Interestingly, nine variables under different constructs were also recognised by nine out of the 10 participants. These variables were: political role in functional services, trade facilitating services, lack of government control and support, lack of professionalism, cheap and available labour, lack of raw materials, unfavourable bureaucratic behaviour, lack of functional support and facility and, lastly, various terms and conditions (buyers). More interestingly, seven variables were recognised by eight(8) participants, eight variables by seven (7) participants, twenty one variables by six (6) participants and nine variables by five (5) participants.

Two tiers of constructs were considered in the preliminary competitiveness model of the RMG industry's SC. The second-tier constructs were the internal and main stakeholders of the SC and the first-tier constructs were external stakeholders who directly or indirectly affected the RMG industry's SC where the main stakeholders, such as suppliers, were struggling to increase the competitiveness of the present SC for the RMG industry of Bangladesh. Considering the time limitation, only one major stakeholder, that is, suppliers or manufacturers, had been considered in this research and the focus was on them. Therefore, 10 participants from the top executive level of different manufacturing companies were approached for interviews in the field study for the qualitative part of this research. In the interview, the responses reflected participants' opinions according to their experiences on how to increase the competitiveness of the RMG industry's SC. For instance, participant #3, top executive of the marketing and merchandising department of the oldest and very large garment company, provided the highest number of variables due to his huge amount of experience in this sector. Participant #6, top executive of a famous large garment company, also focused on the second highest number of variables influencing the SC, due to his significant knowledge and considerable experience in the garment sector. Participant #4, top executive of a very famous group of garment companies provided the third highest number of variables due to his very good knowledge and experience about this industry. Participants #7 and #9 provided the same number of variables. Other participants have also provided and focused on many important variables which are depicted in table 5.3, within the frequency range of 29–46, and also provided the same opinions about the ways to increase competitiveness in the RMG industry's SC.

Through this field study, it was confirmed by interview participants that the influence of the first-tier sub-constructs, the external stakeholders, was above that of the second-tier sub-constructs, the internal stakeholders. This type of influence was seen to be weakening the competitiveness of the SC. Based on stakeholder theory, the first-tier constructs were the political action of government and opposition and bureaucratic behaviour. Another external construct was country risk created through the interaction of political parties' actions and bureaucrats' behaviour. In the field study, it was observed that participants agreed that these three constructs were affecting the supply-side and demand-side sub-constructs and ultimately the industry's competitiveness. The suppliers were distressed about the present situation of the SC and the role of political parties and bureaucrats. They are very much alert about the need to increase competitiveness but faced many hindrances and lack of support from the first-tier stakeholders. Different types of variables under those constructs were mentioned by participants which were actually creating hindrances in the SC. Of these variables mentioned, some were also supported by the literature. In appendix-4 three sample quotations have been mentioned that reflected the variables under different constructs. The variables "Lack of raw materials" under Supply Side Barriers, "Stakeholder relationship" under Competitiveness and "Lack of management knowledge and delivery of performance" under Bureaucratic Behaviour were identified and confirmed from the interviews.

However, the constructs (derived from the previous literature) for achieving success in improving competitiveness received significant support from participants interviewed in the field study. All the participants from the suppliers' side agreed that to improve the competiveness of the RMG industry's SC, external stakeholders, such as the government, political parties and bureaucrats, should act positively to address the issues from the buyers' and suppliers' side. Actions responding to the buyers' side issues like demand-side drivers (DD) and barriers (DB) would enhance the response to the suppliers' side issues. Many participants did not agree with the role of demand-side drivers in SC competitiveness. Ultimately from the interviews, it was made clear that the success of SC competitiveness would be possible whenever actions addressed the suppliers' side issues like supply-side drivers (SD) and barriers (SB) were combined with work undertaken to influence the variables of other external stakeholders. As previously mentioned, the focus of the field study was

actually on the validation and enhancement or improvement of the constructs and variables identified in the initial research model. The following section will discuss the relationships or links between the constructs that were confirmed by the field study.

5.3.2 Links among the constructs

The data analysis summary presented the links among the sub-constructs of external stakeholders and internal stakeholders and, ultimately, those with the competitiveness construct, with these links presented in table 5.4. The information about the links between constructs was extracted from the content analysis of the 10 interview transcripts.

Table 5.4: Links between constructs

No.	Construct links	1	2	3	4	5	6	7	8	9	10
1.	Political action → Supply-side drivers	√	√	√	√	√	√	√	√	√	√
2.	Political action → Supply-side barriers	√	√	√	√	√	√	√	√	√	√
3.	Political action → Demand-side drivers	×	√	√	×	√	×	√	√	×	√
4.	Political action → Demand-side barriers	√	√	√	√	√	√	√	√	√	√
5.	Political action → Competitiveness	√	√	√	×	√	×	√	×	√	√
6.	Political action → Country risk	√	√	√	√	√	√	√	√	√	√
7.	Country risk → Supply-side drivers	√	√	√	√	√	√	√	√	√	√
8.	Country risk → Supply-side barriers	√	√	√	√	√	√	√	√	√	√
9.	Country risk→ Demand-side drivers	×	×	√	×	√	×	√	√	√	×
10.	Country risk → Demand-side barriers	√	√	√	√	√	√	√	√	√	√
11.	Country risk → Competitiveness	×	√	√	×	√	√	×	√	√	×
12.	Bureaucratic behaviour → Supply-side drivers	√	√	√	√	√	×	√	√	√	√
13.	Bureaucratic behaviour → Supply-side barriers	√	√	√	√	√	√	√	√	√	√
14.	Bureaucratic behaviour → Demand-side drivers	×	×	√	×	×	×	√	√	×	√
15.	Bureaucratic behaviour → Demand-side barriers	√	√	√	√	√	√	√	√	√	√
16.	Bureaucratic behaviour → Competitiveness	√	√	√	√	×	√	√	×	√	√
17.	Bureaucratic behaviour → Country risk	√	√	√	√	√	√	√	√	√	√
18.	Demand-side issues (drivers & barriers) → Supply-side issues (drivers & barriers)	√	×	×	√	×	√	×	×	×	√
19.	Supply-side drivers → Competitiveness	√	√	√	√	√	√	√	√	√	√
20.	Supply-side barriers → Competitiveness	√	√	√	√	√	√	√	√	√	√
21.	Demand-side drivers → Competitiveness	√	×	√	×	√	×	√	×	√	√
22.	Demand-side barriers → Competitiveness	√	×	×	×	√	√	√	×	√	√

The quotations from the transcripts below provide examples of links mentioned by the interview participants, respondent # 1 has mentioned that "*the government is a very big external stakeholder, it has direct influence on the competitiveness. By taking several actions, it can help the buyers and suppliers to play important and positive roles in the RMG business*". (This indicates the link between "Political Action → Supply-side issues"; "Political Action → Demand-side issues"; and "Political Action → Competitiveness".)

He also added that "*We are facing [the] main problem in the infrastructural facilities which are very poor in our country. The government and the opposition parties through their positive action can improve the infrastructural facilities that improve our bargaining power and improve the competitiveness*". (This indicates the link between "Political Action → Supply-side issues".)

Similarly respondent # 3 says "*As it is a buyers' market, political parties should be very careful about the buyers. I am sure, by taking necessary action, the government can reduce the country risk and make the buyers more confident to deal business with the Bangladeshi suppliers*". (This indicates the link between "Political Action → Country Risk"; "Political Action → Demand-side issues"; and Country Risk → Demand-side issues".)

In the same way the respondent # 4 says "*I believe that the government and their officials can take necessary action to improve the total business environment in our country. They can provide financial support, policy support, documentation support, infrastructural support for the benefit of this industry*". (This indicates the link between "Supply-side issues → Competitiveness"; "Bureaucratic Behaviour → Competitiveness"; and Bureaucratic Behaviour→ Supply-side issues".)

As illustrated in table 5.4, the linkages between the constructs are found in column one and their corresponding frequencies are found in the respective columns. The links between political action (PA) and internal constructs, that is, supply-side drivers (SD) and supply-side barriers (SB) of suppliers and demand-side drivers (DD) and demand-side barriers (DB) of buyers were recognised and supported by all participants. In the field study, 100% of participants supported all except two of these influential links. The link between political action (PA) and demand-side drivers (DD) was supported by only 60% of participants. From the field study, it was also shown that political action (PA) also had a direct link to competitiveness with 70% of participants confirming this direct link.

The next stakeholder identified was bureaucrats. Bureaucratic behaviour (BB) was seen to have sufficient influence on the supply-side and demand-side issues and then on competitiveness. The relationship or the link between BB → SB and BB → DB was identified through content analysis supported by all participants with 100% agreeing with the maximum links. However, the link between BB → SD was

supported by 90% of participants and the link between BB → DD was supported by only 40% of participants. From the field study, a new link identified was that BB had a direct link to competitiveness (COM) with 80% of participants agreeing with this link.

Country risk (CR) was another construct that was created by the interaction of political action (PA) and bureaucratic behaviour (BB). The links between CR → SD, CR → SB and CR → DB were supported by all participants (i.e. 100%); however, the link between CR → DD was supported by only 50% of participants. The direct link between CR → COMP was also supported in the field study by 60% of participants. So, this new link originated directly from the field study. Finally, according to the field study, the links between SD → COM and SB → COM were established with 100% support from the interview participants from the field study whereas the links between DD → COM and DB → COM were not supported by all participants. These two links were highlighted by only 60% of participants respectively. However, from the field study, a new link was discovered that was pointed out by 40% of participants and rejected: demand-side issues (drivers and barriers) had direct influence on supply-side issues (drivers and barriers) and supply-side issues had influence on competitiveness.

5.3.3 Individual conceptual models in accordance with the field study

After the field study, the transcribed interviews were analysed very carefully. Constructs and many new variables for the competitiveness model of the RMG industry's SC were identified and recognised. Those constructs and variables are presented in table 5.3 with the links among the constructs shown in table 5.4. Following the data analysis process (figure 5.1) and later taking into consideration the information on tables 5.3 and 5.4, 10 individual conceptual models were constructed. These constructed models are consequently shown in appendix no.1. No new construct was identified but some new variables were derived from the interviews conducted in the field study. However, constructs consisted of different types of variables in each of the models. The variables under all the constructs are shown in table 5.3. The total number of variables under each constructed model (see the appendix-1 and the figures from A1.1 to A1.10) and the total number of variables under each construct of the constructed models, according to the field study, are

shown in table 5.5. In table 5.5, the first constructed model (figure-A1.1) has five variables under PA, six variables under CR, four variables under BB, two variables under SD, seven variables under SB, one variable under DD, three variables under DB and three variables under COM.

Therefore, there are 31 variables in total for this model which have been recognised and identified according to participant-1's interview in the field study. The lowest number of variables (29) was identified from participant-8's interview and this is shown in figure A1.8.

Table 5.5: Variables in each constructed model and the comprehensive model

Models	**Constructs (Total no. of variables under each construct)**								Total accepted no. of variables under each participant
	PA	CR	BB	SSD	SSB	DSD	DSB	COM	
	Accepted no. of variables under each construct in 10 figures								
Figure A1.1 (P1)	5	6	4	2	7	1	3	3	31
Figure A1.2 (P2)	5	3	2	3	9	4	4	5	35
Figure A1.3 (P3)	6	6	6	4	9	3	4	8	46
Figure A1.4 (P4)	5	5	4	6	9	0	1	8	38
Figure A1.5 (P5)	4	3	4	6	6	4	5	3	35
Figure A1.6 (P6)	5	7	5	5	8	2	5	4	41
Figure A1.7 (P7)	6	6	3	2	8	4	3	6	38
Figure A1.8 (P8)	2	5	0	2	7	4	2	7	29
Figure A1.9 (P9)	4	5	4	3	8	3	4	7	38
Figure A1.10 (P10)	6	4	6	1	6	5	3	5	36
Final model									Total accepted no. of variables for final model
Figure 5. 4 Comprehensive model	**6**	**7**	**6**	**6**	**10**	**6**	**6**	**9**	**56**

The highest number of variables was identified by participant-3 and is shown on figure A1.3. In this figure, participant-3 identified and agreed with a total of 46 variables. The second highest number (41 variables) was identified by participant-6 as shown in figure A1.6.

Accordingly, from table 5.5, we can easily explain that figure A2 (P2), figure A4 (P4), figure A5 (P5), figure A7 (P7), figure A9 (P9) and figure A10 (P10) consequently show that their respective participant has recognised 35, 38, 35, 38, 38 and 36 variables.

5.3.4 Cross-examination of conceptual models

The second phase of content analysis was the cross-analyses of the individual conceptual models identified in phase 1. After cross-examination, table 5.5 was developed to confirm the final number of constructs in the final comprehensive model. This table was developed based on scrutinising the transcript, examining the qualitative data in the exploratory stage and the corresponding participant's opinion, and considering the tabulated data in tables 5.3 and 5.4. As shown on table 5.6, all participants gave full consent over the constructs except for only one participant who did not give consent for bureaucratic behaviour.

Table 5.6: Constructs and corresponding opinion

Factors	**Constructs**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
External stakeholders	Political action	√	√	√	√	√	√	√	√	√	√
	Country risk	√	√	√	√	√	√	√	√	√	√
	Bureaucratic behaviour	√	√	√	√	√	√	√		√	√
Internal stakeholders	Supply-side drivers	√	√	√	√	√	√	√	√	√	√
	Supply-side barriers	√	√	√	√	√	√	√	√	√	√
	Demand-side drivers	√	√	√	√	√	√	√	√	√	√
	Demand-side barriers	√	√	√	√	√	√	√	√	√	√
Outcome	**Competitiveness**										

5.4 Final Comprehensive Model

In the last stage, the final comprehensive model (figure5.3 and 5.4) were developed combining the 10 different models constructed according to the field study and taking into consideration the initial conceptual model which was drawn from the literature review (figure 3.1 or 5.2). The development of the final comprehensive model was actually the refinement or modification of the conceptual model after the field study. In this model, eight constructs with 56 variables or items have been considered.

There were 19 links between the constructs in the initial model: these links are identified through the rational justification summarised in table 5.7. After the field study, only two links were rejected and three new links were accepted. The links between BB to DD and demand-side issues to supply-side Issues were supported by

only 40% of participants. Due to weak support, these were finally rejected (Muthusamy 2011). The accepted and rejected links are presented in table 5.7.

Table 5.7: Constructs, sub-constructs and links for the final research model

Constructs	**Links between constructs**	**Justification for Acceptance and Rejection of Constructs**	**Acceptance/ Rejection**
External stakeholders/ Country factors	Political action → Supply-side drivers	Supported by literature review Supported by field study	Accepted
	Political action → Supply-side barriers	Supported by literature review Supported by field study	Accepted
	Political action → Demand-side drivers	Supported by literature review Supported by field study	Accepted
	Political action → Demand-side barriers	Supported by literature review Supported by field study	Accepted
	Political action →Country risk	Supported by literature review Supported by field study	Accepted
	Political action → Competitiveness	**Supported by field study**	Accepted
	Country risk → Supply-side drivers	Supported by literature review Supported by field study	Accepted
	Country risk → Supply-side barriers	Supported by literature review Supported by field study	Accepted
	Country risk→ Demand-side drivers	Supported by literature review Supported by field study	Accepted
	Country risk → Demand-side barriers	Supported by literature review Supported by field study	Accepted
	Country risk → Competitiveness	**Supported by field study**	Accepted
	Bureaucratic behaviour → Supply-side drivers	Supported by literature review Supported by field study	Accepted
	Bureaucratic behaviour → Supply-side barriers	Supported by literature review Supported by field study	Accepted
	Bureaucratic behaviour → Demand-side drivers	Not supported by field study (only 40%)	**Rejected**
	Bureaucratic behaviour → Demand-side barriers	Supported by literature review Supported by field study	Accepted
	Bureaucratic behaviour → Country risk	Supported by literature review Supported by field study	Accepted
	Bureaucratic behaviour → Competitiveness	**Supported by field study**	Accepted
Internal stakeholders/SS and DS issues	**Demand-side issues (drivers & barriers) → Supply-side issues (drivers & barriers)**	Not supported by field study (only 40%)	**Rejected**
	Supply-side drivers → Competitiveness	Supported by literature review Supported by field study	Accepted
	Supply-side barriers → Competitiveness	Supported by literature review Supported by field study	Accepted
	Demand-side drivers → Competitiveness	Supported by literature review Supported by field study	Accepted
	Demand-side barriers → Competitiveness	Supported by literature review Supported by field study	Accepted

However, after considering all aspects, finally a new comprehensive model has been developed that is shown in figure 5.3. The model with the number of items under each construct is shown in the same figure 5.4. This final research model was then utilized in the preparation of the survey instrument. The instrument (questionnaire) was used to collect quantitative data in the national survey. In the quantitative part of this study, the statistical significance of the links will be analysed. After that, the final outcome achieved by the study will be a competitiveness model to arrive at the

best effectiveness for the Bangladeshi RMG industry. However, the next section provides further explanation and justification on the inclusion of each individual construct in the final research model.

5.4.1 Constructs from external stakeholder factors

In this research, the SC process has been considered as a way to improve the competitiveness of the RMG industry in Bangladesh. Based on the literature (see chapter 3), it was found that the roles of external and internal stakeholders in the RMG industry's SC were very important in improving competitiveness. From the previous literature of various research studies (Chandra 1997; Dossenbach 1999; Wong 1999; Bowen 2000; Rungtusanatham 2003; Cao et al. 2008; Zhao et al. 2008), it was perceived that competitiveness could be increased through coordination, collaborative relationships and partnerships, and integrated relationships among different parties or stakeholders of the SC. It was also observed in the literature of the Bangladeshi RMG industry (World Bank 2005; Adhikari and Weeratunge 2007b; Nuruzzaman 2008; Nuruzzaman, Haque, and Rafiq 2010) that the roles of external stakeholders, such as government and bureaucrats were very important for an effective SC and to improve competitiveness.

Therefore, three constructs have been considered from external stakeholders based on the previous literature (see chapter 3 for the literature review). These constructs are: political action, bureaucratic behaviour and country risk all of which directly and indirectly influence the competitiveness of RMG industry's SC. There are many studies in the literature (Miller 1993; Boddewyn and Brewer 1994; Hadjikhani and Hakansson 1996; Reed 2002; Tsai, C.Yeh, et al. 2005; Welge and Holtbrugge 2006; Holtbrugge, Berg, and Puck 2007; Kim 2007; Fassin 2009) that support these constructs and their role in the SC to improve competitiveness.

In the field study, all participants supported and believed in the important role of external stakeholders in improving competitiveness. In one interview, participant #1 was quoted as follows: "*There are many reasons for which we cannot make our garment sector more competitive. Absence of government control over the political situation, unlawful demand of the labour, influence of local political leaders over the business, lack of uninterrupted gas and electricity supply, unsuccessful law and order situation, Dhaka-based industrialization are creating many problems in the competitiveness*".

He also added that "*political influence in all the sectors, inefficient bureaucratic decision-making system for import and export activities and their disfavourable role are also liable for this situation. Moreover, due to lack of government support, we cannot provide undisturbed and peaceful working environment like our competitors. We are lagging behind in respect of human resource development. We have to give more emphasis on human resource development. Government needs to take proper action in this regard"*.

Another participant mentioned that: "*There are many stakeholders among the chain. Among them buyers are big stakeholders. Suppliers are also a big stakeholder because of two reasons. One, it's a buyers' market when we are suppliers and it's also a supplier's market when we are buyers"*. It is also revealed that, *"Government, bureaucrats, political parties are also stakeholders in that sense that there is a scope to play a role to improve the prevalent environment by escaping us from the dirty and unrest political environment"*.

Similarly it was also added that, *"Bureaucratic things are those activities directly related to policy making and implementation, various official paper works for export, import activities and many issues in the financial services which may create some impediments for the suppliers*".

Considering the above aspects of external stakeholders, participant #4 stated that "*I would like to say that orders' cycle time or lead time, delivery performance and responsiveness are affecting the competitiveness. Here, efficiency is too much important. We are not doing well to create competitiveness because of industry inefficiency and this is the main thing in competitiveness issue"*. He also added that *"We are not losing competitiveness due to poor infrastructure but it decreases the supply chain efficiency and affects the competitiveness. Who are my SC partners or members? There are many members like spinning factories or yarn suppliers, clothes manufacturers, dyeing factories, labelling and ticketing suppliers, C&F* [clearing and forwarding] *agents are involved in SC. So, when the supply chain doesn't work efficiently and doesn't maintain good relations among the partners or stakeholders, in that situation it becomes inefficient and is losing competitiveness"*.

Participant #6 also stated that, *"Buyers and manufacturers are definitely influential stakeholders but political parties and bureaucrats are not directly. Their main role is in the policy making and implementation. Their support is also very important for exporting garments and importing raw materials. Here buyers and suppliers are facing main problems in regards to official formalities and infrastructure development. We can reduce the time in the road traffic system and port management through development of infrastructure and*

reduce the paper works. In the banking system we had to open L/C [letters of credit] *and all the transaction is done by the L/C through a bank. Bank usually charges big amount for these services. In these areas, government, political parties and bureaucrats can help through policy making*".

From the above opinions as stated in the field study, we can say that the roles of external stakeholders are very important. Therefore, to improve competitiveness, government and bureaucrats can play important roles through their positive political action and good behaviour.

5.4.2 Constructs from internal stakeholder factors

The two main parties in the RMG industry's SC are buyers and suppliers. Many parties are involved but buyers and suppliers play the main roles as internal stakeholders of the SC. Based on various studies in the literature (see the literature review in chapter 3), the following four constructs were identified in the RMG industry's SC. Supply-side drivers, supply-side barriers, demand-side drivers and demand-side barriers were the main constructs derived from internal stakeholders of the SC. It was found from the previous literature (Nuruzzaman 2001; Nuruzzaman, Haque, and Rafiq 2010; Quaddus and Didi 2005; Rahman 2005; Rahman and Anwar 2006; Adhikari 2007a; Kale 2007; Ahmed 2009; Berg et al. 2011; Sultana et al. 2011; Halder and Kim 2012) that different types of strengths and weaknesses of suppliers were affecting competitiveness; the two supply-side constructs were also affected by the constructs of external stakeholders and influenced the competitiveness of the RMG industry.

From the buyers' point of view, there were also two types of construct: demand-side drivers and demand-side barriers (see literature review in chapter 3). Based on the literature review (Wu et al. 2004; Quaddus and Didi 2005; Rahman 2005; Claeys and Brachet 2008; Razzaque and Eusuf 2008; Zhao et al. 2008), these two constructs had direct and indirect effects on the competitiveness of the RMG industry's SC.

Moreover, in the field study, participants also supported these influential constructs in the RMG industry's SC. In this regard, participant #5 was quoted as saying that: "*suppliers have many drivers like: availability of cheap labour, lower power generation cost, very good convincing power to have order, hardworking people, GSP facility and side by side they have many barriers like: has not sufficient guard of* [their] *cotton, yarn and*

fabrics supply, totally dependent on imported raw materials, not conscious and sincere about delivery in time. Most of the suppliers have no composite facilities and they are dependent on other suppliers for their raw materials. That is why they cannot offer competitive price and meet the deadline of supply garments. Suppliers cannot communicate with the buyers directly. There are three/four middleman between the suppliers and the buyers. Dealings via middlemen are very difficult and take more time for the final delivery. In this way, suppliers cannot expect good price from the buyers. For many purposes government does not come forward with their supportive mind. Our port is not far away but due to lack of proper management and good transportation facilities, we cannot take the benefit from our port. As the channel of our port is so narrow, big ships cannot enter the port".

The participant also added that: "*If the buyer is constant (regular buyer) that is continuing to buy from us, must reduce the cost. Buyers' location may be a strength or weakness. German buyers are always good but the East European, Italian and Jewish buyers are not good. We should be very careful about our buyer selection because there are many fraudulent buyers in the market. Those buyers are more powerful and good to the suppliers who are maintaining less formality. Suppliers feel always good to work with those buyers who are maintaining few formalities. So maintaining fewer formalities is the strength of the buyer. Another thing that is, buyers dealing with the mixed items (basic, fancy and polo) are always better than basic items. The profit margin is always higher in mixed items than basic items. So buyers dealing with the mixed items are always stronger than the buyers of basic items*".

Participant #6 mentioned that, "*In my opinion our first strength or drive is work spirit and then sacrificing tendency. In any adverse situation, we, the manufacturers or suppliers, can work hard. The second strength is our workforce. Though they are exploited but they are doing their job. If they are not politicised or politically provoked, they are definitely a wonderful strength of RMG sector. When there is a good relation between workers and owners, workers are definitely a big strength. Our third strength is a group of people who are supportive and helping us a lot"*. He added that, *"The present infrastructure of RMG is very poor. There are many drawbacks in the present supply chain. Due to lack of proper logistics support like uninterrupted electricity and gas supply, the present supply chain of RMG doesn't work efficiently*".

He further stated that, "*When we consider about the barriers, except one or two, every matter is barrier in the competitiveness of RMG supply chain. First thing is decentralize the*

garment units. There is no industrial park in our country. As a result, we are all (workers, buyers, manufacturers) wasting or losing many hours in unproductive way and this is main reason for facing the long lead time problem. There is huge system loss due to lack of infrastructural facility but we are not considering that cost. Moreover, there is no uniformity among the manufacturers. Through a policy, we can fix up a minimum price for a certain product. If we are united and maintain the uniformity, none can code price under that minimum level of price. Again, we, the manufacturers, are competing among ourselves by dropping our price. In this way, we are actually destroying our market".

He also added that, *"Another weakness or barrier is our individualism. Due to lack of unity among the suppliers, we are giving an opportunity to the buyers to bargain with us. This is the strength of buyers. Till now as it is a buyers' market and we are bound to follow all their terms and conditions. There are very few garment [maker]s in Bangladesh who can bargain with the buyers. The present situation is known to the buyers and that is why they are imposing some new terms to the manufacturers. These terms are demand-side barriers like, they are offering lower price. Now buyers are not issuing L/C, giving the contract sheet or PO for confirmation. Showing that paper, they are requesting the manufacturer to open L/C, import materials, make garments and arrange shipment. Buyers are agreed to pay the fare but not the insurance cost. Buyers are usually making payment after receiving the final products. In this way, buyers can save the banking cost but manufacturer can't do it. It is buyers' advantage. But these are barriers for us. Buyers don't want to continue their purchase if we fail to meet their offered price, even you have good trust and relationship with the buyers. When compliance issues came to this industry, buyers didn't give any support"*.

Considering the above quotations of the participants in the field study, we can draw a conclusion about the internal stakeholders' role in the RMG industry's supply chain in improving competitiveness. It is clear from the above statement that the supply- and demand-side drivers and barriers from internal stakeholders are also influenced by external stakeholders in improving the competitiveness of the RMG industry by strengthening the drivers and weakening the barriers.

5.5 Summary

This chapter has dealt with the qualitative phase of mixed-method research. A comprehensive field study to determine the constructs and items for the competitiveness model of the Bangladeshi RMG industry were presented in this chapter. In this field study, 10 interviews were conducting to support the findings of the literature review. After recording the interviews, all were transcribed and

rigorously reviewed by the researcher using content analysis methods. Through this analysis, finally eight constructs and 56 items were identified and justified for the competitiveness model.

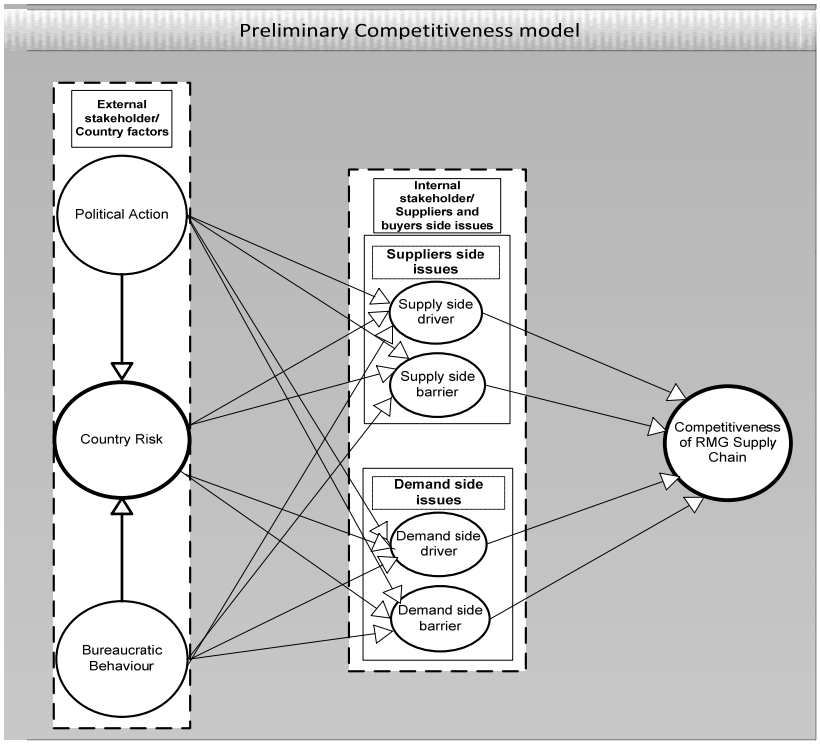

Figure 5.2: Preliminary competitiveness model

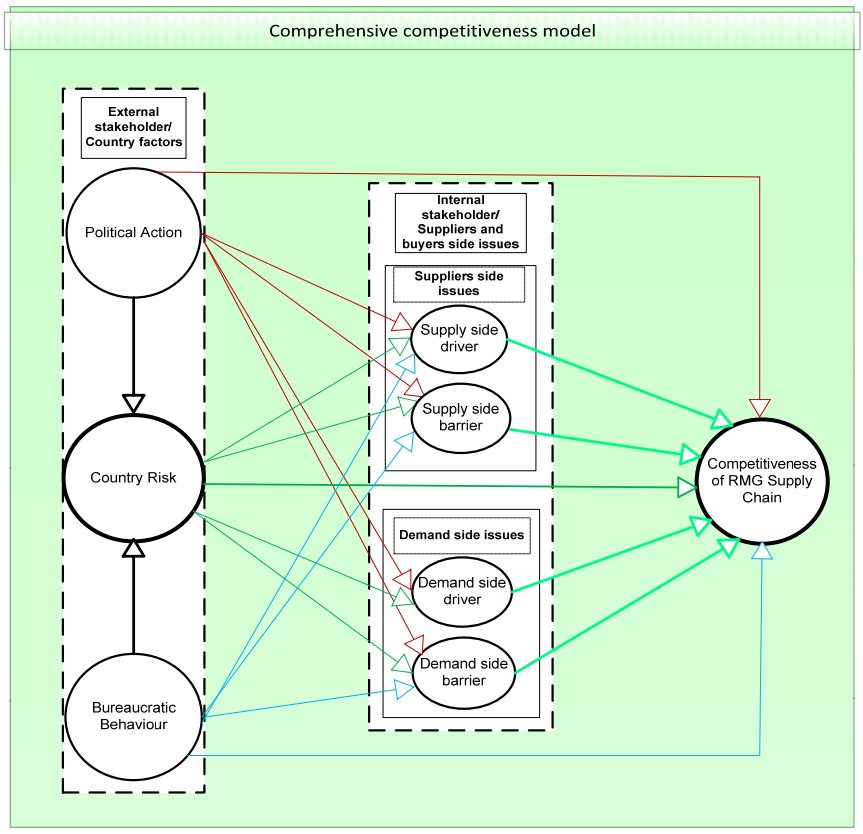

Figure 5.3: Comprehensive competitiveness model

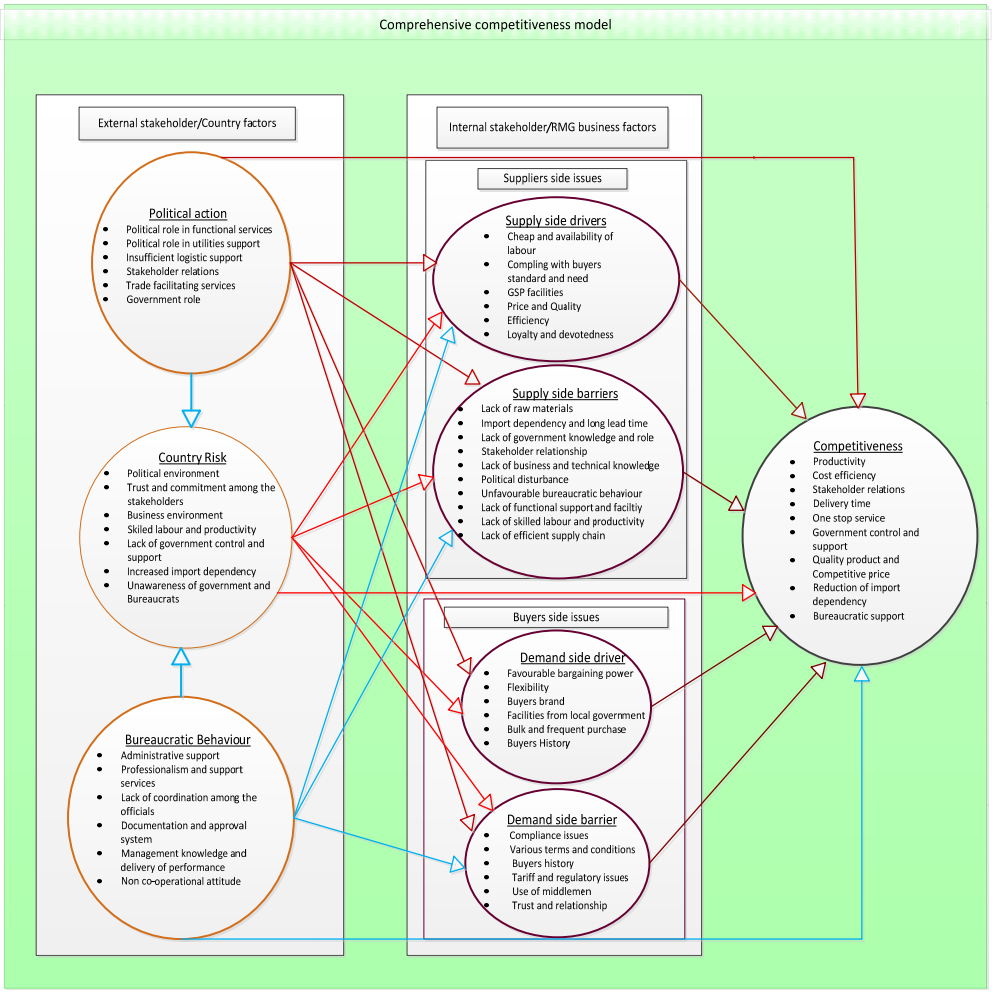

Figure 5.4: Comprehensive competitiveness model with details

CHAPTER 6

Hypotheses and Questionnaire Development[4]

6.1 Introduction

The focus of this chapter is the development of the hypotheses and the quantitative research instruments resulting from the finalised comprehensive research model. This chapter starts with the construction of hypotheses. Subsequent sections then present details of the development of the research instruments. Most of the instruments have been developed from the literature while being contextualised into the context of the current study. This chapter also presents a table of the measurement items used with their respective reference sources.

6.2 Construction of Hypotheses

The hypotheses have been constructed based on the comprehensive model that was shown in figure 5.4 in chapter 5.

6.2.1 Hypotheses related to external stakeholders

A firm can no longer compete effectively in isolation from its suppliers or other entities in the SC. Collaborative relationships with the internal and external entities are important to improve competitiveness (Lummus and Vokurka 1999). SCM is an effort to increase competitiveness (Nordås 2004). The analysis of the SC to improve competitiveness is an emerging field: it is therefore essential for organisations to understand the role of different stakeholders in the SC. The government and other stakeholders (Khondker , Razzak, and Ahmed 2005; Saxena and Salze-Lozac'h 2010) are directly or indirectly involved in the SC of the RMG industry. Their

[4]Part of this chapter has been presented at the following conferences:

Nuruzzaman, M., Quaddus, M., Jeeva, A. and Khan, E. Ahmed (2013), " The influence of External Stakeholder in the Competitiveness of Ready-Made Garment (RMG) Industry: A study on RMG Supply Chain in Bangladesh", *In proceedings of the Business & Economics Society International Conference (B&ESI*), January 7-10, Perth, Western Australia

Nuruzzaman, M.(2013), " The influence of Bureaucratic Behaviour to Improve the Competitiveness of RMG industry", *In proceedings of Emerging Research Initiatives and Development in Business*, CGSB Research Forum, 9-10 May, Curtin University, Perth, Western Australia

Nuruzzaman, M., Chowdhury, M., Quaddus, M. and Jeeva, A. (2013), "()Achieving Competitiveness through Analysing Supply Chain: A Test of Political Stakeholder's Action in Readymade Garment (RMG) Industry of Bangladesh"*In proceedings of the 3rd International Forum & Conference on Logistics and Supply Chain Management(LSCM),* June 27-29, Bali, Indonesia

involvement in the SC of the RMG export business influences the effectiveness and competitiveness of the RMG industry's SC and consequently the competitiveness of the RMG industry. Stakeholders such as the government, bureaucrats and political parties all influence the RMG industry's SC as external stakeholders (Tsai, C.Yeh, et al. 2005; Fassin 2009). Based on these external stakeholders, three external elements were considered as constructs, namely, political action, country risk and bureaucratic behaviour, which have been identified through the literature review and field study. The competitiveness of the RMG industry through SC performance actually depends on the influence of the external stakeholder element. The following sections present details of the influence of external stakeholders on improving competitiveness and the development of relevant hypotheses.

6.2.1.1 Political Action (PA)

Political action (PA) means the role and action of political stakeholders (i.e. the ruling political party, political opposition groups) in business (Hadjikhani and Hakansson 1996; Holtbrugge, Berg, and Puck 2007; Hadjikhani 2000) and improving competitiveness means to improve the ability to compete. Stadtler (2005) has defined improving competitiveness as the task of integrating organisational units along a SC and coordinating materials, information and financial flows in order to fulfil customer demand. After abolition of the MFA, the Bangladeshi RMG sector is now facing fierce competition in the global apparel market (Tewari 2006; Nuruzzaman, Haque, and Rafiq 2010). Improving the competitiveness of the RMG industry in the post-MFA period is top priority (Tewari 2006; Adhikari and Weeratunge 2007b; CPD 2007).

The RMG sector has developed surprisingly although it has some special conditions and peculiarities (see chapters 2 and 3). As Bangladesh is a developing nation, entrepreneurs are dependent on the government and they expect to receive positive political action from the government for infrastructural development and other logistics support. That is why the government and bureaucrats as external stakeholders have a very important role in achieving competitiveness in the SC and improving the industry's competitiveness (Kee 2005; Khondker , Razzak, and Ahmed 2005; Nuruzzaman 2009) . But the government and bureaucrats do not play their role in a positive way (Quddus 2001; Choudhury and Hossain 2005). Therefore, country risk is increasing and the RMG industry is losing its competitiveness in the global apparel

market (Sultana et al. 2011; Islam, Begum, and Rashed 2012). Supportive political action from the government and political parties is essential in reducing the political risk and achieving a good business environment (Porter 1985; Grosse and Behrman 1992; Falk and Miller 1992; Miller 1993; Hillman 2003; Hillman and Wan 2005). However, in the post-MFA period, there has been no significant development in infrastructural facilities, productivity, labour management, workers' livelihoods, improvement of existing laws and regulations, development of backward linkage industries, uninterrupted gas and electricity supply, reduction of lead time, ports' management or labour unrest due to the lack of a supportive government role and political action (CPD 2007; Haider 2007; Ahmed 2009; Berik and Rodgers 2009; Sultana et al. 2011; Hossain, Sarker, and Afroze 2012).

Uzzaman (2010) has mentioned in his research work the political corruption, bureaucracy, corrupt customs administration and many hidden barriers in Bangladesh due to the lack of appropriate political action. The lack of political action also has some impact on the internal stakeholder element, dependent constructs in the SC and, ultimately, on the competiveness of the RMG industry. In connection with this, many researchers (World Bank 2005; Adhikari and Weeratunge 2007b; Haider 2007; Ahmed 2009; Clark and S.Kanter 2010; Berg et al. 2011; Sultana et al. 2011; Hossain, Sarker, and Afroze 2012; Islam, Begum, and Rashed 2012) have mentioned in their research work the influence of political action on the suppliers' and buyers' drivers and barriers. The influence of political action over internal stakeholders' drivers and barriers is not only supported in the literature but also by 80% of respondents in the field study interviews.

Considering the above support in the literature and field study and the negative role of the actions of external stakeholders, the following hypotheses related to political action are proposed:

Hypothesis 1a (H1a): Non-supportive political action (PA) increases the country risk (CR).
Hypothesis 1b (H1b): Non-supportive political action (PA) decreases the supply-side drivers (SD) of the RMG industry of Bangladesh.
Hypothesis 1c (H1c): Non-supportive political action (PA) increases the supply-side barriers (SB) of the RMG industry of Bangladesh.
Hypothesis 1d (H1d): Non-supportive political action (PA) decreases the demand-side drivers (DD) of the RMG industry of Bangladesh.
Hypothesis 1e (H1e): Non-supportive political action (PA) increases the demand-side barriers (DB) of the RMG industry of Bangladesh.

There was no literature supporting the direct influence of political action (PA) on competitiveness (COM); however, the field study supported the direct influence of PA on COM. Therefore, the proposed hypothesis is:

Hypothesis 1f (H1f): Non-supportive political action (PA) decreases the tendency to improve the competitiveness (COM) of the RMG industry of Bangladesh.

6.2.1.2 Bureaucratic Behaviour (BB)

Bureaucrats are responsible for executing the decisions of the political leadership and for maintaining the day-to-day regulatory and service functions of the state (Nimir and Palmer 1982). Bureaucracy or bureaucratic behaviour (BB) is concerned with the behaviour of officials, while the action of, for example, worker groups, may also lead to deflection of an organisation (Selznick 1943). In any business process or commercial transaction, the government, political groups and bureaucrats play important roles (Hadjikhani and Hakansson 1996). According to stakeholder theory, the government and political groups are important stakeholders (Donaldson and Preston 1995)and as a part of the government, bureaucrats are also important stakeholders with Freeman (1984) defining a stakeholder as "any group or individual who can affect or is affected by the achievements of the organization".

The role and influence of bureaucratic behaviour are very important in the SC of the Bangladeshi RMG business but their non-supportive activities create various problems in international trade and the RMG industry (Quddus and Rashid. 1999; Quddus 2001; Uzzaman 2010; Islam, Begum, and Rashed 2012). The literature on political control of bureaucracy reveals that bureaucracies are highly responsive to political forces (Meier and Jr. 2006). Therefore, bureaucratic behaviour actually depends on the political role of the government. There are many components in the RMG industry's SC in which the involvement of bureaucrats and their supportive actions are essential. The literature has revealed that these components include: controlling the law and order situation; policies made and implemented in favour of the RMG export business; infrastructure development; ports' management; services in the banking sector; services in customs clearance; uninterrupted water, gas and electricity supply; building relationships with the buyers and suppliers through diplomatic channels; and many other relevant matters related to the RMG business (Williams 1999; Bhatnagar and Sohal 2005; Adhikari and Weeratunge 2007b; Kale

2007; Song and Panayides 2008; Habib 2009; Berg et al. 2011; Verma and Seth 2011; Hossan, Sarker, and Afroze 2012).

Quddus (2001) has mentioned the presence of bureaucratic problem and non-supportive behaviour in the Bangladeshi RMG export business. The demand- and supply-side issues are influenced by the bureaucrats and negotiated in the RMG sector to increase competitiveness. Uzzaman (2010) has mentioned in his research paper the bureaucracy in different levels of office management in Bangladesh. He has mentioned their non-supportive role in the customs clearance system of Bangladesh. Islam, Begum, and Rashed (2012) and Quddus and Rashid. (1999) have mentioned in their research work that the RMG industry's SC faces operational disturbances due to the lack of supportive bureaucratic behaviour and consequently faces competition with respect to quality, cost and time. Adhikari and Weeratunge (2007b) and Berg et al. (2011) also mentioned the bureaucratic problems in policy making, customs clearance, ports' management and infrastructural development as well as its influence on the drivers and barriers of the suppliers and buyers in the SC.

In addition to the support in the literature, 64% of respondents in the field study interviews were supportive of the view that BB had influence over the internal stakeholders' drivers and barriers.

However, considering the above situations and the negative role played by external stakeholders, the following hypotheses related to bureaucratic behaviour are proposed:

Hypothesis 2a (H2a): Non-supportive bureaucratic behaviour (BB) increases the country risk (CR).
Hypothesis 2b (H2b): Non-supportive bureaucratic behaviour (BB) decreases the supply-side drivers (SD) of the RMG industry of Bangladesh.
Hypothesis 2c (H2c): Non-supportive bureaucratic behaviour (BB) increases the supply-side barriers (SB) of the RMG industry of Bangladesh.
Hypothesis 2d (H2d): Non-supportive bureaucratic behaviour (BB) increases the demand-side barriers (DB) of the RMG industry of Bangladesh.

There was no literature supporting the direct influence of bureaucratic behaviour (BB) on competitiveness (COM) but the field study results supported the direct influence of BB on COM. Therefore, the proposed hypothesis is:

Hypothesis 2e (H2e): Non-supportive bureaucratic behaviour (BB) decreases the tendency to improve the competitiveness (COM) of the RMG industry of Bangladesh.

6.2.1.3 Country Risk (CR)

Country risk is the result of political, social and economic factors (Oetzel, Bettis, and Zenner 2001). Others have attempted to define country risks as factors affecting foreign direct investment (Kobrin 1978; Bergara, Henisz, and Spiller 1998; Fatehi and Safizadeh 1994; Nigh 1985). Due to some of the actions of political parties, the government and bureaucrats, a negative influence or risk may arise in a country. In this study, country risk comprises the ultimate result arising from the non-supportive role of government, non-cooperation and misunderstandings between the ruling party and the opposition, and the non-supportive activities of bureaucrats. Therefore, country risk is actually derived from the interaction of non-supportive political action and bureaucratic behaviour (Abdullah 2005; Clark and S.Kanter 2010). In the post-MFA period, violence in the RMG industry, political unrest, labour unrest, bureaucratic corruption and poor stakeholder relationships (Quddus 2001; Khondker , Razzak, and Ahmed 2005; Kabir 2007; Razzaque and Eusuf 2008; Clark and S.Kanter 2010; Saxena and Salze-Lozac'h 2010; Berg et al. 2011) have all increased the country risk.

The RMG business is international in nature. Country risk is considered as a significant factor in all activities of international business (Grosse and Behrman 1992; Meldrum 2000). Buyers from developed countries always try to remain competitive in business by locating their operations in low-wage countries and sourcing from those countries (Fraering and Prasad 1999). However, there are some disadvantages and complexities in addition to the advantages of outsourcing (Frear, Metcalf, and Alguire 1992; Birou and Fawcett 1993). Buyers select appropriate suppliers and an attractive outsourcing platform to achieve competitive advantage in their business taking into consideration the level of country risk. The level of risk also depends on the level of attraction of the outsourcing platform. A country may be an attractive outsourcing platform to the buyers when it ensures low-cost labour access, availability of raw materials, the quality of the infrastructure, skilled labour and scientific personnel, the country's demands and operating conditions, cultural nuances and legislation (Porter 1986; Goonatilake 1990; Birou and Fawcett 1993; Trompenaars and Hampden-Turner 1997; Prasad and Sounderpandian 2003). But if there is the lack of supportive political action and bureaucratic behaviour, the level of country risk becomes higher and, consequently, the country faces competition

with respect to quality, cost, time, commitment and compliance issues. When country risk is higher, it affects the internal stakeholders of the RMG industry's SC and weakens the competitiveness of the RMG industry (Kee 2005; Ahmed 2009; Clark and S.Kanter 2010; Berg et al. 2011) because buyers always try to find other suppliers to have a secure uninterrupted supply.

In a research work Abdin (2008) has mentioned that vindictive political environment, bureaucratic shackles, electricity crisis, currency adjustment policy pursued by the country, anomalies in the banking sectors, problems at the port, and the lack of some policy support from the government to sustain the country's falling competitiveness against its competitors in the international market are other serious causes to increase the country risk. These types of risk actually increase the barriers of RMG suppliers and decrease the drivers.

The RMG industry imports raw materials, say, within 7 days but take on additional 15 days to reach warehouse from the Chittagong port. About 54 formalities have to be observed to release a shipment of raw materials. These formalities increased the lead-time against overseas competitors (Abdin 2008). As the end consumers of the garment fashion market are becoming increasingly time-sensitive, a decrease in lead time, besides quality and cost criteria, is needed to win more orders from buyers(Asgari and Hoque 2013). This time sensitive risk and other issues demotivate the buyers to do business with RMG industry.

Moreover, the literature and 66% of respondents in the field study interviews supported the view that country risk (CR) influences internal stakeholders' drivers and barriers.

However, considering the above situations and the negative role of the external stakeholder element, the following hypotheses related to country risk are proposed:

Hypothesis 3a (H3a): Non-supportive country risk (CR) decreases the supply-side drivers (SD) of the RMG industry of Bangladesh.
Hypothesis 3b (H3b): Non-supportive country risk (CR) increases the supply-side barriers (SB) of the RMG industry of Bangladesh.
Hypothesis 3c (H3c): Non-supportive country risk (CR) decreases the demand-side drivers (DD) of the RMG industry of Bangladesh.
Hypothesis 3d (H3d): Non-supportive country risk (CR) increases the demand-side barriers (DB) of the RMG industry of Bangladesh.

There was no literature supporting the direct influence of country risk (CR) on competitiveness (COM) but the field study results supported the view that CR has a direct influence on COM. Therefore, the proposed hypothesis is:

Hypothesis 3e (H3e): Non-supportive country risk (CR) decreases the tendency to improve the competitiveness (COM) of the RMG industry of Bangladesh

6.2.2 Hypotheses related to internal stakeholders

In the issue of competitiveness, productivity, the working environment and stakeholder relationships are very important (Khondker , Razzak, and Ahmed 2005) in the RMG industry. Two types of stakeholders are involved in the SC of the RMG industry. The external stakeholders (as discussed above) are non-supportive and non-cooperative in numerous services needed by the internal stakeholders to make the SC efficient. The internal stakeholders are the suppliers of the final products and the buyers of the final products. Some studies in the literature about the internal stakeholder elements have been reviewed and are presented briefly in the following section. Berg et al. (2011) have mentioned three main stakeholders of the RMG industry SC, namely, the government, buyers and suppliers. The two internal stakeholders, buyers and suppliers, are influenced by the government and bureaucrats and, consequently, competitiveness is influenced by these internal stakeholders (Tsai, Yeh, et al. 2005; Verma and Seth 2010). Based on these internal stakeholders, four internal elements, namely, supply-side drivers, supply-side barriers, demand-side drivers and demand-side barriers, were considered as dependent constructs, having been identified through the literature review and field study (Adhikari and Weeratunge 2007b; Ahmed 2009; Berg et al. 2011; Sultana et al. 2011). The competitiveness of the RMG industry through SC performance actually depends on the direct influence of internal stakeholders' elements. The following sections present the influence of internal stakeholders on improving competitiveness and the development of relevant hypotheses.

6.2.2.1 Supply-side Drivers

Supply-side drivers are actually the strength of the suppliers (Ahmed 2009). There are many studies in the literature about supply-side drivers (SD) of the RMG industry that are playing a positive role in the RMG industry SC. Razzaque and Eusuf (2008) have mentioned some supply-side drivers, namely, domestic trade policy and producers' responses. In another study, Haider (2007) has also mentioned some drivers such as, the achievement of product

diversification and product upgrading in addressing the competitiveness issues. Drivers such as cheap and available labour, compliance with buyers' standards and GSP facilities are also stated in the literature of Adhikari and Weeratunga (2007); Islam and Deegan (2008); Nuruzzaman, Haque, and Rafiq (2010); and Sultana et al. (2011). Ahmed (2009) also revealed that low-cost labour, GSP facilities, duty drawback facilities, cash incentives and back-to-back letters of credit facilities are the suppliers' drivers and a major source of competitiveness in the RMG industry. The supportive elements of external stakeholders such as political action and bureaucratic behaviour increase the drivers of the suppliers and positively influence the competitiveness of the SC but non-supportive elements decrease the drivers of the suppliers and subsequently have a negative effect on competitiveness (Adhikari and Weeratunga 2007; Haider 2007; Ahmed 2009). The above literature and the field study have supported the influence of supply-side drivers on the competitiveness of the RMG industry.

Considering the above support and the influence of supply-side drivers (SD), this study has proposed the following hypothesis related to SD:

Hypothesis 4 (H4): Supply-side drivers (SD) positively influence the improvement of the competitiveness (COM) of the RMG industry of Bangladesh.

6.2.2.2 Supply-side Barriers

Barriers are defined as perceived or likely constraints (Quaddus and Didi 2005). In the RMG business, supply-side barriers are weaknesses (Ahmed 2009) in the SC. The barriers are weaknesses such as poor infrastructure, long lead time, lack of commitment and trust, being under pressure to reduce price, weak bargaining power, threats of choosing alternative suppliers, being dependent on raw materials, lack of cooperation, etc. Many researchers such as Adhikari and Weeratunga (2007) have mentioned barriers such as the lack of an educated and skilled labour force, poor infrastructure, poor management, lack of equipment, lack of domestic input and poor banking services. Halder and Kim (2012) have mentioned poor infrastructure facilities and lack of logistics support; Sultana et al. (2011) have revealed that quota-based exports, the quality of jobs, lower productivity, shortages of raw materials, limited market and political unrest are supply-side barriers. Moreover, in much of the literature (Kale 2007; Ahmed 2009; Berik and Rodgers 2009; Berg et al. 2011; Hossan, Sarker, and Afroze 2012), problems that are stated relate to backward

linkage industries, workers' rights, lack of skilled labour, lack of productivity, lack of good working conditions, numerous violations of workers' rights, the negative role of politicians, threats from bankers and bureaucrats, dependency on imported raw materials, low value-adding products, labour compliance, infrastructural constraints. In another research study, Quddus and Rashid (1999) have mentioned the politicians, bankers and bureaucrats who are creating barriers for the suppliers.

Razzaque and Eusuf (2008) have also mentioned barriers such as the lack of proper infrastructure, lack of safety in workplaces, very low wages, wage discrimination, and lack of skill development and training opportunities. Haider (2007) mentioned supply-side barriers in the RMG industry such as linkage expansion, compliance issues, price competitiveness, long lead time, and production and distribution time in relation to the issue of competitiveness. Moreover, in addition to the above support in the literature, an average of 76% respondents in the field study interviews supported the view that SB influences competitiveness.

Taking into consideration the above support from the literature and field study for the influence of supply-side barriers (SB), this study has proposed the following hypothesis related to SB:

Hypothesis 5 (H5): Supply-side barriers (SB) negatively influence the improvement of the competitiveness (COM) of the RMG industry of Bangladesh.

6.2.2.3 Demand-side Drivers

Drivers are defined as the perceived or expected benefits (Quaddus and Didi 2005). In the RMG business, demand-side drivers are the buyers' strengths which passively play positive roles in the SC (Ahmed 2009). Demand-side drivers are: strong bargaining power, offering a good price, a bulk customer, brand name, having a special facility for importing garments from member countries of the LDCs, trust and commitment, etc. (Wu et al. 2004; Rahman 2005; Zhao et al. 2008). Razzaque and Eusuf (2008) have mentioned the following matters which are treated as demand-side drivers: a favourable international trade environment, pressure from the buyers about maintenance of workers' rights, safe workplaces and good wages. When external stakeholders support buyers regarding the above matters, suppliers will be forced to maintain the required compliances. Consequently, the competitiveness of the RMG industry will improve. Another driver is buyers'

capability to outsource (Kale 2007). However, there is not very much support in the literature about demand-side drivers but there is a significant level of support from the field study: 54% of respondents in the field study interviews supported the view that demand-side drivers (DD) influence competitiveness.

Considering these above support and the influence of demand-side drivers (DD), this study is proposed a hypothesis related to DD;

Hypothesis 6 (H6): Demand-side drivers (DD) positively influence to the improvement of competitiveness (COM) of RMG industry of Bangladesh

6.2.2.4 Demand-side Barriers

As mentioned above, barriers are defined as perceived or likely constraints (Quaddus and Didi 2005). In the RMG business, demand-side barriers are buyers' weaknesses (Ahmed 2009) that play negative roles in the SC. Demand-side barriers include having a required shorter lead time, pressure of NGOs about suppliers violating human rights, different types of conditions and regulations imposed on the suppliers and different types of conditions and regulations imposed by the host government (Adhikari and Weeratunga 2007; Nuruzzaman 2001; Nuruzzaman, Haque and Rafiq 2010). The compliance issues, pressures to reduce price and issues about the lead time being raised by the buyers are also barriers (Rahman 2005; Claeys and Brachet 2008). Razzaque and Eusuf (2008) mentioned some barriers derived from buyers such as pressure to provide better working conditions, no wage discrimination, continuous pressures about international labour standards, etc. Berg et al. (2011) and Islam and McPhail (2011) have also stated in their research work about barriers such as compliance issues raised by the buyers and pressure to reduce operational disturbances. Information about other barriers such as the buyers' history, use of middlemen, trust and relationships came from the field study.

These above various types of pressure from the buyers make adverse situation in the garment business and pose the manufacturers under threat of losing business and competitiveness. The supply chain is an integrated manufacturing process wherein raw materials are converted into final products, then delivered to the buyers. Due to the complexity of supply chain nature and lack of policy support from the government, the manufacturers are unable to face the buyers side (demand side) barriers which negatively influence the improvement of competitiveness (Haque et al. 2011; Abdin 2008)

Nonetheless, besides the above support from the literature, 65% of respondents in the field study interviews supported the view that the demand-side barriers (DB) had influence on competitiveness.

Taking into consideration the above support and influence of demand-side barriers (DB), this study has proposed the following hypothesis related to DB:

Hypothesis 7 (H7): Demand-side barriers (DB) negatively influence the improvement of the competitiveness (COM) of the RMG industry of Bangladesh.

Based on the comprehensive model, 20 hypotheses describing 20 relationships have been developed. The comprehensive model consists of constructs and items (variables) explored from both the literature and field study. The following table 6.1 presents all of the hypotheses developed above.

Table 6.1: Summary of developed Hypothesis

Constructs	Link	Hypothesis	Hypothesis statement
Political Action(PA)	PA→CR	H1a	Non-supportive political action (PA) increases the country risk (CR)
	PA→SD	H1b	Non-supportive political action (PA) decreases the supply-side drivers (SD) of the RMG industry of Bangladesh
	PA→SB	H1c	Non-supportive political action (PA) increases the supply-side barriers (SB) of the RMG industry of Bangladesh
	PA→DD	H1d	Non-supportive political action (PA) decreases the demand-side drivers (DD) of the RMG industry of Bangladesh
	PA→DB	H1e	Non-supportive political action (PA) increases the demand-side barriers (DB) of the RMG industry of Bangladesh
	PA→COM	H1f	Non-supportive political action (PA) decreases the tendency to improve the competitiveness (COM) of the RMG industry of Bangladesh
Bureaucratic Behaviour(BB)	BB→CR	H2a	Non-supportive bureaucratic behaviour (BB) increases the country risk (CR)
	BB→SD	H2b	Non-supportive bureaucratic behaviour (BB) decreases the supply-side drivers (SD) of the RMG industry of Bangladesh
	BB→SB	H2c	Non-supportive bureaucratic behaviour (BB) increases the supply-side barriers (SB) of the RMG industry of Bangladesh
	BB→DB	H2d	Non-supportive bureaucratic behaviour (BB) increases the demand-side barriers (DB) of the RMG industry of Bangladesh
	BB→COM	H2e	Non-supportive bureaucratic behaviour (BB) decreases the tendency to improve the competitiveness (COM) of the RMG industry of Bangladesh.
Country Risk(CR)	CR→SD	H3a	Non-supportive country risk (CR) decreases the supply-side drivers (SD) of the RMG industry of Bangladesh
	CR→SB	H3b	Non-supportive country risk (CR) increases the supply-side barriers (SB) of the RMG industry of Bangladesh
	CR→DD	H3c	Non-supportive country risk (CR) decreases the demand-side drivers (DD) of the RMG industry of Bangladesh
	CR→DB	H3d	Non-supportive country risk (CR) increases the demand-side barriers (DB) of the RMG industry of Bangladesh.
	CR→COM	H3e	Non-supportive country risk (CR) decreases the tendency to improve the competitiveness (COM) of the RMG industry of Bangladesh
Supply side Drivers(SD)	SD→COM	H4	Supply-side drivers (SD) positively influence the improvement of the competitiveness (COM) of the RMG industry of Bangladesh.
Supply side Barriers(SB)	SB→COM	H5	Supply-side barriers (SB) negatively influence the improvement of the competitiveness (COM) of the RMG industry of Bangladesh
Demand side Drivers(DD)	DD→COM	H6	Demand-side drivers (DD) positively influence to the improvement of competitiveness (COM) of RMG industry of Bangladesh
Demand side Barriers(DB)	DB→COM	H7	Demand-side barriers (DB) negatively influence the improvement of the competitiveness (COM) of the RMG industry of Bangladesh.

6.3 Questionnaire Development

This section describes the development of a questionnaire to conduct the survey and to test the research hypotheses according to the comprehensive model as proposed in figure 5.13. This section also describes the development of measurement scales/instruments based on the final research model. However, the questionnaire was developed based on the existing relevant literature and the field study. There are in total eight constructs and 56 variables or items in the comprehensive research model. Multiple items have been developed for each construct to ensure valid measurement and reliability. To develop the measurement items, the extensive literature review was undertaken first followed by the field study.

There are four sections (demographic, external stakeholder, internal stakeholder and competitiveness) in the questionnaire in accordance with the focus of the study and the comprehensive model. The first section contains questions about the demographic background of respondents and about their organisations. Different types of categorical questions were considered here including gender, age, education, current position, years in current organisation, years in current position, field of work and organisation's growth status. The second and third sections focused on measuring the influential formative and reflective constructs in the process of the SC as proposed in the research model. In these two sections, respondents were asked to rate their opinion on the statements as per a 6-point Likert scale regarding the elements of external and internal stakeholders involved in the RMG industry SC. The last section was constructed with questions to measure the final construct "competitiveness" which is the ultimate goal of the proposed research model. In this last section, respondents were also asked to rate their opinion on the statements regarding achieving competitiveness as per a 6-point Likert scale.

6.3.1 Measurement instrument development

This section describes the development of measurement instruments based on the comprehensive model for improving competitiveness in the RMG sector through the SC process. The model contains eight constructs and 56 items/variables. Taking into consideration these items, the questionnaire comprises 56 main questions in addition to the questions regarding demographic issues. The respondents' demographics were measured by nominal and ordinal scales (Malhotra, 2004) and the remainder of the 56 measurement instrument items were measured by interval scale (Malhotra, 2004).

Using the interval scale, a 6-point Likert scale was chosen as it is argued that respondents choosing a neutral default option (through having six points) will be prevented (Malhotra, 2004). It is also argued that respondents from Asian countries have a high tendency to choose the neutral response (Trompenaars & Hampden-Turner, 1997). Therefore, respondents were asked to choose the appropriate number on a scale of '1' (strongly disagree) to '6' (strongly agree). The 6-point Likert scale allowed the following options: '1' (strongly disagree), '2' (disagree), '3' (somewhat disagree), '4' (somewhat agree), '5' (agree) and '6' (strongly agree). These six options were presented to respondents for all 56 items. Cooper and Schindler (2008) reiterated that the respondents' preference to choose the middle response would lead to a central tendency error. Therefore, the middle response for a 7-point Likert scale "neither agree nor disagree" was removed and the final result of a 6-point Likert scale for all items was accepted.

Two types of constructs are broadly used in studies in the literature, that is, reflective and formative (Roberts and Thatcher 2009). Constructs are not inherently formative or reflective in nature: a construct can be exhibited as having either formative or reflective items (indicators) depending upon the relationship between an item and the latent construct with which it is associated (MacKenzie, Podsakoff, and Podsakoff 2011).

The construct is called reflective when different items of a construct represent reflection or manifestations of that construct (Fornell and Bookstein 1982; Gefen, Straub, and Boudreau 2000). Reflective items are deemed to be caused by the latent construct: any change to or removal of an item does not change the result or the essential nature of the corresponding latent construct. Therefore, items of the reflective construct are internally consistent and correlated (Fornell and Bookstein 1982; Nunnally and Bernstein 1994).

On the other hand, formative items (indicators) are viewed as causes of constructs. Hence, a formative construct is formed or induced by its indicators or items (Fornell and Bookstein 1982; Roberts and Thatcher 2009). The formative items show the opposite direction of causal relationship (Diamantopoulos and Winklhofer 2001). Due to the causal relationship between items and the latent construct, changes in the items do not cause changes in the construct and changes in the construct do not cause changes in the items (Jarvis, Mackenzie, and Podsakoff 2003). Therefore, formative items are not correlated and measure different underlying dimensions of the latent construct (Chin 1998).

Jarvis, MacKenzie and Podsakoff (2003) have developed a set of conceptual criteria that can be used as a guideline for determining whether the construct is reflective or formative. In accordance with findings from Roberts and Thatcher (2009), the differences between formative and reflective constructs and their items (indicators) are briefly presented in table 6.2.

Taking into consideration the above concepts for defining constructs, this research has applied Jarvis, Mackenzie, and Podsakoff's (2003) four primary decision rules for determining whether the constructs, namely, political action (PA), bureaucratic behaviour (BB), country risk (CR) should be conceptualized as reflective or formative. In this study, considering the direction of causality, of the eight constructs above three have been declared as formative and the other five, that is, supply-side drivers (SD), supply-side barriers (SB), demand-side drivers (DD), demand-side barriers (DB) and competitiveness (COM) have been declared as reflective.

Table 6.2: Differences between formative and reflective indicators

Concept	Formative Indicators	Reflective Indicators
Causality	Formative indicators are viewed as causes of constructs. The construct is formed or induced by its measures (Fornell and Bookstein 1982).	Constructs are viewed as causes of reflective indicators (Bollen 1989). Reflective indicators represent manifestations of a construct (Fornell and Bookstein 1982).
Interchangeable	Not interchangeable "omitting an indicator is omitting a part of the construct" (Bollen and Lennox 1991).	Interchangeable – the removal of an item does not change the essential nature of the construct. Although every item need not be the same, researchers need to capture it.
Validity	Indicators are exogenously determined; hence, correlations are not explained by the measurement model (Bollen 1989).	Validity of indicators can be assessed through the measurement model (Bagozzi, Yi, and Phillips 1991).

Source: Roberts and Thatcher (2009)

Thus of the total number of 56 items under the eight constructs in the comprehensive model, 19 items were formative and 37 items were reflective.

However, for each of the eight constructs, multiple item measures were applied to provide a comprehensive evaluation with regard to achieving competitiveness in the RMG industry SC. As mentioned before, the measurement items of the construct and the related statements were based on the final model for improving competitiveness which evolved from the field study and related literature review. Details of the measurement items for each construct are presented in the following sections.

6.3.1.1 Questionnaire section one: Demographic measures

The objective of this section was to collect demographic particulars about the respondents involved in this research. The demographic particulars included the respondents' details such their name, gender, age, education, experience and position at the garments' company and the company's details such as its present status, growth, competitiveness, etc. Table 6.3 presents the demographic measurement items, measurement statements and related references.

Table 6.3: Measurement of demographics

Constructs	Variables/Items	Statement/Measures	Sources(references)
Demographic	Gender (D1)	Nominate gender	(Morris and Venkatesh 2006; Moores and Chang 2006)
	Age (D2)	Nominate age group	(Moores and Chang 2006)
	Education(D3)	Nominate the highest level of education	(Kelley, Ferrell, and Skinner 1990; Robinson and Sexton 1994)
	Current position(D4)	Nominate the level of current position	(Ramasamy and Ting 2004)
	Experience (D5)	Nominate the level of experience	Developed for this study
	Size of company(D6)	Total number of employees	Developed for this study
	Growth of the company(D7)	Nominate the level of growth	Developed for this study

The questions in this section were measured by nominal and ordinal scales. A nominal scale was used for only one question in this section, that is, D1. An ordinal scale was used for the questions D2, D3, D5, D6 and D7. An open-ended question was used for the question D4.

6.3.1.2 Questionnaire section two: External stakeholders in the RMG industry's supply chain

Some stakeholders are indirectly involved with the RMG industry's SC. They are not directly influencing the internal stakeholders and ultimately the industry's competitiveness but they have sufficient influence to make the SC more competitive and to improve its competitiveness. The government, political parties and bureaucrats are examples of this type of stakeholder. They influence the internal stakeholder and the RMG industry's SC through their different types of activities and role. Therefore, two constructs, political action (PA) and bureaucratic behaviour (BB) have been considered to align the questionnaire to the comprehensive research model. Another construct, country risk (CR), is the ultimate result or interaction of those two constructs and it has also been considered with regard to the competitiveness of the RMG industry's SC.

6.3.1.2.1 Political action (PA)

Political action means the political role of the government and the opposition parties. It reflects the political activities that occur in the development process of international business such as RMG exports. It refers to the direct influence of external stakeholders or country factors such as political parties on competitiveness or via supply-side and demand-side issues. There are many aspects such as functional support, utilities support, logistics support, development of relationships among stakeholders, support in trade facilitating services, etc. that need to be considered in the SC of the RMG business process. Six items were used to measure the political action (PA) construct as per the final model. These six items were as follows: political role in policy design (PA1), political role in utilities support (PA2), insufficient logistics support (PA3), stakeholder relations (PA4), trade facilitating services (PA5) and government roles (PA6).

Taking into consideration these items, six measurement statements were prepared and in accordance with these statements, six questions were presented in the questionnaire to measure the PA construct. Table 6.4 describes the details for the PA construct including references.

Table 6.4: Measurement of political action

Constructs	Variables/Items	Statement/ Measures	Sources	References
Political Action(PA)	Political role in policy design (PA1)	Political parties are not sincere and careful in designing a good and effective policy with ref. to RMG industry.	Literature review/ Field study	Miller 1993; Hadjikhani et al. 1996; Soss 1999; Adhikari et al. 2007; Holtburg et al. 2007; Berik et al. 2009
	Political role in utilities support (PA2)	Political parties are not giving proper attention to the uninterrupted utilities supply with ref. to RMG industry.	Literature review/ Field study	Hadjikhani et al. 1996; Soss 1999; Uddin 2006; Adhikari et al. 2007; Holtburg et al. 2007; Cheo et al. 2011
	Insufficient logistics support (PA3)	Political parties are not giving proper attention to the development of logistics (transportation, warehousing and shipping) systems.	Literature review/ Field study	Hadjikhani et al. 1996; Razzak 1997; Adhikari et al. 2007; Haider 2007; Holtburg et al. 2007
	Stakeholder relations (PA4)	There is no political initiative to develop stakeholder relations.	Literature review/ Field study	Hadjikhani et al. 1996; Reed 2000; Holtburg et al. 2007; Razzaque et al. 2008; Barro et al. 2009; Berg et al. 2011
	Trade facilitating services (PA5)	Political parties are not giving proper attention to the development of facilitating services (banking services, customs, export oriented support, etc.).	Literature review/ Field study	Hadjikhani et al. 1996; Adhikari et al. 2007; Holtburg et al. 2007; Nuruzzaman 2007; Nuruzzaman 2008; Uzzaman 2010
	Government role (PA6)	The government does not play any role to decrease labour unrest, destructive political action, etc.	Literature review/ Field study	Hadjikhani et al., 1996; Absar, 2003; Hillman, 2003; Hillman & Wan, 2005; Khondker et al., 2005; Adhikari, 2007; Haider, 2007; Holtburg et al., 2007; Berik et al., 2009

6.3.1.2.2 Bureaucratic behaviour (BB)

The construct, bureaucratic behaviour (BB), refers to the influence of external stakeholders like bureaucrats on the RMG industry's SC competitiveness directly or via suppliers' side issues. Bureaucrats are responsible for executing the decisions of the government or political leaders to maintain the day-to-day regulatory and service functions of the state. The context of BB is revealed by bureaucratic behaviours and decisions. The bureaucrats are part of the government of a country and play an important role in making decisions regarding administration and development in any sector of that country.

Bureaucrats play an important role in any business process or commercial transaction. Therefore, as an external stakeholder, BB is a very important and influential measure with respect to competitiveness. There are six measurement items or variables to measure the construct. Table 6.5 shows the details of the six variables with their related references.

Table 6.5: Measurement of bureaucratic behaviour (BB)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Bureaucratic Behaviour(BB)	Administrative support system (BB1)	Bureaucratic systems in office management are creating hindrances to the increase in competitiveness of the RMG industry of Bangladesh	Literature review/ Field study	Nimir et al. 1982; Hadjikhani et al. 1996; Quddus et al. 1999; Uzzaman 2010
	Professionalism and support services (BB2)	Due to lack of professionalism, bureaucrats are not helpful in support services (e.g. banking services, diplomatic support etc.)	Literature review/ Field study	Hadjikhani et al. 1996; Quddus et al. 1999; Adhikari et al. 2007; Berg et al. 2011
	Lack of coordination among the officials (BB3)	There is insufficient coordination among the officials of various supporting offices with regard to the RMG business	Literature review/ Field study	Hadjikhani et al. 1996; Quddus 2001; Adhikari et al. 2007; Berg et al. 2011; Islam et al. 2012
	Inefficient documentation and approval system (BB4)	Documentation with reference to the RMG business and their approval system is inefficient and slow	Literature review/ Field study	Hadjikhani et al. 1996; Quddus 2001; Adhikari et al. 2007
	Poor management, knowledge and delivery of performance (BB5)	Bureaucrats have no proper knowledge about the RMG business and their delivery of services is not good	Literature review/ Field study	Hadjikhani et al. 1996; Quddus et al. 1999; Islam et al. 2012
	Corruption and non-co-operational attitude (BB6)	Bureaucrats are always non cooperative and they demand bribes for all types of services	Literature review/ Field study	Hadjikhani et al. 1996; Quddus et al. 1999; Quddus 2001; Uzzaman 2010

6.3.1.2.3 Country risk (CR)

The construct, country risk (CR) is the result of political, social and economic factors. It also includes risks arising from a variety of national differences in economic structures, policies, socio-political institutions, geography and currencies. Country risk always increases due to activities of political parties, the government and bureaucrats.

In this study, country risk encompassed the ultimate result of different government roles, noncooperation and misunderstanding between the ruling party and the opposition, and the activities of bureaucrats. The RMG industry's SC will be affected when CR is higher which will weaken the competitiveness of the RMG industry's SC. Moreover, in this study, CR referred to the influence of external stakeholders on the RMG industry's SC competitiveness as being a combined result of political action and bureaucratic behaviour.

The CR construct was measured by seven items as per the final model. The seven items were as follows: political environment (CR1), trust and commitment among the stakeholders (CR2), business environment (CR3), unskilled labour and productivity (CR4), lack of government support (CR5), import dependency (CR6) and unawareness of government and bureaucrats (CR7).

These seven measurement items were used to measure the CR construct. All the items are formative in nature. The CR construct and its measurement items are listed in the table 6.6.

Table 6.6: Measurement of country risk (CR)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Country Risk (CR)	Political environment (CR1)	Unstable and corrupt political environment in Bangladesh	Literature review/ Field study	Ring et al. 1990; Hadjikhani et al. 1996; Quddus et al. 1999; Otzel et al. 2001; Holtburg et al. 2007; Uzzaman 2010; Hossan et al. 2012
	Trust and commitment among the stakeholders (CR2)	Lack of trust and commitment among the government or political parties and suppliers with ref. to RMG industry	Literature review/ Field study	Jones 1995; Hadjikhani et al. 1996; Selnes 1998; Reed 2000; Hadjikhani et al. 2005; Holtburg et al. 2007; Clark et al. 2010; Hossan et al. 2012
	Business environment (CR3)	The business environment with ref. to RMG industry is not good in Bangladesh	Literature review/ Field study	Hadjikhani et al. 1996; Haider 2007; Clark et al. 2010; Berg et al. 2011; Hossain et al. 2012; Hossan et al. 2012

Constructs	Variables/Items	Statement/ Measures	Sources	References
	Unskilled labour and productivity (CR4)	Labourers' productivity is not enough as the labourers of the Bangladeshi RMG industry are not educated and trained	Literature review/ Field study	Goonatilake 1990; Nicholas et al. 1995; Prasad 2003; Adhikari et al. 2007; Razzaque et al. 2008; Berg et al. 2011; Hossan et al. 2012
	Lack of government support (CR5)	Government does not provide logistics support for the development of RMG business.	Literature review/ Field study	Hadjikhani et al. 1996; Hadjikhani et al. 2005; Haider 2007; Clark et al. 2010; Berg et al. 2011; Hossan et al. 2012
	Import dependency (CR6)	The RMG industry, especially the woven sector of this industry, is highly dependent on imported raw materials	Literature review/ Field study	Adhikari et al. 2007; Haider 2007; Nuruzzaman 2009; Nuruzzaman 2001; Nuruzzaman et al. 2010;Berg et al. 2011; Hossan et al. 2012
	Unawareness of government and bureaucrats (CR7)	Government and bureaucrats have no clear concept and knowledge about the RMG industry of Bangladesh	Literature review/ Field study	Quddus et al. 1999; Choudhury et al. 2005; Berg et al., 2011; Hossan et al. 2012

6.3.1.3 Questionnaire section three: Internal stakeholders in the RMG industry's supply chain

The buyers and the manufacturers (suppliers) of RMG products are the two main internal stakeholders in the RMG industry's SC. Many issues related to the buyers' and suppliers' activities have been identified from the previous literature and field study according to the comprehensive research model. Some issues are strengths and some issues are barriers for the suppliers and buyers. Strengths are indicated as drivers in the supply chain and weaknesses are the barriers of the supply chain. However, four constructs have been identified from the supply and demand side as per the research model.

6.3.1.3.1 Supply-side drivers (SD)

In the SC of the RMG industry, the buyers (customers) and suppliers (manufacturers) are the two main important stakeholders (Berg et al. 2011; Razzaque and Eusuf 2008). In the RMG business, supply-side drivers are the suppliers' strengths which passively play positive roles for the SC (Adhikari and Weeratunge 2007; Ahmed 2009).These are in the form of competitive price, cheap labour, quality

Table 6.7: Measurement of supply-side drivers (SD)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Supply-Side Drivers (SD)	Cheap and available labour (SD1)	Labourers are available and cheap in the RMG industry of Bangladesh	Literature review/Field study	Adhikari et al. 2007; Nuruzzaman et al. 2010: Nuruzzaman 2001: Razzaque 2008; Berg et al., 2011; Hossan et al. 2012; Haider 2007
	Complying with buyers' standards and needs (SD2)	Manufacturers are capable of complying with the buyers' requirements	Literature review/Field study	Islam and Deegan 2008; Razzaque 2008; Adhikari 2006
	Favourable international trade environment (GSP facility) (SD3)	Manufacturers are enjoying a favourable international trade environment	Literature review/Field study	Adhikari et al. 2007; Razzaque 2008 ; Haider 2007; Nuruzzaman et al. 2010; Berg et al., 2011; Hossan et al. 2012
	Price and quality (SD4)	Manufacturers are capable of offering competitive price and quality	Literature review/Field study	Razzaque 2008 Saxena 2010; Haider 2007; Nuruzzaman 2009
	Efficiency (and experience, convincing power, loyalty) (SD5)	Manufacturers are experienced and efficient enough	Literature review/Field study	Razzaque 2008; Nuruzzaman 2008; Adhikari et al 2006
	Loyalty and devotedness (work spirit) (SD6)	Manufacturers are loyal and devoted to their buyers	Field study	Field study

products, marketing strength, experience in working with reputed brands and the largest companies like Wal-Mart, Tesco, H&M, etc.(Rahman 2005; Rahman and Anwar, 2006). However, after undertaking the literature review and field study, six drivers were finalised under the construct of SD, thus forming the measurement items of SD. All these items were reflective in nature. The SD construct and its measurement items are listed in the above table 6.7. These items were finally considered in developing the questionnaire for the field study.

6.3.1.3.2 Supply-side barriers (SB)

As previously indicated, barriers are defined as perceived or likely constraints (Quaddus and Didi 2005). In the SC of the RMG business, supply-side barriers are the weaknesses (Adhikari and Weeratunge 2007; Ahmed 2009) of the RMG industry. The barriers are factors such as: poor infrastructure, long lead time, lack of commitment and trust, weak bargaining power, lack of cooperation, lack of government support, etc. (Nuruzzaman, Haque, and Rafiq 2010; Adhikari and Weeratunge 2007b; Kale 2007; Nuruzzaman 2001; Berg et al. 2011; Halder and Kim 2012; Sultana et al. 2011). There were 10 supply-side barriers that were confirmed after the literature review and field study. As supply-side barriers are an important issue in the RMG industry's SC, this element has been considered as an important construct from the internal stakeholders' point of view.

Moreover, as an internal stakeholder, SB is a very important and influential measure of competitiveness. There were ten measurement items or variables used to measure the SB construct. Table 6.8 shows the details of the items with their related references.

Table 6.8: Measurement of supply-side barriers (SB)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Supply-Side Barriers (SB)	Lack of raw materials (SB1)	Manufacturers are facing inadequate and regular lack of raw materials' supply	Literature review/ Field study	Nuruzzaman 2001: Nuruzzaman et al. 2010; Adhikari et al. 2007; Haider 2007; Islam et al 2012; Habib 2009
	Import dependency and long lead time (SB2)	Manufacturers are dependent on imported raw materials that increase the lead time	Literature review/ Field study	Nuruzzaman, 2001; Nuruzzaman et al. 2010; Adhikari et al. 2007; Kaes et al. 2009; Haider 2007; Islam et al 2012
	Lack of govt. knowledge and role (SB3)	Manufacturers do not get proper support from the government and bureaucrats due to lack of knowledge about RMG business	Literature review/ Field study	Razzaque et al 2008; Khandker 2011; Ahmed 2009
	Stakeholder relationships (SB4)	Relationships are not good among the stakeholders (buyers, suppliers, government officials) in the supply chain	Literature review/ Field study	Jones 1995; Reed 2000; Saxena et al. 2010; Abdin 2008; Nidhi Khosla 2009
	Lack of business and technological knowledge (SB5)	Many manufacturers have insufficient business and technical knowledge to run the RMG business	Literature review/ Field study	Adhikari et al. 2007; Adhikari 2006 Islam et al 2012; Ahmed 2009
	Political disturbance (SB6)	Manufacturers are always facing various political disturbances	Literature review/ Field study	Hossan et al. 2012; Berg et al 2001; Razzaque et al 2008; Islam et al. 2012
	Unfavourable bureaucratic behaviour (SB7)	Bureaucrats are not supportive in the smooth running of RMG supply chain process	Literature review/ Field study	Adhikari et al. 2007; Adhikari 2006; Berg 2011; Razzaque et al 2008; Islam 2012
	Lack of functional support and facility (SB8)	Manufacturers are not getting proper support in policy making and other facilitating services	Literature review/ Field study	Adhikari et al. 2007; Adhikari 2006; Berg 2011; Islam 2012;
	Lack of skilled labour and productivity (SB9)	Manufacturers are facing problems with the shortage of trained and skilled employees.	Literature review/ Field study	Adhikari et al. 2007; Adhikari 2006; Moazzem 2011; Islam 2012; Claeys 2008; Ahmed 2009
	Lack of attention on the workers' rights (SB10)	Manufacturers are facing the problem of workers' unrest due to lack of concern about workers' rights	Literature review/ Field study	Uddin 2006 ; Adhikari 2006; Hossan et al. 2012; Claeys 2008

6.3.1.3.3 Demand-side drivers (DD)

In the SC of the RMG industry, the buyers are one of the most important stakeholders (Berg et al. 2011; Razzaque and Eusuf 2008). In the RMG business, demand-side drivers are the buyers' strengths which passively play positive roles in the SC (Razzaque and Eusuf 2008; Ahmed 2009). Demand-side drivers include the

following: strong bargaining power, ability to choose alternative suppliers from another country, ability to offer a good price, a bulk customer, brand name, special facility like GSP or quotas for importing garments from member countries of the LDCs, trust and commitment, etc. (Wu et al. 2004; Rahman 2005; Zhao et al. 2008). Two additional strengths were found in the field study, namely, buyers' capacity to purchase and credit history. Therefore, after the field study and literature review, six drivers were selected for this study and to develop the questionnaire.

Furthermore, as an internal stakeholder, buyers' strengths or demand-side drivers (DD) have an important role in the RMG business and also in its SC in improving competitiveness. There were six measurement items or variables used to measure the DD construct. Table 6.9 shows the details of the items with their related references.

Table 6.9: Measurement of demand-side drivers (DD)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Demand-Side Drivers (DD)	Favourable bargaining power (DD1)	Buyers have bargaining power as it is the buyers' market	Literature review/ Field study	Wu et al., 2004; Zhao et al., 2008
	Flexibility and less formal (DD2)	Flexible and less formal buyers have more acceptability in doing business with Bangladeshi RMG sector	Field study	Field study
	Buyers' brand (DD3)	Manufacturers are willing to do business with buyers' reputed brand	Literature review/ Field study	Wu et al., 2004; Adhikari et al., 2007; Zhao et al., 2008
	Facilities from the local country's government (DD4)	Favourable international trade environment for Bangladesh is helpful for the buyers to do business with Bangladeshi RMG sector	Literature review/ Field study	Wu et al., 2004; Razzaque et al., 2008; Zhao et al., 2008
	Bulk and frequent purchase (DD5)	Buyers who place bulk orders and purchase regularly get more advantages in RMG business	Field study	Field study
	Buyers' credit history (DD6)	Buyers with good transaction/credit history get greater RMG business	Field study	Field study

6.3.1.3.4 Demand-side barriers (DB)

Demand-side barriers mean barriers that are created by or in regards to the buyers. In the RMG industry SC, buyers can create a problem in terms of improving the competitiveness of the RMG industry. In the RMG business, demand-side barriers are buyers' weaknesses (Adhikari and Weeratunge 2007; Ahmed 2009) which play negative roles in the SC. Barriers include the pressure for shorter lead time; raising the issue of NGOs' complaints about human rights and better working conditions;

pressures with regard to international labour standards; different types of conditions and regulations imposed on the suppliers; and different types of conditions and regulations imposed by the local Bangladeshi government (Nuruzzaman 2001; Nuruzzaman, Haque, and Rafiq 2010; Adhikari and Weeratunge 2007; Razzaque and Eusuf 2008). Compliance issues, pressure to reduce prices and lead time barriers were raised by the buyers (Rahman, Bhattacharya, and Moazzem 2008; Rahman 2005; Claeys and Brachet 2008; Islam, Begum, and Rashed 2012; Islam and Deegan 2008).

Nonetheless, after the above literature review and field study, finally six items were identified for measuring the demand-side barriers construct. Table 6.10 shows details of the items with their related references.

Table 6.10: Measurement of demand-side barriers (DB)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Demand-Side Barriers (DB)	Compliance issues	Compliance issues arising from the buyers create obstacles for RMG business	Literature review/ Field study	Islam et al. 2008; Islam et al. 2011; Razzaque et al. 2008
	Various terms and conditions (buyers)	Terms and conditions from the buyers create problems for regular RMG business	Literature review/ Field study	Claeys et al 2008; Razzaque et al. 2008; Islam et al. 2008; Adhikari et al. 2007
	Tariff and regulatory issues	Buyer-side tariff and regulatory issues create problems for RMG business	Literature review/ Field study	Claeys et al 2008; Razzaque et al. 2008; Islam et al. 2008; Adhikari et al. 2007
	Use of middlemen	Doing business via middlemen make the supply chain longer	Literature review/ Field study	Uddin, 2006; Adhikari et al. 2007; Razzaque et al. 2008
	Trust	Buyers' lack of trust with the suppliers make the supply chain inefficient	Field study	Field study
	Relationships	Weak relationships between buyers and suppliers make the supply chain inefficient	Literature review/ Field study	Wu et al. 2004; Zhao et al. 2008; Razzaque et al. 2008

6.3.1.4 Questionnaire section four

This was the final stage of the comprehensive model for improving competitiveness. In this stage, some measures or items were initially finalised to measure the competitiveness construct. Later on, the questionnaire was developed to collect quantitative data in connection with improving the competitiveness of the Bangladeshi RMG industry.

6.3.1.4.1 Competitiveness (COM)

Competitiveness is the ability to compete. A few definitions of competitiveness exist in the literature. Competitiveness is defined as the ability to sustain trade in the local and global environment (Rooyen, Stroebel, and Esterhuizen 2010).

Porter (1990) defined competitiveness as productivity growth that is reflected in either lower cost or differentiated products that command premium prices. Competitiveness can be defined as the ability of a firm to design, produce and/or market products superior to those offered by competitors, considering the price and non-price qualities (D'Cruz and Rugman 1992; Ambastha and Momaya 2004). In this study, competitiveness is defined as the ability to sustain a global export business by increasing productivity and reducing cost and lead time. Moreover, after the literature review and field study, nine items were considered to measure the competitiveness construct of the RMG industry. Table 6.11 presents the items used to measure competitiveness. Taking into consideration these nine items, statements were made for the questionnaire which was used to collect quantitative data.

Table 6.11: Measurement of competitiveness (COM)

Constructs	Variables/Items	Statement/ Measures	Sources	References
Competitiveness(COM)	Productivity (COM1)	Productivity at all stages of supply chain improve competitiveness	Literature review/ Field study	Porter, 1990; Rahman et al. 2006; Quddus et al. 1999 ; Ferdousi et al 2009
	Cost efficiency (COM2)	Cost efficiency in different stages of supply chain achieve competitiveness	Literature review/ Field study	D'Cruz, 1992; Ambastha, 2004; Quddus et al. 1999; Ferdousi et al 2009
	Stakeholder relations (COM3)	Collaborative relationships among the stakeholders of the supply chain improve competitiveness	Literature review/ Field study	Jones, 1995; Reed, 2000 ; Khondker et al. 2005; Berik et al. 2009; Saxena 2010
	Delivery time or lead time (COM4)	Reduction of lead time through appropriate activities(operational and transactional) in the supply chain improves competitiveness	Literature review/ Field study	Bhatnagar, 2005; Quddus et al. 1999; Nuruzzaman 2009; Nuruzzaman 2008; Kaes 2009; Claeys et al 2008; Ferdousi et al 2009
	One-stop service (COM5)	One-stop service in domestic RMG-related activities in the upstream and downstream supply chain ensures competitiveness	Literature review/ Field study	Buckley et al., 1988; Nuruzzaman 2001; Nuruzzaman 2007; Razzaque et al. 2008; Ferdousi et al 2009
	Government control and support(COM6)	Government support at all levels of RMG-related activities improves competitiveness	Literature review/ Field study	Kee 2005;Absar 2003; Razzaque et al. 2008
	Quality product and competitive price (COM7)	Competitive price and quality of RMG products ensure competitiveness	Literature review/ Field study	Absar 2003;Adhikari et al. 2007; Razzaque et al. 2008; Claeys et al 2008;
	Reduction of import dependency (COM8)	Reduction of import dependency improves competitiveness	Literature review/ Field study	Adhikari et al. 2007; Nuruzzaman 2009; Nuruzzaman 2008; Razzaque et al. 2008; Halder et al 2012
	Technological advances (COM9)	Technological advances at all levels of RMG supply chain improve competitiveness	Literature review/ Field study	Adhikari et al. 2007; Razzaque et al. 2008

6.4 Pre-testing the Research Instrument

The questionnaire was carefully investigated to test the validity of the questionnaire and to rectify any measurement-problem. This was also done to find out if there were any abnormalities in the questionnaire. The questionnaire was distributed among 10 managers, as suggested by Frazer and Lawley (2000). The whole process of pre-testing was discussed in greater detail in chapter 4, section 4.6.2. After receiving feedback, some modifications were made. For example, a question related to the competitiveness construct (COM1) "Manufacturers' productivity should be increased to improve competitiveness" was in the initial questionnaire but, after feedback, a modification was made so that it then became "Productivity at all stages of the supply chain improve competitiveness" and this was included in the final questionnaire. The complete questionnaire has been attached in appendix-3.

6.5 Summary

This chapter presented the development of the 20 hypotheses derived from the conceptual research model finalised in chapter 5. The rationalisation for each hypothesis was presented in detail. This chapter also described in detail the development of the questionnaire, that is, the survey instrument which was based on the eight constructs identified in the conceptual model. In total, 56 items were derived for this questionnaire under the eight constructs. The items were thoroughly referenced from both relevant literature and field study data. To test the validity of the questionnaire, a pilot study was carried out. The final questionnaire was then distributed for the survey. The following chapter will discuss the analysis of the quantitative data in the survey.

CHAPTER 7

Survey and Quantitative Data Analysis[5]

7.1 Introduction

Previous chapters have developed the hypotheses and the questionnaire to test the comprehensive research model as proposed earlier for enquiring about the improvement of competitiveness in the RMG industry of Bangladesh. A survey was conducted on managers of marketing and merchandising departments working in different garment companies in Bangladesh. As a result, data from 253 valid respondents were collected. Using these data, chapter 7 presents the empirical results of the data analysis using partial least squares (PLS) procedure based on the structural equation modelling (SEM) technique (Chin 1998a). Analysis of the measurement model for item reliability, internal consistency, convergent validity and discriminant validity is conducted first. This is followed by the analysis of the structural model using the bootstrapping procedure to evaluate the significance of the paths in the model and to measure the explained variance, R^2.

Therefore, the organisation of this chapter is as follows. This chapter starts with the overview of the survey that was undertaken to provide the details for this method. A descriptive analysis of the survey respondents is then presented, generated by IBM SPSS 21 version in order to understand the demographics of the sample population. Following this, the empirical results from the survey are presented followed by a discussion section.

[5]Part of this chapter has been presented at the following conferences:

Nuruzzaman, M., Quaddus, M., Jeeva, A. and Khan, E. Ahmed (2013), " The influence of External Stakeholder in the Competitiveness of Ready-Made Garment (RMG) Industry: A study on RMG Supply Chain in Bangladesh", *In proceedings of the Business & Economics Society International Conference (B&ESI),* January 7-10, Perth, Western Australia

Nuruzzaman, M.(2013), " The influence of Bureaucratic Behaviour to Improve the Competitiveness of RMG industry*", In proceedings of Emerging Research Initiatives and Development in Business, CGSB Research Forum,* 9-10 May, Curtin University, Perth, Western Australia

Nuruzzaman, M., Chowdhury, M., Quaddus, M. and Jeeva, A. (2013), "()Achieving Competitiveness through Analysing Supply Chain: A Test of Political Stakeholder's Action in Readymade Garment (RMG) Industry of Bangladesh" *In proceedings of the 3rd International Forum & Conference on Logistics and Supply Chain Management(LSCM),* June 27-29, Bali, Indonesia

7.2 Overview of the Survey

7.2.1 Administration of the survey

The first phase of the survey was conducted among more than 15 private sector organisations of RMG industry in the city of Dhaka, Bangladesh. In conducting that survey, the researcher (the author) himself was physically present and worked for almost two months with respondents to collect data and questionnaires. The organisations were selected based on the BGMEA member list (Batexpo, 2010). Taking into consideration accessibility, 70 organisations were purposively selected for this survey. In this survey, 580 questionnaires were distributed to different organisations directed to top- and middle-level executives and managers who had sufficient job experience in marketing and merchandising departments in the selected organisations. The questionnaire was distributed personally through the researcher and the research assistant by contacting the human resource (HR) department managers, departmental head and, sometimes, directly to the prospective respondents. Many questionnaires were distributed electronically to respondents' email addresses. The reason for choosing the HR departments in the targeted organisations was that they had records of the managers working in their organisations, thus, it was easier to contact them. During the survey, the researcher (the author) trained three people. They were employed to distribute and collect the survey questionnaire. Follow-up calls and face-to-face meetings with the HR managers were conducted to collect the survey. In the first phase, through two steps, (131 + 77) 208 questionnaires were collected from the respondents with 34 (10 + 24) responses received via email. The second phase was started after the researcher's return to Curtin University in Australia.

In the second phase, the researcher communicated on a regular basis with the help of the three research assistants to distribute and collect the questionnaires. In addition, telephone calls were frequently made and emails sent to the organisations and directly to the respondents. In this stage, 77 questionnaires were collected within one-and-a-half months of which 24 responses came through email but the remaining 45 questionnaires were collected by frequently sending reminders and leaving messages by telephone calls and email for the next three to four months. Of these 45 returned questionnaires, 15 responses were received via email. The purpose of multiple contacts with respondents was to reduce the non-response bias by

increasing the return rate (Bordens and Abbott 2008). The purposive sampling procedure was the sampling design applied in this study (Creswell 2009; Malhotra 2004). At the end of the second phase of the distribution of the questionnaire, 122 (77 + 45) completed questionnaires were received by the researcher. Of the 70 organisations, 21 organisations did not participate in the survey. Moreover, of the 580 distributed questionnaires, there were 247 that were unreturned. The reasons for the unreturned questionnaires were as follows:

 Management policies did not allow their employees to be involved in such studies due to confidentiality reasons.

 Participants were busy and did not have time to fill in the questionnaire.

 Participants had lost the questionnaire copy given to them.

Eventually, the final response rate was 50.77%. In fact, Babbie (1990) has argued that "a response rate of at least 50 percent is generally considered adequate for analysis and reporting." Table 7.1 shows the sampling and response rate of this research.

Table 7.1: Response rate

Subjects	Number of respondents		
	Face-to-face survey	Web survey	Total
Gross sample	499	81	580
(-) unusable responses	03	00	03
Net sample size	497	81	577
Usable responses	204	49	253
Usable response rate	41.04%	60.49%	50.77%

7.2.2 Data screening

Before the data analysis process took place, the properties of the data had to be assessed in advance. Researchers have to review the responses of individual questionnaires, and then transfer the information from the questionnaires to a format for statistical analysis (Neuman 2000). The data were reviewed to seek out errors in the form of invalid data including blank questionnaires or missing values. All questionnaires were sorted out based on inappropriate responses or incompleteness. Overall, the survey responses were reported as having three invalid responses. This procedure was carried out to produce clean data for the research analysis (Jackson 2008).

7.2.3 Non-response bias assessment

Lewis, Templeton, and Byrd (2005) stated that "non-response bias in the returned sample should be assessed to insure that the sample data adequately reflects the population." Non-response bias tests check whether there is any difference between the opinions of respondents and of non-respondents who could have participated in the survey. The responses from the survey which were received within two-and-a-half months were considered as early respondents and responses after three months were considered as late respondents. Therefore, the respondents were grouped into Group 1 and Group 2. Six variables were selected randomly to calculate the non-response bias. Based on the results obtained from the Mann-Whitney U-Test, it was noticed that there were no significant differences between the first wave and the second wave.

The Mann-Whitney U-Test compared the following key demographics amongst the different samples:

- Level of education
- Number of employees
- Number of years in current position

The test also compared the following key perspectives on competitiveness in the RMG industry:

- Political parties do not sincerely and carefully design good and effective policies
- Labourers are available and cheap in the RMG industry of Bangladesh
- Manufacturers don't get proper support from the government and bureaucrats
- Favourable trade environment for Bangladesh is helpful for the buyers
- Reducing lead time through appropriate activities in the supply chain.

Table 7.2: Mann-Whitney U-Tests for Group 1 and Group 2 samples

Variables/Items	Z value	Asymp.Sig.(2 tailed)	Significance
Level of education	-.362	.717	No
Number of employees	-1.004	.315	No
Number of years in current position	-.163	.871	No
Political parties do not sincerely and carefully design good and effective policies	-1.279	.201	No
Labourers are available and cheap in the RMG industry of Bangladesh	-.120	.904	No
Manufacturers don't get proper support from the government and bureaucrats	-.181	.856	No
Favourable trade environment for Bangladesh is helpful for the buyers	-.884	.377	No
Reducing lead time through appropriate activities in the supply chain	-.797	.426	No

From the above result as shown in table 7.2, it is clear that the randomly selected demographic variables were not significant. The analysis also showed that none of the perceptions towards different items of the construct of the competitiveness model was significant. Therefore, there was no sufficient deviation between the responses of the two groups. It was reasonable to conclude that the non-response bias was negligible and the two samples could be combined for data analysis.

7.3 Descriptive Analysis of the Sample (Demographics Information)

Before conducting any organised analysis, it is practical to use demographic data from the survey to develop a profile of the sample population. This helps to obtain a total picture of different types of respondent. The survey respondents were from the Bangladeshi RMG industry and comprised a usable sample of 253 respondents. The following sections will discuss the characteristics of the respondents, organised by gender, age, education, current position, work experience, type of organisation, number of employees, level of growth and level of profit. To understand the respondents' demographic backgrounds, SPSS was used in the demographic analyses. Tables 7.3 to 7.12 present descriptive information about the respondents in this study.

7.3.1 Gender

Table 7.3 shows that the survey respondents comprised 99.6% males and 0.4% females. The gender analysis clearly revealed the dominance of males completing the questionnaire. It could also be recognised that participants were from the higher-level decision-making group in garment companies where decision makers are generally male as compared to female.

Table 7.3: Survey respondent by gender

Gender	Frequency	Per cent	Cumulative Per cent
Male	252	99.6	99.6
Female	1	.4	100.0

7.3.2 Age

In this part of the survey, participants were asked to select an age range rather than providing a numeric number. Age was divided into five age-group categories. From table 7.4, it can be seen that most of the responses, that is, 45.1% were from the middle age group (41-50 years) who are the most experienced in the RMG industry. The next closest group at 30.8% comprised those aged 31-40 years who are dynamic, energetic

and always thinking positively about change. From these statistics, it can be seen that the more mature and comparatively young executives are playing a major role and contributing to this industry. Therefore, data from this survey would be definitely effective in this research. The other most experienced group comprised those aged 51-60 years with 18.2% of respondents to this research in this category. This group actually play important roles in decision and policy making for this industry.

Table 7.4: Survey respondent by age

Age	Frequency	Per cent	Cumulative Per cent
20-30 years old	12	4.7	4.7
31-40 years old	78	30.8	35.6
41-50 years old	114	45.1	80.6
51-60 years old	46	18.2	98.8
Over 60 years old	3	1.2	100.0

7.3.3 Level of education

The level of education attained by the survey participants is shown on table 7.5. In this study, a large number of respondents (87.4%) had the second-highest level of

Table 7.5: Survey respondent by level of education

Education	Frequency	Per cent	Cumulative Per cent
Diploma	1	.4	.4
Bachelor	21	8.3	8.7
Master's	221	87.4	96.0
Doctorate	7	2.8	98.8
Others	3	1.2	100.0

education, that is, a Master's degree. A small percentage (8.3%) only had a bachelor degree and 2.8% had the highest level of education, that is, a PhD degree. This result could be expected due to the fact that the respondents in this research involved managers and top executives. Generally, in the Bangladeshi RMG industry these positions require a higher educational background.

7.3.4 Current position

It is noted from table 7.6 that managers were the highest number of respondents in this research. There were 21.3% responses from managers of different garment companies in this survey. Other positions like assistant general managers were 19.0%, deputy general managers were 9.5%, directors were 17.4%, deputy managing directors were 12.5%, and some other positions were below 9%.

Table 7.6: Survey respondent by current position

Current Position	Frequency	Per cent	Cumulative Per cent
Head of Department	11	4.3	4.3
Manager	54	21.3	25.7
Assistant General Manager	48	19.0	44.7
Deputy General Manager	24	9.5	54.2
Deputy Managing Director	32	12.6	66.8
Director	44	17.4	84.2
Managing Director	18	7.1	91.3
Chairman	2	.8	92.1
Chief executive	3	1.2	93.3
Others	17	6.7	100.0

7.3.5 Years in current position

Respondents were also asked about how long they had worked in their current position. Table 7.7 shows the respondents' years of experience in their current position: 48.6% of respondents had been 5-10 years in their current position and 39.5% had 2-5 years in their current position. The number of respondents who were relatively new in their current position with less than two years was only 13 (approximately 5.1% of total respondents).

Table 7.7: Survey respondent by years in current position

Years in current position	Frequency	Per cent	Cumulative Per cent
Less than 2 years	13	5.1	5.1
+2 - 5 years	100	39.5	44.7
+5 - 10 years	123	48.6	93.3
+10 - 20 years	17	6.7	100.0

7.3.6 Experience in the RMG industry

According to the data shown on table 7.8, the highest number of respondents had 15-30 years of experience. They comprised 33.6% of total respondents. The next highest group of respondents (30.8%) had 5-10 years' experience with 28.5% in the 10-15 years' experience group. The others were below 5%.

Table 7.8: Survey respondent by years in RMG industry

Years in RMG industry	Frequency	Per cent	Cumulative Per cent
less than 2 years	2	.8	.8
+2 - 5 years	10	4.0	4.7
+ 5 - 10 years	78	30.8	35.6
+10 - 15 years	72	28.5	64.0
+15 - 30 years	85	33.6	97.6
Other	6	2.4	100.0

7.3.7 Type of organisation

Table 7.9 shows that, out of 253, all respondents, except one, were from private RMG companies: so, 99.1% respondents were from private companies.

Table 7.9: Survey respondent by type of organisation

Type of Org.	Frequency	Per cent	Cumulative Per cent
Private	252	99.6	99.6
Public + Private	1	.4	100.0

7.3.8 Number of employees

Table 7.10 depicts the size of the company where respondents worked with 39.1% of respondents coming from companies where the number of employees ranged from 2000-3000. A further 34.8% of responses came from the respondents in companies with 1000-2000 employees. In total, 18.9% of responses came from companies where the number of employees was from 3000 to more than 4000.

Table 7.10: Survey respondent by number of employees

Number of employees	Frequency	Per cent	Cumulative Per cent
Less than 1000	18	7.1	7.1
1000 - 2000	88	34.8	41.9
+2000 - 3000	99	39.1	81.0
+3000 - 4000	36	14.2	95.3
More than 4000	12	4.7	100.0

7.3.9 Level of growth

The largest group of respondents (48.2%) considered the level of growth of their company as somewhat satisfactory with 28.9% rating it as satisfactory. Only 2.8% of respondents rated the level of growth of their company as very satisfactory. Table 7.11 also shows that 20.2% of respondents rated their company's level of growth as not satisfactory.

Table 7.11: Survey respondent by level of growth

Level of Growth	Frequency	Per cent	Cumulative Per cent
Very Satisfactory	7	2.8	2.8
Satisfactory	73	28.9	31.6
Somewhat Satisfactory	122	48.2	79.8
Somewhat Poor	51	20.2	100.0

7.3.10 Level of profit

It can be seen on table 7.12 that 51.4% of respondents rated the level of profit of their company as somewhat satisfactory. In this survey, only 1.2% of respondents rated the level of profit as very satisfactory, with 26.1% rating it as satisfactory but 20.6% expressed their opinion that their company's level of profit was somewhat poor.

Table 7.12: Survey respondent by level of profit

Level of profit	Frequency	Per cent	Cumulative Per cent
Very Satisfactory	3	1.2	1.2
Satisfactory	66	26.1	27.3
Somewhat Satisfactory	130	51.4	78.7
Somewhat Poor	52	20.6	99.2
Poor	1	.4	99.6
Very Poor	1	.4	100.0

7.4 Data Analysis via Structural Equation Modelling (SEM)

The industry-wide survey data were analysed using the structural equation modelling (SEM) technique (Chin, 1998). SEM was chosen to validate the influence of stakeholders in the RMG industry's SC and to validate the competitiveness model for the RMG industry. Figure 5.4 illustrates the model.

In the RMG industry survey, 253 respondents' questionnaires were finalised with data collected for 66 items using these questionnaire. Moreover, there were 19 indicators or items for three formative constructs, 37 indicators or items for five reflective constructs and 10 for the demographic data. In this analysis, indicators from formative and reflective constructs were considered, with the partial least squares (PLS) technique designed to accommodate both formative and reflective constructs (Fornell and Bookstein 1982; Barclay, Higgins, and Thompson. 1995; Chin and Gopal 1995). As described previously in section 4.6.5, PLS performs model assessment in two sequential stages:

- Assessment of measurement model
- Assessment of structural model

7.4.1 Assessment of measurement model

The first essential tests of a model are the tests for reliability and validity. The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as 'reliability'. Reliability is defined as the

consistency of measurement and in examining how reliable the measurement is: validity is defined as the accuracy of a measurement and assessing how accurate the measurement is (Holmes- Smith 2001; Golafshani 2003).

The first step is to examine the measures' reliability and validity according to certain criteria associated with formative and reflective measurement model specification. Therefore, we needed to distinguish between reflective and formative measurement models in order to evaluate them (Hair, Ringle, and Sarstedt 2011). The assessment of the measurement model included the estimation of the reliability coefficients of the measures, and also an examination of the convergent and discriminant validity of the research instrument. Convergent validity is actually related to the test for reliability. The construct reliability measures the reliability of the latent construct which means examining the internal consistency (composite reliability) of a set of measures or indicators of all constructs rather than a single indicator. It provides the information on how well a set of observed indicators reflects the common latent construct (Holmes- Smith 2001). The higher the construct reliability the better it is. It is suggested that the measurement of properties needs to first be satisfied before proceeding to the assessment of the structural model (Barclay, Higgins and Thompson, 1995).

Overall there were 56 indicators or items for the eight constructs: political action (PA1-PA6), bureaucratic behaviour (BB1-BB6), country risk (CR1-CR7), supply-side drivers (SD1-SD6), supply-side barriers (SB1-SB10), demand-side drivers (DD1-DD6), demand-side barriers (DB1-DB6) and competitiveness (COM1-COM9). The following section will discuss the measurement model assessment, carried out as part of the PLS procedure, by measuring individual item reliability (loading), internal consistency (composite reliability) and average variance extracted (AVE) under convergent validity (Fornell and Larcker 1981), and under discriminant validity measuring AVE analysis and cross-loading matrix. All of these are for reflective constructs. Initially, there were 37 indicators for the reflective constructs. The strength of the measurement properties was assessed by examining the convergent validity and discriminant validity of the reflective items.

7.4.1.1 Assessing reflective constructs

Convergent validity:

Convergent validity measures the correlations of the items in a single construct. Convergent validity has to be achieved to ensure that the items in each construct are highly correlated and reliable. The higher the convergent validity, the more strongly correlated are the items in each construct. Therefore, the three steps to determine convergent validity were undertaken.

Item reliability

Item reliability examines how well each item related to their respective construct. Item reliability assesses the loadings for each individual item. Table 7.13 presents the detailed item loadings which indicate the correlation of the items with their respective constructs. The loading score is usually obtained from the bootstrapping result of PLS. Researchers have proposed that a latent variable should explain a substantial part of each indicator's variance (usually at least 50%) (Henseler et al. 2009). The item reliability analysis provides an estimation of the amount of variance in the item's measure that is due to the construct (Barclay, Higgins and Thompson 1995).

There are many 'rules of thumb' described and suggested in the literature for the item loadings' cut-off point. In chapter 4, section 4.6.5.1, detailed has veen described with reference for significant level of item loading and 0.5 has been taken as threshold for item reliability.

Table 7.13: Initial item loading of reflective construct

Reflective constructs	Items/Indicators	Loading	T-value	CR	AVE
SD	SD1	0.6061	11.9461	.793	.391
	SD2	0.7398	19.6657		
	SD3	0.6011	11.473		
	SD4	0.5395	8.5814		
	SD5	0.6411	12.8294		
	SD6	0.6084	10.8832		
SB	SB1	0.6961	15.8826	.915	.520
	SB2	0.7089	15.3242		
	SB3	0.7617	19.9575		
	SB4	0.6918	17.0497		
	SB5	0.6666	14.9043		
	SB6	0.732	18.0893		
	SB7	0.7608	27.7474		
	SB8	0.7501	28.1471		
	SB9	0.7067	21.1196		
	SB10	0.7274	17.9105		

Reflective constructs	Items/Indicators	Loading	T-value	CR	AVE
DD	DD1	0.5948	10.7727	.816	.426
	DD2	0.6516	13.3961		
	DD3	0.6774	12.732		
	DD4	0.6663	13.9729		
	DD5	0.6973	13.9691		
	DD6	0.6252	9.8982		
DB	DB1	0.6622	12.6804	.797	.398
	DB2	0.724	19.6613		
	DB3	0.6903	14.7461		
	DB4	0.5606	9.0542		
	DB5	0.559	8.5808		
	DB6	0.5661	8.4688		
COM	COM1	0.5288	8.5852	.834	.361
	COM2	0.6007	12.9228		
	COM3	0.639	14.7735		
	COM4	0.4223	5.5221		
	COM5	0.6967	17.9521		
	COM6	0.6117	11.3497		
	COM7	0.5859	12.3201		
	COM8	0.6163	12.7357		
	COM9	0.6646	13.2881		

Table 7.14: Final reflective item loading

Reflective Constructs	Items of Reflective construct	Loading	T-value	Composite reliability	AVE
SD	SD1	0.7153	16.9246	0.801	0.503
	SD2	0.754	19.9254		
	SD5	0.646	10.8885		
	SD6	0.7168	15.6958		
SB	SB1	0.7	17.8466	0.915	0.52
	SB2	0.702	15.2628		
	SB3	0.7597	19.9186		
	SB4	0.6941	17.6642		
	SB5	0.6714	15.4853		
	SB6	0.731	16.9966		
	SB7	0.7614	27.4437		
	SB8	0.7494	26.6994		
	SB9	0.7067	21.9223		
	SB10	0.7266	18.1636		
DD	DD2	0.6445	12.9696	0.804	0.507
	DD3	0.7204	14.3051		
	DD4	0.7415	17.7347		
	DD5	0.7362	16.7231		
DB	DB1	0.7591	17.7966	0.8	0.506
	DB2	0.7964	28.6011		
	DB3	0.7303	17.4132		
	DB6	0.5295	6.3257		
COM	COM3	0.6857	17.7416	0.815	0.524
	COM5	0.7798	24.6699		
	COM9	0.7358	18.636		
	COM6	0.6908	15.3964		

As described in research method in chapter 4, section 4.6.5.1, to fulfil the requirements of convergent validity, 0.5 was determined as the minimum cut-off value. Accordingly, only one item, that is, COM4 failed to meet the minimum criteria. PLS was run again deleting this item. However, to attain the minimum acceptable value of average variance extracted (AVE) and for the goodness of fit (GoF) of the measurement model, the following items were discarded; SD3, SD4, DD1, DD6, DB4, DB5, COM1, COM2, COM4, COM7 and COM8 and PLS was run again (Hair, Ringle, and Sarstedt 2011; MacKenzie, Podsakoff, and Podsakoff 2011). After that, the acceptable level of AVE was fulfilled (see details in the next step) and most of the items' loadings attained a value of 0.7, except seven items highlighted in table 7.14 which had loadings higher than 0.5. Finally, the results confirmed that all 26 items in table 7.14 were sufficient to represent their respective construct.

Internal consistency and AVE of constructs

Internal consistency is used to establish the convergent validity to assure that there is a correlation among the items for a construct (Fornell and Larcker 1981). Internal consistency is concerned with the measure of reliability of a construct. It is a second-generation procedure used to measure reliability. The internal consistency of the constructs in the competitiveness model was calculated by evaluating the value of composite reliability and average variance extracted (AVE). These two values were obtained by the bootstrapping result of PLS-Graph and the level of acceptability was later carefully examined. The suggested acceptable value of composite reliability is 0.7 or higher (Barclay, Higgins, and Thompson. 1995; Igbaria et al. 1997) and value of AVE should be 0.5 or higher (Fornell and Larcker 1981; Jiang, Klein, and Carr 2002). Hair, Ringle, and Sarstedt (2011) suggested that composite reliability should be higher than 0.70 (in exploratory research 0.60 to 0.70 is considered acceptable) and AVE should be higher than 0.50.

Referring to table 7.14, all constructs met the acceptable criteria for internal consistency and AVE. The values of all constructs exceeded the recommended values of internal consistency and AVE. Table 7.14 shows that internal consistency of all constructs are more than 0.7. The highest internal consistency was for construct SB at 0.915 and the lowest value was for construct DB at 0.8. The high internal consistency values for all the constructs ensured the reliability of the measurement model. Moreover, the values of AVE were also more than 0.5. The

highest AVE was 0.524 for COM and the lowest AVE was 0.503 for the construct SD. The average variance extracted (AVE) represents a construct by its corresponding items with the value for AVE for all constructs exceeding the recommended threshold. Fornell and Larcker (1981) suggested using the AVE as a criterion for convergent validity. An AVE value of more than 0.5 indicates that a latent variable is able to explain more than half of the variance of its items on average (Henseler et al. 2009; MacKenzie, Podsakoff, and Podsakoff 2011).

From the above analysis and outcome values, it can be said that the measurement model has satisfied all three necessary criteria and achieved convergent validity. These results indicated that the items in each construct were highly correlated and reliable.

Discriminant validity:

The test for discriminant validity is the next step in the assessment of the measurement model. The discriminant validity of the reflective variables assesses the degree to which the constructs differ from each other. There are two analytical procedures for this assessment as recommend by Barclay, Higgins, and Thompson (1995) and Hulland (1999). These are the square root of average variance extracted (AVE) analysis and cross-loading matrix evaluation. Actually, PLS assesses discriminant validity by examining the correlation at both construct and item levels.

Average variance extracted (AVE) analysis (Construct level)

In the discriminant validity assessment, the first test was to ensure that a construct should not share more variance with its measures than it shared with other constructs in the competitiveness model. The first criterion of discriminant validity was assessed by calculating the square root of average variance extracted (Igbaria, Guimaraes, and Davis 1995a). To meet the discriminant validity criteria, the off-diagonal elements (correlation of latent variables) must be less than or equal to the bolded, diagonal elements, that is, the square root of the average variance (table 7.15) explained in the corresponding rows and columns (Igbaria et al. 1997; Gefen, Straub, and Boudreau 2000). This value was then compared with the inter-construct correlation.

Table 7.15: AVE analysis (SQRT of the AVE of reflective constructs is larger than its correlation with other constructs)

Constructs	PA	CR	BB	SD	SB	DD	DB	COM
PA	1							
CR	0.492	1						
BB	0.387	0.63	1					
SD	0.272	0.17	0.255	**.709**				
SB	0.293	0.443	0.4	0.131	**.721**			
DD	0.285	0.263	0.358	0.416	0.22	**.712**		
DB	0.348	0.593	0.509	0.248	0.421	0.399	**.711**	
COM	0.318	0.326	0.386	0.485	0.317	0.537	0.382	**.723**

Barclay, Higgins, and Thompson (1995) also suggested that the model could be assessed as having acceptable discriminant validity if the square root of the AVE of a construct was larger than its correlation with other constructs. To meet the discriminant validity criteria, the square roots of the AVE were calculated and are represented in the main diagonal line on table 7.15. As PA, CR and BB were considered formative constructs, there was no need to apply AVE for discriminant validity. For this study, table 7.15 presents the correlation matrix for all eight constructs used in the competitiveness model. The bold values are the square root of AVE of the reflective items. The off-diagonal elements represent the correlations among the latent variables in table 7.15. This shows that the square root of AVE is greater than the off-diagonal elements across the row and column. Therefore, it confirms that the discriminant validity is achieved.

Cross-loading matrix (Item level)

The second criterion for discriminant validity is at item level. Testing discriminant validity requires a further analytical procedure: loadings and cross-loadings of measures are to be tested at the item level.

The discriminant validity criterion is achieved when loadings of an item within a construct are greater than the loading of items of any other construct within the same column (Barclay, Higgins, and Thompson. 1995; Hulland 1999; Gefen, Straub, and Boudreau 2000). PLS and, later, SPSS were used for this calculation. The latent variable scores for each item were calculated through PLS. These scores were then correlated with the original items. The correlation was done after the two types of data were copied into SPSS. Bivariate correlation using the non-parametric Spearman correlation was chosen. The results of the loading and cross-loading correlations are depicted in table 7.16. The table shows that all items were loaded higher on the construct they were measuring than on any other construct in the model. Thus, all reflective constructs in the model met the second criterion of

discriminant validity. The implication is that all the reflective constructs in the measurement model were different from each other and empirical support was therefore achieved from the results for reliability and convergent & discriminant validity for the reflective constructs.

Table 7.16: Cross-loading (loading of an item within a construct is greater than the loading of items in any other construct)

Items	PA	CR	BB	SD	SB	DD	DB	COM
PA3	.754**	.360**	.337**	.250**	.203**	.189**	.294**	.227**
PA4	.756**	.353**	.340**	.173**	.267**	.225**	.267**	.243**
PA5	.782**	.411**	.227**	.206**	.207**	.238**	.240**	.258**
CR1	.312**	.679**	.496**	.083	.379**	.096	.384**	.139*
CR3	.263**	.558**	.312**	.194**	.161*	.224**	.313**	.313**
CR4	.425**	.762**	.438**	.161*	.291**	.235**	.440**	.300**
CR6	.364**	.798**	.511**	.093	.380**	.217**	.504**	.215**
BB1	.236**	.441**	.661**	.195**	.238**	.255**	.310**	.267**
BB2	.292**	.485**	.788**	.214**	.296**	.325**	.425**	.311**
BB4	.339**	.500**	.789**	.182**	.344**	.245**	.399**	.293**
SD1	.214**	.134*	.214**	.715**	.179**	.280**	.251**	.400**
SD2	.204**	.176**	.259**	.769**	.009	.327**	.204**	.320**
SD5	.150*	.095	.135*	.639**	.094	.291**	.098	.343**
SD6	.186**	.060	.098	.708**	.078	.279**	.114	.301**
SB1	.278**	.400**	.295**	.073	.704**	.095	.388**	.198**
SB2	.148*	.203**	.227**	.071	.701**	.223**	.169**	.197**
SB3	.221**	.355**	.329**	.128*	.761**	.150*	.355**	.228**
SB4	.128*	.327**	.257**	-.014	.695**	.055	.319**	.140*
SB5	.150*	.277**	.221**	.021	.673**	.107	.314**	.135*
SB6	.143*	.278**	.295**	.034	.729**	.154*	.239**	.242**
SB7	.257**	.311**	.361**	.143*	.761**	.180**	.335**	.296**
SB8	.273**	.362**	.339**	.177**	.748**	.221**	.319**	.305**
SB9	.290**	.330**	.260**	.127*	.706**	.242**	.297**	.301**
SB10	.133*	.302**	.237**	.099	.726**	.178**	.265**	.170**
DD2	.213**	.351**	.369**	.232**	.305**	.662**	.372**	.318**
DD3	.164**	.109	.239**	.399**	.007	.710**	.236**	.396**
DD4	.224**	.224**	.270**	.272**	.203**	.742**	.281**	.445**
DD5	.204**	.030	.121	.286**	.087	.727**	.214**	.353**
DB1	.247**	.434**	.422**	.151*	.364**	.247**	.774**	.161*
DB2	.304**	.503**	.416**	.197**	.386**	.260**	.802**	.297**
DB3	.217**	.436**	.369**	.126*	.248**	.242**	.733**	.226**
DB6	.207**	.285**	.220**	.236**	.178**	.410**	.502**	.406**
COM3	.194**	.207**	.267**	.350**	.242**	.348**	.280**	.685**
COM5	.226**	.239**	.308**	.407**	.235**	.409**	.238**	.775**
COM6	.277**	.204**	.189**	.286**	.137*	.404**	.261**	.689**
COM9	.230**	.285**	.340**	.352**	.291**	.395**	.303**	.743**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

7.4.1.2 Assessing for formative constructs

Diamantopoulos and Siguaw (2006) mentioned (in page-11) that ‘‘reliability becomes an irrelevant criterion for assessing measurement quality in respect of a formative measurement model.” Some researchers have argued that the convergent validity and discriminant validity test for formative constructs was not meaningful (Bollen 1989; Bagozzi 1994). The assessment of the validity for formative constructs involves statistical analysis at the construct and indicator levels (Henseler et al. 2009). To assess the formative measurement model, the indicators’ weight and multicollinearity test have been considered.

Indicators’ weight for formative items

Three constructs comprising 19 items in the measurement model were formative. Using bootstrapping, ‘indicators or items’ weights were calculated which provided information on the relative importance of the formative items towards the formation of the corresponding latent construct. At the same time, that loading was also calculated which provided information on absolute importance (Hair, Ringle, and Sarstedt 2011). The weight and loading with the t-value for each item of the formative constructs are presented in table 7.17.

As table 7.17 shows, weights for 15 formative items had significant t-values whilst four did not, but at the time of considering the loading, all items were significant. Hair, Ringle, and Sarstedt (2011) also emphasized the need for all facets, that is, weight and loading with their significant t-values, to keep all the items of the formative constructs. But four items did not meet the significant level of weight. Therefore, four items were deleted. In this regard we can mention previous study for item deletion. For example, Santosa, Wei and Chan’s (2005) study reported seven out of 13 indicators. They deleted six items as having low indicator weight including two negative values.

Furthermore, Diamantopoulos and Winklhofer (2001) recommended elimination only when the breadth of the construct composition was not compromised. MacKenzie, Podsakoff, and Podsakoff (2011) in their research used the construct level error term to assess validity. They mentioned construct level error variance should be small and constitute no more than half of the total variance of the construct. They recommended the smaller, the better. Therefore, to reduce the

construct level error, more formative items were deleted to achieve goodness of fit. Finally, PA6, CR2, CR5, BB3 and BB6 were deleted to reduce the error variance and the model was run again by using PLS. The final result is shown in table 7.18.

Table 7.17: Initial weight and loading of formative indicators/items

Formative constructs	Formative items/indicators	Weight	T-value against weight	Loading	T-value against loading
PA	PA1	0.0392	0.3392	0.3651	3.2741
	PA2	0.0839	0.7596	0.5424	5.6919
	PA3	0.3191	2.6191	0.7039	7.8536
	PA4	0.3843	3.8817	0.7529	11.9885
	PA5	0.4237	4.0156	0.7681	12.6005
	PA6	0.2079	1.74	0.4846	4.0905
CR	CR1	0.2253	2.4339	0.6422	8.4593
	CR2	0.184	2.1557	0.5499	6.8763
	CR3	0.1885	2.2919	0.6032	8.1741
	CR4	0.3823	5.4351	0.7372	14.3215
	CR5	0.1567	2.3207	0.4261	5.4626
	CR6	0.3792	5.1018	0.7715	17.154
	CR7	-0.0013	0.0148	0.5489	6.2732
BB	BB1	0.1855	2.3197	0.6028	8.7387
	BB2	0.1855	3.5956	0.7335	11.4023
	BB3	0.1855	3.3678	0.64	10.1577
	BB4	0.1855	5.9472	0.7359	13.5217
	BB5	0.1855	1.3415	0.5794	7.5852
	BB6	0.1855	2.4397	0.6427	8.6587

Table 7.18: Final weight and loading

Formative construct	Items of Formative construct	Weight	T-value	Loading	T-value
PA	PA3	0.3997	2.9261	0.753	8.1332
	PA4	0.409	4.0498	0.7561	10.7969
	PA5	0.4979	4.5659	0.7829	11.5252
CR	CR1	0.3131	3.3832	0.6738	8.2424
	CR3	0.1823	1.9618	0.5645	6.5686
	CR4	0.434	6.0573	0.7582	14.5574
	CR6	0.4452	6.2907	0.8021	18.56
BB	BB1	0.2958	3.3121	0.6618	8.5232
	BB2	0.4636	5.4163	0.7885	13.0738
	BB4	0.5553	6.785	0.79	14.3952

Multicollinearity

In addition, the test of multicollinearity was conducted on the formative items. Low collinearity among items is vital in ensuring the stability of the estimates (Mathieson, Peacock, and Chin 2001). To examine multicollinearity, the variance inflation factor (VIF) scores for each item were calculated. The calculation was done on the basis of mean value and PLS-based latent variables. The VIF scores were the same in both tests: the higher the VIF score, the higher the degree of multicollinearity. The IBM SPSS 21 statistical package was utilized to run regression analysis with the PLS construct scores as the dependent variables and the items as independent variables (Andreev et al. 2009).

As shown in table 7.19, all the VIF scores were below 5. This number was well below the recommended maximum threshold of 10 (Kleinbaum et al. 1998). Furthermore, this value was below the maximum level of 5 suggested by Mathieson, Peacock and Chin (2001) and Hair, Ringlr, and Sarstedt (2011). Finally, the formative items as per table 7.18 were retained. Therefore, in the case of the formative constructs, the items' weight and the relative importance of the formative items towards the formation of the related latent construct were appraised.

Table 7.19: Degree of multicollinearity (VIF ≤ 10)

Constructs	Item/Indicators	VIF (mean value)	VIF (PLS-based latent variable)
PA	PA3	1.305	1.305
	PA4	1.301	1.301
	PA5	1.210	1.210
CR	CR1	1.260	1.260
	CR3	1.223	1.223
	CR4	1.277	1.277
	CR6	1.383	1.383
BB	BB1	1.305	1.305
	BB2	1.365	1.365
	BB4	1.147	1.147

7.4.2 Assessment of structural model

All the criteria were met in assessing the measurement model. An assessment could then be carried out on the structural model. In the structural model assessment, the proposed model of competitiveness was assessed in terms of the exploratory power and significance of paths (path coefficients) among the constructs (Chin, Marcolin, and Newsted 1999). Hanlon (2001) described this as a comparison between the

constructs within the model, whereas Barclay, Higgins and Thompson (1995) stated that this step assessed the statistical significance of the path loadings and path co-efficient between each construct. Chin, Marcolin, and Newsted (1999) and Hanlon (2001) indicated that it was inappropriate to use traditional tests to ascertain the statistical significance between the constructs. In assessing the path coefficient, the t-values of the hypothesized relationships were calculated to evaluate the significance of the relationship.

PLS is ideal for assessing the statistical significance of the path loading and path coefficients between constructs because it does not require a normal distribution of data (Chin, Marcolin, and Newsted 1999; Hanlon 2001). PLS allows a technique called bootstrapping to make an assessment of the structural competitiveness model. Two non-parametric methods were used to test the relationships between constructs namely 'bootstrap' and 'jackknife' (Gefen, Straub, and Boudreau 2000; Santosa, K.Wei, and Chan 2005). 'Bootstrap' which is the more advanced method was chosen for this study. The advantage is that it produces both a t-value and a squared multiple correlation, that is, R^2 value. The t-value was equivalent to the traditional t-test and it evaluated the significance of the hypothesized relationships (i.e. interpreted the significance of the paths between model constructs). R^2 values were assessed as a measure of the predictive power of the model for the endogenous constructs (Barclay, Higgins, and Thompson. 1995). The R^2 for the structural equation reflected the proportion of variance of the dependent construct as explained by the constructs in the structural equation (Joreskog and Sorbom 1996).

7.4.2.1 Explanatory power/nomological validity of the main model (R^2)

The explanatory powers or nomological validity of the model were assessed by calculating the coefficient of determination (R^2) of the endogenous constructs (Santosa, K.Wei, and Chan 2005). According to Falk and Miller (1992), the minimum R^2 should be 0.1. Santosa, K.Wei, and Chan (2005) suggested 0.1 to be an acceptable R^2 value. Holmes- Smith (2001) recommended that the value of R^2 range from 0 to 1 and R^2 should exceed 0.5. Table 7.20 shows the R^2 values within the

Table 7.20: R² values

Endogenous Construct	When fulfil AVE (.5) value for reflective constructs	When reduced average error by deleted items
Country Risk (CR)	.586	.469
Supply-Side Drivers (SD)	.080	.104
Supply-Side Barriers (SB)	.208	.224
Demand-Side Drivers (DD)	.088	.101
Demand-Side Barriers (DB)	.382	.384
Competitiveness (COM)	.426	.426

model while Figure 7.1 illustrates the loadings (coefficient) and R² values within the model. The table indicates that the R² values of six constructs were above the requirement (shaded column of table-7.20). Figure 7.1 shows the direction of each relationship, the loadings (coefficient) on each relationship (the value on the arrow) and R² values for each dependent construct (the value under the circles).

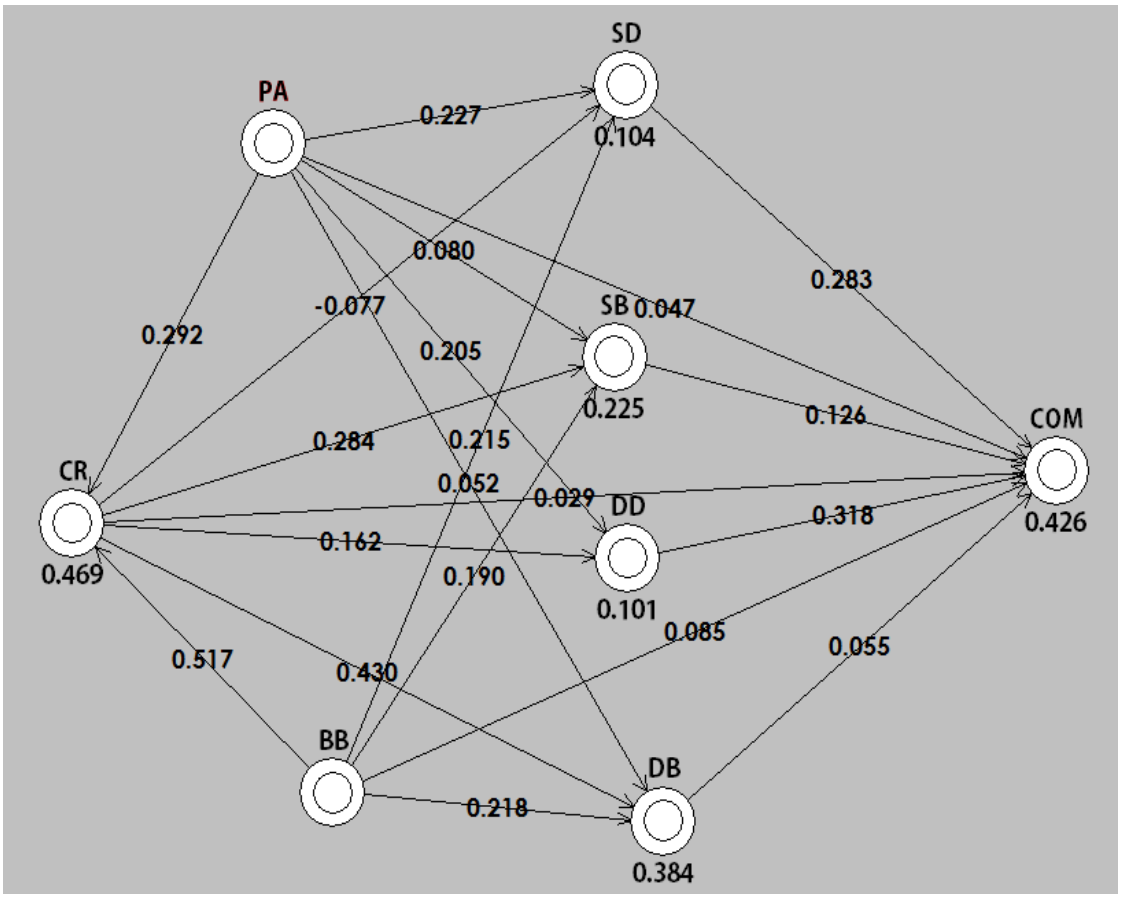

Figure 7.1: Loading (coefficient) and R² values

Table 7.20 shows 46.9% of the variance for country risk (CR), 10.4% of the variance for supply-side drivers (SD), 22.4% for supply-side barriers (SB), 10.1% for demand-side drivers (DD), 38.4% for demand-side barriers (DB) and 42.6% for

competitiveness (COM). The strongest R^2 value is that of country risk (CR). The R^2 values or explanatory powers reflect the amount of variance explained by the model or the predictive power of the model. However, by using the R^2 value, the overall model explained that 42.6% of the variance in improving competitiveness can be explained by the constructs in the model. The PLS result showed that the model exhibited 22.4% explanatory power in the area of supply-side barriers (SB), 38.4 % in demand-side barriers (DB), 10.1% in demand-side drivers (DD) and 10.4% in supply-side drivers (SD). Overall, the findings showed that all scores of R^2 value satisfied the requirement for the 0.10 cut-off value (Falk and Miller, 1992).

7.4.2.2 Test of significance of the hypotheses

The results of the hypotheses testing are summarised in table 7.21. The path loading (i.e. β value) indicates whether the direction of the relationship was either positive or negative whilst the t-value (i.e. path coefficient) assesses whether this relationship was significant or not. As shown in table 7.21, seven hypotheses out of 20 were not significant.

Table 7.21: Hypothesis test result- 1

Hypothesis	Relationship Path	Path Loading or Coefficient (β)	t-value(from path co-efficient)	Significance
H1a	PA → CR	0.292	4.25	Significant at 0.001
H1b	PA → SD	0.227	3.01	Significant at0.01
H1c	PA → SB	0.08	.993	Not significant
H1d	PA → DD	0.205	2.82	Significant at 0.01
H1e	PA → DB	0.052	.693	Not significant
H1f	PA → COM	0.047	.730	Not significant
H2a	BB → CR	0.517	8.088	Significant at 0.001
H2b	BB → SD	0.215	2.38	Significant at 0.05
H2c	BB → SB	0.19	2.02	Significant at 0.05
H2d	BB → DB	0.218	3.4382	Significant at 0.001
H2e	BB → COM	0.085	1.224	Not significant
H3a	CR → SD	-0.077	.6955	Not significant
H3b	CR → SB	0.284	2.83	Significant at 0.01
H3c	CR → DD	0.162	1.84	Significant at 0.10
H3d	CR → DB	0.43	5.42	Significant at 0.001
H3e	CR → COM	0.029	0.3530	Not significant
H4	SD → COM	0.283	4.577	Significant at 0.001
H5	SB → COM	0.126	2.643	Significant at 0.01
H6	DD → COM	0.318	4.7781	Significant at 0.001
H7	DB → COM	0.055	0.7254	Not significant

Notes: ****p < 0.001 or (significance at 0.001 > t3.29), .01% (significance level)
***p < 0.01 or (significance at 0.01 > t2.57), 1% (significance level)
**p < 0.05 or (significance at 0.05 > t1.96), 5% (significance level)
* p < 0.10 or (significance at 0.10 > t1.64), 0.1% (significance level)

The most significant influence was of bureaucratic behaviour (BB) of external stakeholders towards country risk (CR). In addition, there were three internal constructs (SD to COM, SB to COM and DD to COM) directly influencing competitiveness which were significant, but the directly influence of four constructs (PA to COM, CR to COM, BB to COM and DB to COM) were not significant. All the significant relationships show positive directions except country risk to supply side drivers (CR to SD).

7.4.2.3 Hypotheses testing

7.4.2.3.1 Hypotheses from external stakeholders' elements

The explanatory power of the competitiveness model was satisfactory at $R^2 = 42.6\%$. However, twelve of the 20 hypotheses were not supported by the hypotheses testing. This section present details of the result for each hypothesis.

Many stakeholders are involved directly or indirectly in the SC process of the RMG industry. In the first step, this section discusses the hypotheses drawn from the activities of external stakeholders. The government, opposition political parties and bureaucrats were considered as external stakeholders. Therefore, political action, bureaucratic behaviour and country risk that were created by the interaction of political parties and bureaucrats were considered from the external stakeholders' point of view. Overall, there were 20 hypotheses considered as shown in the table-7.22. However, the hypotheses from the political action are discussed first.

Hypotheses H1a to H1f are from political action. The results for these hypotheses are tabulated in table 7.22. Hypothesis H1a was to test the influence of PA on the country risk. It was hypothesized that political activities or actions would have a positive influence on country risk (CR). This means that when the non-supportive PA increases, then CR will increase and when the non-supportive PA decreases, then CR will decrease. This statement was supported by the statistical test. The path coefficient of the hypothesized link was .292 while the t-value was 4.25. The t-value was significant at 0.001. It can therefore be argued that political action positively influences country risk. Accordingly, considering the results of the path coefficient and t-value, decisions were taken for hypotheses H1b to H1f: hypothesis H1b, that is, PA negatively influences SD; hypothesis H1c, that is, PA positively influences SB; hypothesis H1d, that is, PA negatively influences DD; hypothesis H1e, that is, PA positively influences DB; and hypothesis H1f, that is, PA negatively influences COM.

Table 7.22: Hypothesis test result- 2

Construct	Link	Hypotheses	Hypotheses Statement	t-value	Outcome
PA	PA → CR	H1a	Non-supportive political action (PA) increases the country risk (CR)	4.25	Supported
	PA → SD	H1b	Non-supportive PA decreases the supply-side drivers (SD)	3.01	Not supported
	PA → SB	H1c	Non-supportive PA increases the supply-side barriers (SB)	.993	Not supported
	PA → DD	H1d	Non-supportive PA decreases the demand-side drivers (DD)	2.82	Not supported
	PA → DB	H1e	Non-supportive PA increases the demand-side barriers (DB)	.693	Not supported
	PA → COM	H1f	Non-supportive PA decreases the tendency to improve competitiveness (COM)	.730	Not supported
BB	BB → CR	H2a	Non-supportive bureaucratic behaviour (BB) increases the CR	8.088	Supported
	BB → SD	H2b	Non-supportive BB decreases the SD	2.38	Not supported
	BB → SB	H2c	Non-supportive BB increases the SB	2.02	Supported
	BB → DB	H2d	Non-supportive BB increases the DB	3.4382	Supported
	BB → COM	H2e	Non-supportive BB decreases the tendency to improve COM	1.224	Not supported
CR	CR → SD	H3a	Non-supportive CR decreases the SD	.6955	Not supported
	CR → SB	H3b	Non-supportive CR increases the SB	2.83	Supported
	CR → DD	H3c	Non-supportive CR decreases the DD	1.84	Not supported
	CR → DB	H3d	Non-supportive CR increases the DB	5.42	Supported
	CR → COM	H3e	Non-supportive CR decreases the tendency to improve COM	0.3530	Not supported
SD	SD → COM	H4	SD positively influence the COM	4.577	Supported
SB	SB → COM	H5	SB negatively influence the COM	2.643	Not supported
DD	DD → COM	H6	DD positively influence the COM	4.7781	Supported
DB	DB → COM	H7	DB negatively influence the COM	0.7254	Not supported

Hypotheses H3a to H3e are from country risk (CR). The results for these hypotheses are tabulated in table 7.22. Hypothesis H3a was for testing the influence of CR on the garment suppliers drivers or strengths. It was hypothesized that CR would have a

negative influence on the strengths of suppliers. This means that when CR increases, then SD will decrease and when CR decreases, then SD will increase. This statement was not supported by the statistical test. The path coefficient was -0.077 while the t-value was .6955. It can therefore be argued that the direction of the test was right (i.e. negative association) but the data did not support the significance of the relationship with the predicted construct, supply-side drivers (SD). Accordingly, considering the result of the path coefficient and the t-value, decisions were taken for hypotheses H3b to H3e.

Hypotheses H2a to H2e are from bureaucratic behaviour (BB). The results for these hypotheses are tabulated in table 7.22. Hypothesis H2a was for testing the influence of BB on country risk (CR). It was hypothesized that BB would have a positive influence on CR. This means that when the disturbance of BB increases, then CR will increase and when the disturbance of BB decreases, then CR will decrease. This statement was supported by the statistical test. The path coefficient of this hypothesized link was .517 while the t-value was 8.088. The t-value was significant at 0.001. It can therefore be argued that bureaucratic behaviour positively influences the country risk. Accordingly, considering the results of the path coefficient and the t-value, decisions were taken for hypotheses H2b to H2e.

7.4.2.3.2 Hypotheses from Internal Stakeholders' elements

In the RMG industry's SC, manufacturers or suppliers of final products and customers are the main internal stakeholders. In making the SC effective and improving competitiveness, their role in the RMG industry's SC was very important. Their strengths and weaknesses, considered as drivers and barriers, were very significant in the SC. Therefore, four hypothesized links that were supported by the field study have been considered as hypotheses in this research .These hypotheses are shown in table 7.22. However, the hypothesis H4, that is, the influence of supply-side drivers was considered first for testing.

Hypothesis H4 is from the supply-side drivers (SD). The result for this hypothesis is tabulated in table 7.22. Hypothesis H4 was for testing the influence of SD on the garment SC and ultimately on the improvement of competitiveness. It was hypothesized that SD would have a positive influence on competitiveness. This means that when SD increase, then competitiveness will increase and when SD

decrease, then competitiveness will decrease. This statement was supported by the statistical test. The path coefficient was 0.283 while the t-value was 4.577. The t-value was significant at 0.001. It can therefore be argued that supply-side drivers positively influence the competitiveness in the RMG industry's SC. Accordingly considering the results of the path coefficient and the t-value, the decision was taken for hypotheses H5 to H7.

7.5 Summary

This chapter has presented the results based on the analysis of the research data that was collected by industry-wide survey of the Bangladeshi RMG industry through the primary method of a survey questionnaire. The data analysis was conducted using SPSS and PLS software. The chapter aimed to develop a profile of the survey respondents and also to determine the validity and reliability of the constructed model that focused on the process of competitiveness.

This chapter described the evaluation and adjustment of the measurement model to achieve convergent validity, discriminant validity and indicator weight for the 56 items or instruments. The results of the structural model assessment were also detailed. The explanatory power of the conceptual model on improving competitiveness of the Bangladeshi RMG industry was 42.6%, with all the R^2 values of the endogenous constructs above the requirement recommended by Santosa, Wei and Chan (2005).

Eight of the 20 hypotheses were supported: three constructs, identified by external stakeholders from the field study and that had direct influence on competitiveness, were finally rejected. Four internal constructs also had direct influence on competitiveness with three out of the four accepted and one rejected. Based on the results from the measurement model and structural model, the hypotheses which were developed in chapter 6 were tested and evaluated in this chapter. The reported PLS results of this chapter will be discussed and interpreted in detail in the following chapter.

C HAPTER 8

Discussion

8.1 Introduction

This chapter presents the interpretation and discussion of the results obtained from the survey that was conducted to examine the influence of external and internal stakeholders' actions on the RMG industry's SC for the improvement of competitiveness. This chapter actually discusses the findings of the structural equation modelling (SEM) described in chapter 7. These findings will be discussed in terms of the major research questions and the 20 hypotheses proposed in chapter 6. The integrated conceptual model derived from the literature review and field study analysis substantiated the need for 20 hypotheses. The previous chapter detailed the results of the hypotheses testing whereby 8 of the hypotheses were supported. The significant relationships were linked with practical propositions that could serve as guidelines for implementing effective measures to improve the competitiveness in the RMG industry. In this discussion, the structural model of competitiveness addresses the influence of the behavioural actions of stakeholders and their resources (drivers and barriers) in improving competitiveness in the present competitive clothing market. Moreover, in this chapter, the accepted hypotheses are discussed in detail with the implications of and possible explanations for the rejection of the rejected hypotheses. In the following sections, each construct related to the hypotheses is discussed with its possible application.

8.2 Interpretation and Discussion of the Result

The analysis from chapter 7 showed that the competitiveness model explained the external stakeholders and their actions that influenced the internal stakeholders of the RMG industry's SC leading to the improvement of competitiveness in the RMG companies in Bangladesh.

Testing of the hypotheses was performed by examining the t-values and standardized structural coefficients. The results of the testing of the hypotheses are detailed in tables 7.21 and 7.22 in chapter 7. This reveals that of 20 hypotheses related to improving competitiveness, 13 were statistically significant but five hypotheses out

of 13 were not significantly associated. Therefore finally eight hypotheses were accepted or supported. As hypothesized in the study, the external stakeholders' action/elements on the RMG industry's SC and the internal stakeholders' resources in the RMG industry's SC were seen to have an influence on the improvement of competitiveness of the RMG industry. The positive use of these elements and concepts through the SCM ultimately leads to the competitiveness of organisations and industries in terms of market share and the economic environment.

These findings confirmed the appropriateness of the research model in using the stakeholder and resource dependence theories (RDT) as its theoretical bases underpinning the model. The following sections discuss the findings related to the individual hypotheses proposed earlier.

8.2.1 Hypotheses related to external stakeholders

The first research question on how the external stakeholders (political parties, the government and bureaucrats) influence the competitiveness of the RMG industry of Bangladesh through their activities in regards to the SC was explored through the hypotheses which were developed in chapter 6. It has been stated and shown in chapters 3 and 6 that two constructs were developed, that is, political action derived from the government or political parties and bureaucratic behaviour derived from bureaucrats, the high officials responsible for implementing the government's decisions. The third construct 'country risk' is actually the outcome of non-supportive political action and non-supportive bureaucratic behaviour. Hypotheses H1 to H3 have been developed taking into consideration these three constructs from external stakeholders. In the RMG industry's SC, the suppliers and buyers are the main internal stakeholders. These internal stakeholders are influenced by the external stakeholders. According to stakeholder theory, the relationships among the stakeholders are very important in making the SC more effective and efficient to improve competitiveness. The competitiveness can be increased through minimizing dependency as per RDT and the dependency can also be minimized by maintaining good relationships and co-operational activities. Therefore, based on the concepts of stakeholder and resource dependency theories, the proposed hypotheses were developed. After analysing the data in chapter 7, the results of the testing of the hypotheses are discussed in detail below.

8.2.1.1 Hypotheses related to political action (H1a to H1f)

In the RMG industry, companies usually export their garment products through a SC. The whole SC is divided into two parts, the upstream and downstream SC (Christopher, 1998; Nuruzzaman et al., 2012). As the Bangladeshi garment industry is dependent on imported raw materials, they import their materials using the upstream SC and, after manufacturing, export their products through the downstream SC. There is involvement of many parties, that is, stakeholders in the whole way (upstream and downstream) along the SC process. The external stakeholders, the government and bureaucrats directly and indirectly play various roles in the RMG industry's SC process (Khondker , Razzak, and Ahmed 2005; Razzaque and Eusuf 2008; Saxena and Salze-Lozac'h 2010). The government is actually the combination of the ruling political parties and the opposition whereas the bureaucrats are the hands of government engaged in implementing the government plan and decisions (Welge and Holtbrugge 2006; Holtbrugge, Berg, and Puck 2007). Therefore the influence of political action has been considered as an important construct of the external stakeholders in the competitiveness model.

Six hypotheses were developed related to political action (PA). Five hypotheses (H1a to H1e) were developed on the basis of the literature review and field study but only one hypothesis (H1f) was developed based only on the field study. After analysis, the influence of PA in the SC process to achieve competitiveness, it was found that the first hypothesis (H1a) was supportive but the other five hypotheses were not supportive. According to the first hypothesis, non-supportive political action (PA) has influence on increasing the country risk (CR) in Bangladesh. The test result supports the hypothesis and the result was consistent with the results of the field study and the prior studies on PA and CR (Hadjikhani and Hakansson 1996; Kee 2005; Kabir 2007; Kim 2007; Clark and S.Kanter 2010; Berg et al. 2011; Hossan, Sarker, and Afroze 2012). Based on the above significant relationship, it is possible to interpret the meaning as being that the action of political parties, that is, the action of ruling and opposition parties may create an environment that indicates whether the situation in a country is risky or not for doing business (Welge and Holtbrugge 2006; Holtbrugge, Berg, and Puck 2007). There are many problems in Bangladesh which are derived from the actions of the government and opposition parties. Lack of a proper political role and lack of the development of good relationships among the stakeholders such as

employees, employers and government officials in various stages of the garment business create an unfriendly environment that leads to a variety of risks related to the garment business and an inefficient SC in Bangladesh. Political instability, corruption and a non-cooperative attitude make a country more risky. In this regard, various studies in the literature (World Bank 2005; Tewari 2006; Hossan, Sarker, and Afroze 2012; Saxena and Salze-Lozac'h 2010; Uzzaman 2010) have mentioned various anomalies in the SC of the RMG industry.

In the field study, different manufacturers described that as external stakeholders the government and political parties were not playing an effective role in creating a better business environment in Bangladesh. Therefore, the manufacturers could not make appropriate decisions for the development of their garment business to reduce the risk.

In a research Jin (2004) described how least-developed countries (LDCs) obtained competitive advantage in the garment (apparel) industry using Vernon's (1966) PLC (product life cycle) theory and Frobel's (1980) NIDL (New International Division of Labor) theory. Jin also described how these countries increased their competitive advantages leveraging industry-specific and country-specific advantages. Buyers always tried to locate another market to reduce the risk when CR increased in a specific country. Berg et al. (2011) also mentioned that the choice of outsourcing country was dependent on CR and PA. During the last four months(March-June,2013), due to the unstable political environment and increased CR in Bangladesh, approximately US$500 million has shifted from Bangladesh to India (The Daily Manab Zamin 2013). Due to the lack of appropriate political action and government role, manufacturers have not been careful about providing a good working environment and good premises. In connection with this, very recently Walt Disney, one of the giant garment retailers of the world, has decided to discontinue their business with the Bangladeshi RMG industry due to some life-threatening occurrences, building disasters and the loss of many lives in some garment companies. Their business was worth approximately US$400 million per year (The Daily Amader Shamoy 2013).

Considering the above circumstances, the ruling party and the opposition should take proper political action to make a good policy to reduce country risk and to ensure a good business environment for the RMG industry of Bangladesh. In the RMG supply

chain stakeholders' relationship is very important to increase the competitiveness. Therefore the government and political parties should act properly with the internal stakeholders. It will certainly encourage the buyers to choose Bangladesh as an attractive platform for outsourcing garment products.

With regard to the hypotheses, hypotheses H1b, H1c, H1d, H1e and H1f were not supported. The relationship of H1c and H1e showed the right direction. The positive relationships of non-supportive PA and internal stakeholders (SB and DB) barriers indicated that the higher presence of the PA factors led to increased supplier-side (SB) and buyer-side (DB) barriers. But, unfortunately, the data did not support the significant association of these constructs in improving competitiveness. This meant that in the SC of the RMG industry, political action (PA) from the external stakeholders was not regarded as an important issue in increasing or decreasing the barriers of internal stakeholders. However, this result contradicted the results of the field study and literature review. In all, 88.33% of respondents in the field study supported the impact of political action and many studies in the literature such as Boddewyn and Brewer (1994); Hadjikhani and Hakansson (1996); Absar (2001); Choudhury and Hossain (2005); Welge and Holtbrugge (2006); Holtbrugge, Berg, and Puck (2007); and Kale (2007) supported the influence of political action on internal stakeholders and consequently on competitiveness. In this research, the relationship between PA and SB (H1c) and PA and DB (H1e) showed the right and positive direction but these were not supported owing to the insignificant t-value.

The relationship of hypotheses H1b, H1d and H1f was hypothesized to be negative but a very contradictory result was found from the analysis in this study with regards to the relationship between PA and internal stakeholders (SD and DD) drivers. The result showed that the above hypothesized relationships were significant enough (except H1f) although the relationship between the constructs was found to be positive, rather than negative. There was no literature in support of hypothesis H1f but it was supported by the field study. In all, 70% of respondents to the field study supported the direct influence of political action on competitiveness but the result showed the opposite. However, there were many studies in the literature in support of the hypothesized relationship of H1b and H1d (Adhikari and Weeratuge 2007; Kale 2007; Verma and Seth 2011) though the test result was the reverse.

Actually it was unexpected that the most of the hypotheses related to the political action were non-significant and non-supportive. Most probably it happened due to lack of believe over the government and political parties' action. In the survey the respondents were from the top and mid-level management. They are educated and highly experienced. They are also well known about the political culture of Bangladesh. The unstable political environment and their negative action is a long term problem in Bangladesh. The garment companies are accustomed to do their business within this environment. As they are highly experienced, they know about the political government and their possible action. Possibly they don't expect anything good from them and don't bother about this problem. The manufacturers expect very few from the government and the political parties. They believe that they have to do something better by their own effort. These types of cultural shock actually affected the respondents and result of the hypotheses

At last it can be said that despite strong literature and field study support the respondents didn't find the independent variable significantly affecting the competitiveness. Further study is needed to investigate the reason behind it.

8.2.1.2 Hypotheses related to bureaucratic behaviour (H2a to H2e)

In any business process or commercial transaction, the government, political groups and bureaucrats play important roles (Hadjikhani and Hakansson 1996). The bureaucrats are part of the government in a country and play an important role in making decisions regarding administration and development in any sector of that country. Bureaucrats are responsible for executing the decisions of the political leadership and for maintaining the day-to-day regulatory and service functions of the state (Nimir and Palmer 1982). The term 'bureaucracy' means any administrative system based on professionalization and hierarchical subordination (Friedrich 1952). Bureaucracy or bureaucratic behaviour (BB) is concerned with the behaviour of officials, while the action of, for example, worker groups, may also lead to deflection of an organisation (Selznick 1943). The context of BB is revealed by bureaucratic decisions. An ideal bureaucratic structure is assumed to contribute to unity and coordination, precision and speed, obedience and loyalty, reduction of friction, continuity across changes in government, etc. (Olsen 2006).

According to stakeholder theory, the government and political groups are important stakeholders (Donaldson and Preston 1995). As part of the government, bureaucrats are also important stakeholders. They may directly influence the supply-side or demand-side issues that accelerate competitiveness. There are many things that need to be done in the process of the RMG industry's supply chain. Policy making and implementation in favour of the RMG industry, delivery of good infrastructural facilities in transport management, ports' management, financial services and many other things where bureaucratic decisions and their supportive activities are very important (Quddus 2001; Adhikari and Weeratunge 2007b; Adhikari 2007a; Islam, Begum, and Rashed 2012). Therefore, the influence of BB is an important part of the proposed model which is supported by stakeholder theory.

Moreover, taking into consideration the influence of BB, five hypotheses were developed related to bureaucratic behaviour (BB). Four hypotheses (H2a to H2d) were developed on the basis of the literature review and field study but only one hypothesis, namely, H2f was developed based only on the field study. After analysis of the influence of BB in the SC process for achieving competitiveness, hypotheses H2a, H2c and H2d were supported but the other two hypotheses, namely H2b and H2e were not supported. According to the first hypothesis, H2a, non-supportive BB increases the country risk (CR) in Bangladesh. The test result strongly supported the hypothesis and the result was consistent with the field study and the prior literature on BB and CR (Hadjikhani 2000; Hadjikhani and Hakansson 1996; Kee 2005; Kabir 2007; Berg et al. 2011; Hossan, Sarker, and Afroze 2012). The relationship of H2c and H2d also showed the right direction. The positive relationship of non-supportive BB and internal stakeholders' barriers, that is, SB and DB indicated that the higher presence of BB factors led to increased supply-side (SB) and demand or buyers-side (DB) barriers. The test result supported the hypotheses and the result was consistent with the results of the field study and the prior studies on BB, SB and DB (Hadjikhani 2000; Hadjikhani and Hakansson 1996; Kee 2005; Kabir 2007; Berg et al. 2011; Hossan, Sarker, and Afroze 2012). Based on the above significant relationship, it is possible to interpret the meaning as being that the behaviour of bureaucrats may create an unfavourable environment which indicates a risky and unfavourable situation in a country for doing business (Welge and Holtbrugge 2006).

There are many problems in Bangladesh which are directly or indirectly related to the SC of the RMG industry and are derived from the actions of the government and bureaucrats. Lack of proper government action and government officials, that is, bureaucrats, in various stages of the garment business including the SC process creating an unfriendly environment which leads to create a variety of risks related to the garment business and the RMG industry's SC in Bangladesh. The services in port management and customs clearances, financial services, documentation related to import and export management, corruption and a non-cooperative attitude make a country more risky. In this regards, various literature has mentioned (World Bank 2005; Tewari 2006; Kaes and Azeem 2009; Joarder, Hossain, and Hakim 2010; Rahman and Hossain 2010; Saxena and Salze-Lozac'h 2010; Uzzaman 2010) numerous anomalies and irregularities in the SC of the RMG industry.

In the RMG industry due to some external factors the manufacturer failed to take right action and decision for the development of RMG business and reduce the risk. In this regard, the external stakeholders like government and bureaucrats can play an effective role for creating better environment of RMG business in Bangladesh. In a research Jin (2004) has mentioned the way of obtaining competitive advantage by leveraging country specific advantages. Berg et al (2011) also mentioned about the choice of outsourcing in his research work. Due to the lack of government initiatives and the role of senior bureaucrats, suppliers are taking more time. As a result, the Bangladeshi RMG industry faces the long lead time problem in supplying its goods to buyers.

From the above analyses, it can be said that the positive role of bureaucratic behaviour in the supply chain is very important to reduce the lead time and improve the competitiveness. The government and political parties should act properly with the bureaucrats to take proper policy in different areas like financial sector, port management, customs clearance etc. The ruling party and the opposition should take proper political action to make a good policy to reduce the negative role of bureaucrats and to ensure a good business environment for the RMG industry of Bangladesh. To improve competitiveness in the RMG supply chain, stakeholders' relationship is very important. Therefore the government, political parties and bureaucrats should act properly with the internal stakeholders for a good policy to reduce lead time.

According to the analyses, hypotheses H2b and H2e were not supported. The hypothesized relationships of BB to SD and BB to COM were negative but the result did not show the right direction and the negative association. The result showed the opposite relationship and the link between BB and SD was significant but the link between BB and COM was insignificant. It happened due to respondents almost similar stands for dependent and independent constructs. Likewise probably bureaucratic behaviour (BB) from the external stakeholders was not observed as an important issue in increasing or decreasing the barriers of internal stakeholders.

Although the relationship between the construct in the hypothesis H2B was found to be reversed, the t-value was significant. However, there was much support in the literature and the field study for the hypothesized relationship of BB and SD (Adhikari and Weeratunge 2007b; Kale 2007; Verma and Seth 2010; Verma and Seth 2011) though the test result was the reverse. There was no support in the literature for hypothesis H2e but it was supported by the field study. In all, 80% of respondents to the field study supported the direct influence of bureaucratic behaviour on competitiveness but the result showed the opposite and was insignificant.

Despite the outcomes, strong support was found from the previous literature and field study as stated above. In this research, the relationship of BB to CR (H2a), BB to SB (H2c) and BB to DB (H2e) was supported and the relationship between BB and SD (H2b) and BB and COM (H2e) showed the opposite and a positive direction. However it is very important to mention here that when model was run with all the indicators of BB, SD and COM the results were in the right direction although not significant. But when non-significant weighted indicators were deleted from the constructs the result came out to be quite unexpected (not supported). It could be a measurement issue with the constructs which needs further investigation. Moreover the hypotheses H2b and H2e were not supported owing to the insignificant t-value and the reverse direction in the relationship. It happened as the respondents did not feel the relationships of the hypotheses H2b and H2e as predicted. Furthermore the respondents didn't find the independent variable significantly affecting the competitiveness. Advance study is needed to investigate the reason behind these relationships.

8.2.1.3 Hypotheses related to country risk (H3a to H3e)

The clothing or garment business in the RMG industry is international in nature. Usually all business transactions involve some degree of risk. When a business works across borders, it always carries some additional risks not present in domestic business. These additional risks are called country risk (CR) (Meldrum 2000). Country risk is actually derived from the interaction of non-supportive political action and bureaucratic behaviour (Abdullah 2005, 2009; Clark and S.Kanter 2010). It also includes risks arising from a variety of national differences in economic structures, policies, socio-political institutions, geography and currencies. Firms are vulnerable not only to attacks on their own assets, but also to attacks on their suppliers, customers, transportation providers, communication lines and other systems. Therefore, in the present business environment, managing SC is very important under the increased uncertainty of country risk. A non-supportive country risk always influences the internal stakeholder of the SC and weakens the competitiveness of the RMG industry.

The Bangladeshi RMG industry is totally dependent on the demand from foreign buyers. Many buyers from different countries across the world are sourcing finished garments from Bangladesh. Therefore, buyers are always concerned about the country risk from the country where they are sourcing their products. Evaluating country risk or evaluating the influence of country risk is a crucial exercise when choosing sites for sourcing.

Therefore, five hypotheses were developed related to country risk (H3a to H3e): these were developed on the basis of the literature review and field study but one hypothesis (H3e) was developed based only the field study. After analysis of the influence of CR in the SC process for achieving competitiveness, two hypotheses, that is, H3b and H3d were supported but the rest of the hypotheses, that is, H3a, H3c and H3e were not supported. According to the second and fourth hypotheses (H3b and H3d), the non-supportive country risk (CR) influences internal stakeholders and increases the supply-side (SB) and demand-side (DB) barriers in the RMG industry's SC of Bangladesh. The test result supported these hypotheses, and the result was consistent with the results of the field study and the prior studies on CR, SB and DB (Min and Galle 1991a; Frear, Metcalf, and Alguire 1992; Grosse and Behrman 1992;

Birou and Fawcett 1993; Swamidass 1993; Hadjikhani and Hakansson 1996; Meldrum 2000; Tsai, C.Yeh, et al. 2005; Berg et al. 2011; Hossan, Sarker, and Afroze 2012). The link of these two supported hypotheses, that is, CR to SB and CR to DB, were positive and in the right direction. Based on the above significant relationship, it is possible to interpret that the impact of country risk (CR) will certainly decrease exports, and buyers will decide to discontinue their business with the Bangladeshi RMG industry. Therefore in the policy making level, the government, political parties and bureaucrats should act properly with the other related stakeholders for making a good policy to reduce country risk.

The positive relationships of non-supportive CR and internal stakeholders' (SB and DB) barriers indicated that the higher presence of the CR factors led to increased suppliers-side (SB) and buyers-side (DB) barriers. This meant that in the SC of the RMG industry, the CR from the external stakeholders was regarded as important issues in increasing or decreasing the barriers of internal stakeholders. This result was also supported by the field study and literature review. In all, 82% of respondents to the field study supported the impact of country risk (CR) and many literature such as Boddewyn and Brewer (1994); Hadjikhani and Hakansson (1996); Absar (2001); Choudhury and Hossain (2005) and Kale (2007) also supported the influence of country risk (CR) on internal stakeholders and, later, on competitiveness.

Tsai et al. (2005) have argued in their research work that according to 'stakeholder influence strategy theory', external stakeholders such as the country, the media or some labour groups have influence on the internal stakeholders of a business. So when a country becomes more risky, the RMG exports will certainly decrease and world market share will be reduced.

Due to the unstable political situation, corruption and the lack of proper steps by the government in the financial sector to develop the infrastructure facilities, country risk (CR) has increased in Bangladesh (World Bank 2005; Joarder, Hossain, and Hakim 2010; Rahman and Hossain 2010; Saxena and Wiebe 2005; Saxena and Salze-Lozac'h 2010; Uzzaman 2010). In last four months (January to April 2013), due to increased country risk, business to the value of US$500 million has been shifted to Bangladesh's neighbouring country, India, and Walt Disney has decided to discontinue their business with the Bangladeshi RMG industry (The Daily Amader Shamoy 2013; The

Daily Manab Zamin 2013). There are many problems in Bangladesh derived from the actions of the government and opposition parties. Lack of a proper political role and lack of the development of good relationships among the stakeholders such as employees, employers and government officials in various stages of the garment business have created an unfriendly environment that leads to the creation of a variety of risk related to the garment business and an inefficient SC in Bangladesh. Political instability, corruption and a non-cooperative attitude make a country more risky. In this regard, various studies in different literature (World Bank 2005; Joarder, Hossain, and Hakim 2010; Rahman and Hossain 2010; Saxena and Salze-Lozac'h 2010; Uzzaman 2010; Tewari 2006) have mentioned various disturbances in the SC of the RMG industry. Moreover country risk (CR) is the result of political, social and economic factors (Oetzel, Bettis, and Zenner 2001). As the political actions are non-supportive, country risk is increasing on a daily basis in Bangladesh.

Considering the above analysis about the external stakeholders' role and the possible reason for increasing CR, the government and bureaucrats should take proper action to reduce the country risk. As country risk increases by the negative action of political parties and bureaucrats, the external stakeholders should make a good policy to reduce the risk arise from negative political action and bureaucratic behaviour. When it is possible to reduce the country risk through necessary action, the suppliers' strength will be increased and at the same time buyers will be encouraged to import more garments products from Bangladesh. This will certainly improve the competitiveness of RMG industry of Bangladesh.

It is shown in the assessment of the structural model that the relationships of hypotheses, H3a, H3c and H3e are not supported. It happened as the frustration was reflected to the respondents' opinion. There are so many anomalies in government officials, political parties and their actions for doing RMG business in Bangladesh. The manufacturers (suppliers) are disappointed about the expected positive role and activities from the government officials and political parties. Already Bangladesh got 35 years of experience in RMG business (Batexpo, 2012). But till now there are so many anomalies in the RMG supply chain. Therefore frustration came to the manufacturers mind. Alternatively it happened when all the stakeholders realised the contribution of garment sector in the economy of Bangladesh. It is clear to all stakeholders that the garment sector is the backbone of the economy of Bangladesh.

Therefore the government, political parties are probably more careful about this industry and putting more attention to the supply chain of garment products. The government and opposition parties have taken some important measures specially for this sector in any unfavourable situation and political crisis. Accordingly political parties are now committed to put this sector outside of any political unrest and activities so that it can run and export their items uninterruptedly. It might be the probable reason for the non-supportive behaviour of the hypotheses H3a, H3c and H3e. Moreover, there could be issues with the measurement items and/or respondents perception. Therefore more research is needed.

However it can be said that regardless the opposite outcomes, non-supportive CR actually had a strong influence on internal stakeholders as there was sufficient support in the literature and field study for hypothesis H3c. Despite strong literature and field study support the respondents didn't find the independent variable significantly affecting the competitiveness. Further study can be done to explore the reason behind it. There was no sufficient support in the literature for hypothesis H3e (CR to COM). Only the field study supported that link.

8.2.2. Hypotheses related to internal stakeholders and competitiveness

In the RMG industry's SC, the main internal stakeholders are the final product manufacturers or the suppliers and buyers. Resource dependency theory (RDT) considers buyers' and suppliers' dependency relationships as important linkages for firms in reducing the uncertainty surrounding their operations (Carter and Rogers 2008). Competitiveness (COM) can be increased through reducing the uncertainty and minimizing dependency which is possible by developing good relationships and understanding between the buyers and suppliers using this theory. This relationship can also be developed by the positive influence of external stakeholders and building relationships among the stakeholders across the SC.

However, according to the conceptual model, external stakeholders influence internal stakeholders and internal stakeholders influence competitiveness. External stakeholders actually influence the drivers (strengths) and barriers (pressure/weaknesses) of internal stakeholders. Later on, these drivers and barriers

actually influence competitiveness. Four hypotheses were developed taking into consideration the drivers and barriers which are discussed below.

8.2.2.1 Hypothesis H4

According to hypothesis H4, supply-side drivers (SD) positively influence competitiveness (COM). The results showed that the hypothesis was supported and the hypothesized relationships were found to be highly significant with a positive direction. This means that when SD increases, then COM will increase and, conversely, when SD decreases then COM will decrease. SD means the suppliers' strengths. The suppliers can increase their competitive advantage through their strengths and, later on, can increase competitiveness. There are many studies in the literature that support supply-side drivers and their relationship with COM. The drivers or strengths are in the form of a competitive price, cheap labour, quality products, marketing strength, experienced in working with a reputed brand and with the largest retail chains such as Wal-Mart, Tesco, H&M, etc. (Rahman 2005; Rahman and Anwar 2006; Rahman, Bhattacharya, and Moazzem 2008; Rahman and Hossain 2010). Many researchers have also mentioned that product diversification, product upgrades, low wages rate, fast and efficient workforce, high labour supply, communication skill, preferential treatment, technological upgrade and trade union-free production units are the SD of the RMG industry (Haider 2007; Joarder, Hossain, and Hakim 2010; Saxena and Salze-Lozac'h 2010; Sultana et al. 2011). Therefore, there are many studies in the literature that are in support of supply-side drivers and their positive role in increasing performance and competitiveness. In all, 100% respondents in the field study supported this hypothesis. The above studies in the literature also mentioned that by having these drivers, the suppliers can easily bargain with the buyers. So, it can be said that SD can increase the COM of the RMG industry.

The above drivers are not stable for the long run. In a research study, Adhikari and Weeratunge (2007) stated that the focus on cheap labour for maintaining cost competitiveness was not sustainable in the long run as this allowed investors to switch from Bangladesh to another country. Therefore, Bangladesh must seek new avenues to retain its position and, in this situation, external stakeholders like the government and bureaucrats need to act appropriately to enhance the suppliers'

drivers: steps should be taken to discover new strategies such as an efficient SC to create new drivers to improve competitiveness.

8.2.2.2 Hypothesis H5

Supply-side barriers (SB) are the negative side in relation to suppliers. These are actually the suppliers' weaknesses. According to this hypothesis, SB negatively influences the competitiveness (COM). This means that when SB increases, then COM will decrease and, conversely, when SB decreases, then COM will increase. Unfortunately, the results did not support the hypothesis. The t-value of this hypothesized relationship was significant but the path-coefficient did not show the negative relationship or association among the constructs. It happened as the frustration was reflected to the respondents' opinion and probably it was not an important issue to the respondents. Therefore; the hypothesis was rejected even though it was supported by the literature and field study. In the RMG business, supply-side barriers are the weaknesses (Ahmed 2009) in the SC which are hindering the improvement of competitiveness. These barriers include poor infrastructure, long lead time, lack of commitment and trust, being under pressure to reduce price, weak bargaining power, buyers' freedom to choose alternative suppliers from another country, lack of cooperation, etc. (Nuruzzaman 2001, 2007; Nuruzzaman, Haque, and Rafiq 2010; Adhikari 2007a; Kale 2007; Berg et al. 2011; Sultana et al. 2011; Halder and Kim 2012). Islam, Begum, and Rahsed (2012) have identified suppliers' barriers as being: inadequate development of backward linkage industries; production of low-value items; high dependency on imports; high lead time; low foreign direct investment; poor energy supply; poor transportation; poor port facilities; worker conflicts; low salary of workers; insufficient government policy; incompetent ports; lack of training; lack of marketing tactics; problematic middle management; communication gap; credit problem; and dependency on foreign market demand.

Moreover, the lack of human resource management; labour unrest; inadequate supply of materials and accessories; inability to diversify products and markets; irregularities relating to customs, bonds and shipping; low productivity; corruption in port management, and political instability have also been identified as barriers for suppliers in the RMG industry (Abdullah 2009; Huda, Karim, and Ahmed 2007;

Guest 2007; Hossan, Sarker, and Afroze 2012; Rahman and Anwar 2007; Uddin and Jahed 2007). Competitiveness will be increased when the above barriers are decreased by the appropriate action by the government and bureaucrats (Islam, Begum, and Rashed 2012; Saxena and Salze-Lozac'h 2010). The field study also supported the above hypothesis. In all, 100% of field study respondents supported the hypothesis. But the test result did not support the hypothesis.

Most probably this happened due to respondents almost similar stances on the constructs. Despite strong literature and field study support the respondents didn't find the variable significantly affecting the competitiveness. Further study is needed to investigate the reason behind it.

8.2.2.3 Hypothesis H6

The sixth hypothesis (H6) was developed taking into consideration the hypothetical relationship between demand-side drivers (DD) and competitiveness (COM). In the RMG business, demand-side drivers are the buyers' strengths which passively play positive roles for the SC (Razzaque and Eusuf 2008; Ahmed 2009). According to this hypothesis, DD positively influence competitiveness (COM). The test result supported the hypothesis and this result was consistent with the results of the field study and the prior studies in the literature on DD and their influence (Rahman 2005; Razzaque and Eusuf 2008; Wu et al. 2004; Zhao et al. 2008). The link in this supported hypothesis, that is, DD to COM, was positive and in the right direction. This means when DD increase, then COM will increase and, conversely, when DD decrease, then COM will decrease. Based on the above significant relationship, it was possible to extrapolate that the impact of DD would certainly increase the business and competitiveness of the RMG industry.

Furthermore, there was much support in the literature for demand-side drivers and their relationship with COM. These drivers or strengths are in the form of strong bargaining power; ability to choose alternative sourcing location; offer a good price; a bulk customer; dealing with a reputed brand; special facilities from the home country's government; and trust and commitment (Ahmed 2009; Rahman 2005; Wu et al. 2004; Zhao et al. 2008). Some drivers were derived from the field study. In all, 60% of field study respondents supported this hypothesis. Drivers such as a good credit history, direct purchasing and favourable trade agreements were also

mentioned by various interviewees in the field study. These types of drivers actually enhance the bargaining power of the buyers. As it is buyers' market and suppliers are dependent on the buyers' demand, this is an additional driver for the buyers. In the RMG industry, the suppliers are very careful about the drivers of the buyers and take the necessary actions to fulfil the buyers' demand. These types of action actually make the suppliers more competitive; therefore, it can be said that DD can increase the COM of the RMG industry.

8.2.2.4 Hypothesis H7

The last hypothesis is related to demand-side barriers (DB). Demand-side barriers are the negative side of the buyers. These are actually the pressure on the buyers from the suppliers. According to this hypothesis, DB negatively influences competitiveness (COM). This means that when DB increase, then COM will decrease and, conversely, when DB decreases, then COM will increase. Unfortunately, the result did not support the hypothesis. The t-value of this hypothesized relationship was also not significant and the path-coefficient did not show the negative relationship or association among the constructs. Therefore, the hypothesis was rejected even though it was supported by the literature and field study.

In the RMG business, demand-side barriers are the various pressures raised from the buyers' side (Ahmed 2009). In the RMG industry's SC, these types of barriers hamper the improvement of competitiveness and side-by-side with that, any inducement to gain competitiveness.These barriers include pressure for a shorter lead time, pressure to maintain commitment and workers' rights (Adhikari 2007a; Berg et al. 2011; Kale 2007; Sultana et al. 2011; Nuruzzaman 2009). Moreover, different types of conditions and regulations imposed by the local country's government (Adhikari and Weeratunge 2007b; Nuruzzaman 2007; Nuruzzaman, Haque, and Rafiq 2010); compliance issues; and pressures to increase workers' wages and offer a good working environment, to reduce price and have a shorter lead time are the buyers-side barriers (Claeys and Brachet 2008; Hossan, Sarker, and Afroze 2012; Rahman 2005; Rahman and Hossain 2010). Razzaque and Eusuf (2008) also mentioned some barriers that arose from the buyers such as better working conditions and continuous pressure about international labour standards, etc.

Competitiveness will be increased when the above barriers are decreased by the appropriate action of the manufacturers or suppliers (Hossan, Sarker, and Afroze 2012; Islam, Begum, and Rashed 2012; Razzaque and Eusuf 2008; Saxena and Salze-Lozac'h 2010). In all, 60% of field study respondents supported the hypothesis. But the result did not support the hypothesis.

In conclusion, it can be said that, due to an opposite outcome, the hypothesis H7 was not supported even though, having support from the literature and field study. It occurred probably the respondents didn't find the variable significantly affecting the competitiveness. More study can be done in this regard to investigate the reason for this non supportive hypothesis.

8.3 Summary

This chapter presented the interpretation of the results of the PLS analysis of the comprehensive research model for improving competitiveness. The findings of the industry-wide survey among the garment industry in Bangladesh were discussed according to the results of the hypotheses. The results were discussed and compared with the existing literature and field study analysis.

Among the 20 hypotheses, the proposed hypothesized relationships that were supported were: i) H1a, that is, relationship between political action (PA) and country risk (CR); ii) H2a, that is, relationship between bureaucratic behaviour (BB) and CR; iii) H2c, that is, relationship between BB and supply-side barriers (SB); iv) H2d, that is, relationship between BB and demand-side barriers (DB); v) H3b, that is, relationship between CR and SB; vi) H3d, that is, relationship between CR and DB; vii) H4, that is, relationship between SD and competitiveness (COM); and viii) H6, that is, relationship between DD and COM. The remaining hypotheses were not supported. Overall, all the positive relationships were supported. Initially, the hypotheses were developed based on support from the literature and field study. After analysis, these relationships were found to be significant and it was proven that the external stakeholders have influence on internal stakeholders that leads to improving the competitiveness of the RMG industry. All the negative hypotheses were not supported.

This chapter also provided possible explanations for the hypotheses that were not supported in the study. Five different hypotheses were significant but the relationships were not negative as hypothesized. The rest of the hypothesized relationships did not show the right direction and association. The t-values of these hypotheses were also insignificant. Plausible explanations for the statistically insignificant hypotheses were considered. However, the practical implications of the findings provided suggestions on effective measures that could be undertaken towards improving competitiveness in the RMG industry.

In the last chapter, the thesis will conclude by presenting the summary of the research, its contributions and limitations, as well as directions for future research.

CHAPTER 9

Conclusions and Future Directions

9.1 Introduction

To investigate the influence of stakeholders in the RMG industry's SC, this research was conducted using mixed-method analysis with the aim of improving the competitiveness of the Bangladeshi RMG industry. Taking into consideration the aim of this research, a conceptual model was developed in chapter 3: based on the findings of the field study in chapter 5, the model was then refined and finally a comprehensive model was developed. The hypothetical relationships, that is, hypotheses were drawn from the comprehensive model in chapter 6. Based on these relationships, a questionnaire was developed to collect data for quantitative analysis. Using the quantitative data, obtained from Dhaka-based garment companies, the hypotheses were tested by PLS-based SEM. The results of the quantitative data were presented in chapter 7. Eight hypotheses were accepted of the 20 hypotheses developed. The discussions about the accepted and rejected hypotheses were presented in chapter 8 on the basis of the results in chapter 7, the field study analysis and support from the literature. This concluding chapter 9 provides the summary and conclusion of the research.

Using the research questions and objectives as its basis, the next section presents a summary of the research. This chapter also discusses the contribution of the research in terms of both its theoretical and practical aspects. Moreover, it concludes with the limitations of the study followed by the future directions for research in the context of this research area.

9.2 Summary of the Research

This research study on improving competitiveness was conducted based on the gap in the literature with regard to improving the competitiveness of the RMG industry, its SC and the influence of the stakeholders involved in the RMG industry's SC. In this study, the research model was developed based on the concept of stakeholder

and resource dependency theories, as well as incorporating relevant elements sourced from studies in the literature about political economy and specifically about SCM in the garments industry and also including other important industries. The constructs and items of the initial research model were developed from the comprehensive literature review with this later validated and improved by a qualitative field study.

This research used the mixed-method approach as discussed in chapter 4.The mixed-method approach combines qualitative and quantitative methods of research. The qualitative phase was undertaken to refine and enhance the initial model (chapter 5). In the qualitative phase, 10 interviews were conducted with top executives of 10 different garment companies. Using a semi-structured questionnaire, the data were collected from the field study and analysed through using the content analysis approach (chapter 5). Overall, the findings supported the initial model. A little modification was done to the initial model after the field study analysis. Finally, by combining the results from the field study with the relevant literature, an integrated and comprehensive model was developed for this study (chapter 5). Altogether, eight constructs were derived from external and internal stakeholders and 56 items were confirmed for the comprehensive model. Accordingly, hypotheses within the model were established (chapter 6)

An industry-wide survey was conducted in the second phase of the study. Prior to that, a structured questionnaire was developed based on the combined research model. The layout of the questionnaire was slightly revised according to the feedback after the pilot test (chapter 6). The survey was then administered among garment companies in Dhaka, Bangladesh. After the survey, the collected data were analysed using the PLS-based SEM technique (chapter 7). The analysis followed the PLS framework by sequentially assessing the measurement model and following that, the structural model. The result of the hypotheses testing found that eight suggested relationships were statistically significant while the other 13 hypotheses were not supported (chapter 7). The results were presented and comprehensively discussed in chapter 8.

9.3 Contribution of the Research

The results of the study have made several valuable contributions from both research and practical points of view.

9.3.1 Methodological contribution

The major contribution of this research focuses on the method that was adopted. This research applied the mixed-method approach that combined qualitative and quantitative approaches for analysing data. Initially, in the qualitative approach, the interviewed data were analysed through content analysis to refine and revise the model then, based on the final model, quantitative data were collected and analysed through the PLS-based SEM technique. The mixed-method approach was actually adopted to collect reliable information from the field which was then combined with the literature to achieve a better result in the quantitative phase.

This is relatively new methodology in the area of RMG research where the SC has been analysed with the aim of improving the competitiveness of the RMG industry. Many research studies have been undertaken to improve performance or competitive advantages in different industries in the context of developed nations in the Western culture and using either method, whether qualitative or quantitative, in these research studies but there has been scarce use of both methods. There was no significant research for improving competitiveness in the garment industry and in the context of developing nations like Bangladesh. This research was conducted in the RMG (clothing) industry of Bangladesh and data were collected on the stakeholders involved in the RMG industry's SC.

9.3.2 Theoretical contribution

One of the significant contributions of the research is to the theory and literature of competitiveness and the SC. This study represents an important contribution to theory by integrating two theoretical perceptions to identify factors of the RMG industry's SC that affect the competitiveness of the RMG industry. This research study contributes to the understanding of both external and internal stakeholders of the national and international perspectives in the RMG (textile and clothing) business. It combines the insights of stakeholder and resource dependence theories along with the concept of the SC in improving effectiveness, the dynamism of the RMG industry's SC and finally to improving the competitiveness of the RMG industry in Bangladesh.

Very few research studies have been undertaken in apparel SCM to increase performance and reduce lead time using information technology and focusing on integrated relationship management, collaborative relationships, etc. (Au and Ho 2002; Bowen 2000; Buxey 2005; Chandra 1997; Chandra and Sameer 2000; Dossenbach 1999; Lambert and Pohlen 2001; Pramatari 2007; Rungtusanatham 2003; Wong 1999; Zhao et al. 2008). This research considers some new external constructs, namely, political action, bureaucratic behaviour and country risk from external stakeholders' points of view in increasing the performance and competitiveness of the RMG industry's SC, aspects with which previous studies have not dealt. The current research's approach is therefore expected to make a unique theoretical contribution in the RMG industry's SC. Moreover, this research will also make a unique contribution to the academic literature by dealing with the RMG industry's SC in a developing country like Bangladesh.

In the context of improving competitiveness for sustainable competitive advantage in the post-MFA period, this study fills a theoretical gap by developing a research model from the literature and further improving it through qualitative field study analysis ensuring the use of influential constructs and items. The research model was assessed by using an empirical data set linking observations of executives from different garment companies in Bangladesh. Thus, this study contributes to the issue of competitiveness by way of analysing the SC of the RMG industry in a developing nation as there has been no previous research on the SC and related stakeholders that has explained ways of improving competitiveness.

Finally, to the best of the researcher's knowledge, there are very few studies in the clothing sector that have attempted to examine competitive advantage and performance. Most of these studies are on developed countries from the perspective of Western culture but studies about the competitiveness of the RMG industry in a developing country like Bangladesh are very scarce. Most of the previous research studies have been to address issues of problems and prospects: some have been on competitive advantages in the post-MFA period but these are mostly focused on information systems. Therefore, the theoretical contribution of this study is completely new because, firstly, it investigates the issue of competitiveness in the post-MFA period; secondly, it analyses the SC; thirdly, it is focused on a developing nation like Bangladesh; fourthly, it analyses the influence of both internal and

external stakeholders in the RMG industry's SC; fifthly, it uses a combination of two theories; and, lastly, it used a mixed-method approach.

9.3.3 Practical contribution

It has been revealed that the outcomes of the study have made an important contribution to the SC of the garment industry in Bangladesh as it has drawn attention to some hidden issues related to the development of better customer-oriented SCM for improving competitiveness. In a practical sense, this study certainly contributes to the Bangladeshi RMG industry. In accordance with the desire of the RMG manufacturers, the research has shown that some influential constructs of the RMG industry's SC affect the competitiveness of the RMG industry. The outcome of the study is useful for various stakeholders of the Bangladeshi RMG industry sector ranging from the government to various private organisations. Consequently, the manufacturers and other SC members or stakeholders can take useful and necessary action in practical ways to achieve a better result. Recognising the need for the RMG industry in Bangladesh is the most important contributions of this research. For the first time, stakeholders are able to see what would make the industry more competitive and what support and assistance needs to be provided to them. Accordingly, various policies can be developed and implemented in order for the Bangladeshi RMG sector to compete in the world market.

However, combining the findings of this research, the three main stakeholders – the government, suppliers and buyers – can accomplish the potential for development and solve Bangladesh's RMG growth formula. Most importantly, these stakeholders need to work hand in hand on their continued efforts to implement the various measures that are involved in improving the image and competitiveness of the Bangladeshi RMG industry. The need has been identified for a new level of collaboration with regard to compliance, in which stakeholders join forces across the government, suppliers, buyers and other stakeholders to anchor ethical and sustainable business practices along the SC.

The main contribution of the study is the identification of the industry's external stakeholders' elements or constructs and internal stakeholders' strengths and weaknesses that influence the competitiveness of the RMG industry. In this study "country risk" was identified as a new construct created by the interaction of

"political action" and "bureaucratic behaviour", the two main external stakeholders constructs. Finally, it has been shown how these three external stakeholders' elements or constructs influence the internal stakeholders' constructs in the RMG industry's SC.

Another contribution of this research is to make the SC more efficient and competitive. There has previously been no significant research on how to make the RMG industry's SC efficient. There are very few research studies in respect to lead time reduction or minimization of costs in the SC. Those research works have only considered some import and export activities. However, this research has contributed to the SC and has shown the practical influence of external stakeholders, such as the government and bureaucrats.

Finally, it is our hope that this research project will allow local Bangladeshi garment manufacturers to undertake steps for future preparedness in the competitive garment market. Moreover, the study will be helpful for SC academics and practitioners particularly in Bangladesh but also throughout the world.

9.4 Limitations

This research study also has some limitations as is the case with other research studies. These limitations could be considered as areas for future research. In regard to methodological issues, firstly, in using the sampling method, the selection of the participants' sample was not purely random. As explained in the research methodology chapter, data collection from the RMG sector was very difficult; the participants who took part in the field study were selected based on convenience sampling. In the main survey, the garment companies were all selected purposively where access was easier. Considering these difficulties, only garment manufacturers and Dhaka-based garment companies were allowed to participate in the main survey of this study.

Another limitation was that the samples were limited mostly to large companies located in the capital city due to time and financial constraints. As the study was about the competitiveness of the RMG industry, therefore, irrespective of the company size, a different location including the export processing zone in different cities should be considered. Therefore, there is still the need to further investigate garment companies of various sizes in different locations in Bangladesh.

The conclusions reached in the study were not of universal application as the research was conducted in the context of the garment industry in a developing country like Bangladesh. The generalizability of the results is limited to only those organisations in developing countries which are export oriented and in which the SCM is not up to the mark due to the external stakeholders' role. The developed model and the interpretations are industry specific, particularly for the Bangladeshi garment industry. The results of this study might not explain the same problem from a different perspective even in the same industry in a different country.

9.5 Future Research Directions

The limitations of this study suggest the need for further research. The future directions of this research are summarised in the following points.

In this research, a model was developed for a specific industry in a specific country, that is, for Bangladesh which therefore may not be applicable in another country: however, it could be a milestone for undertaking such research in another developing country. Considering the findings of this research, researchers from other developing countries may develop a more country-specific model for a similar industry. Accordingly, this process might be helpful in increasing the generalizability of this model in different developing nations for the same or a similar industry.

In future, this research or this research model could be used in other export-oriented industries in Bangladesh or in other developing countries across the world.

This study was limited to investigating the large and medium garment companies of Dhaka city, Bangladesh. In future, all sizes of garment companies across the country including in the export processing zone could be considered. As the RMG industry is the backbone of the Bangladeshi economy, this research model could be used for a specific external factor such as the government or political action or country risk to improve competitiveness or some new external variables could be considered also in seeking to improve competitiveness.

From the field study, it was found that political action, bureaucratic behaviour and country risk had direct influence on the competitiveness of the RMG industry but finally, after quantitative analysis, these hypotheses were rejected. So, in future, this could be another research study in the RMG industry. Moreover, based on support

from the literature and the field study, it was found that political action has a sufficient level of influence on the elements of internal stakeholders that improve the competitiveness of the RMG industry but, finally, all the links of the model to internal stakeholders were rejected. Therefore, this could be another important research study for the RMG industry of Bangladesh to improve competitiveness.

Last but not least, this research provides a direction for a resource-dependent environment showing how a developing country could increase the efficiency of its garment SC and later improve the competitiveness of its garment industry taking into consideration the contribution of external and internal stakeholders. In future, a comparative study could be done on how competitors like Vietnam in a resource-dependent environment are becoming more competitive in this industry. Another comparative study could be done on competitors like China and India who are doing business in a resource-based environment.

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10 individual constructed model as per interview

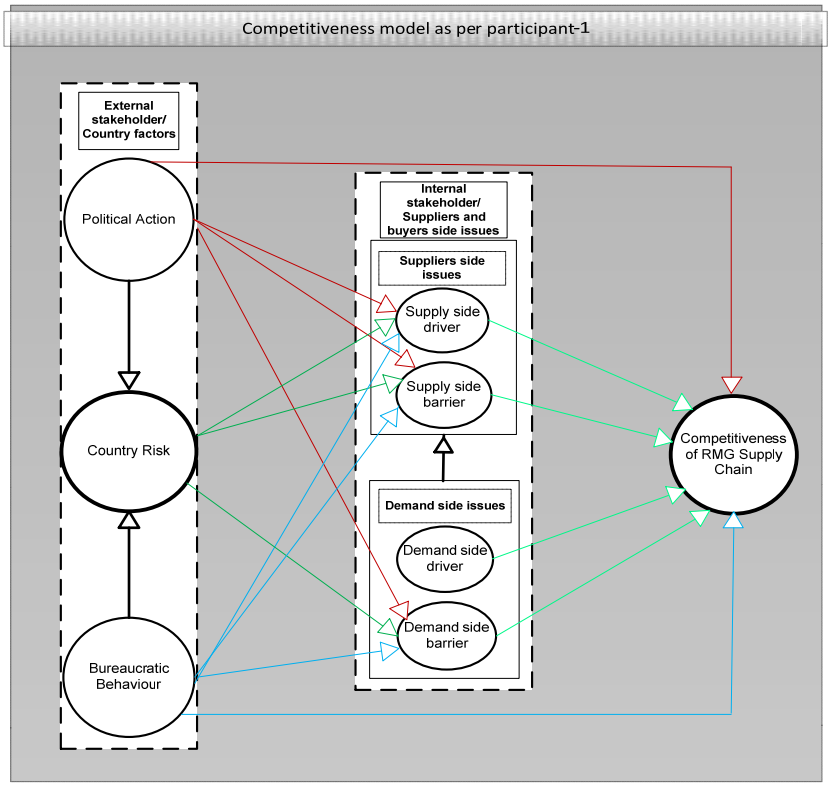


Figure A.1: Competitiveness model as per participant #1

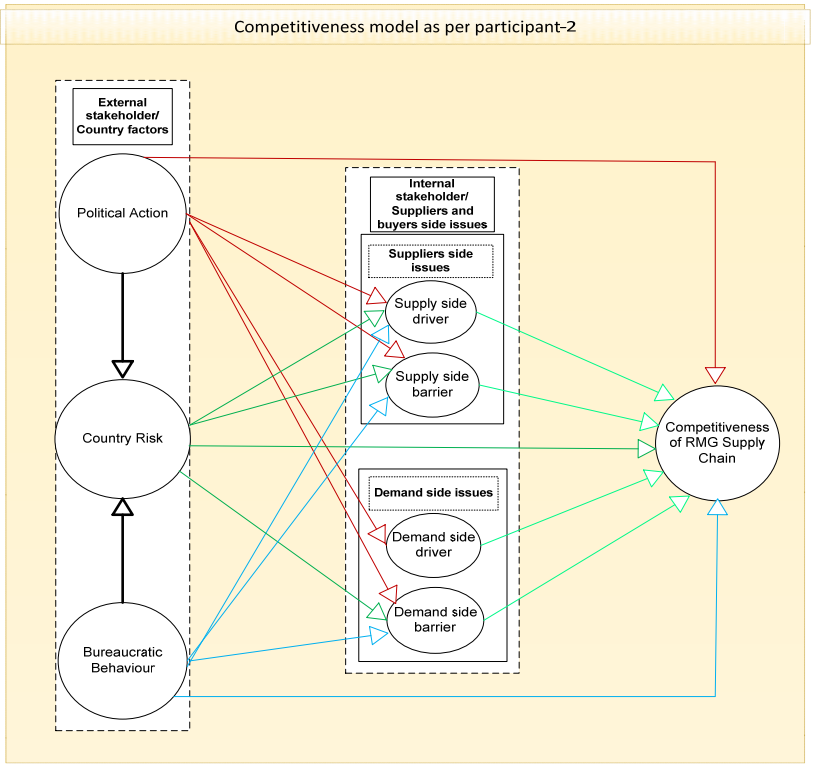


Figure A.2: Competitiveness model as per participant #2

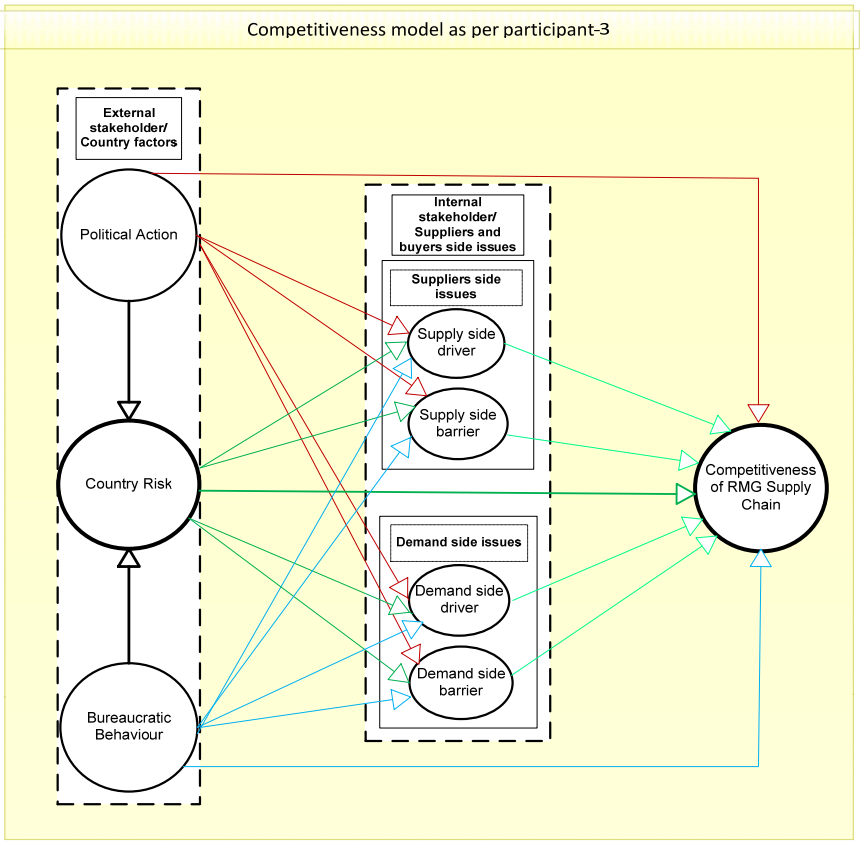
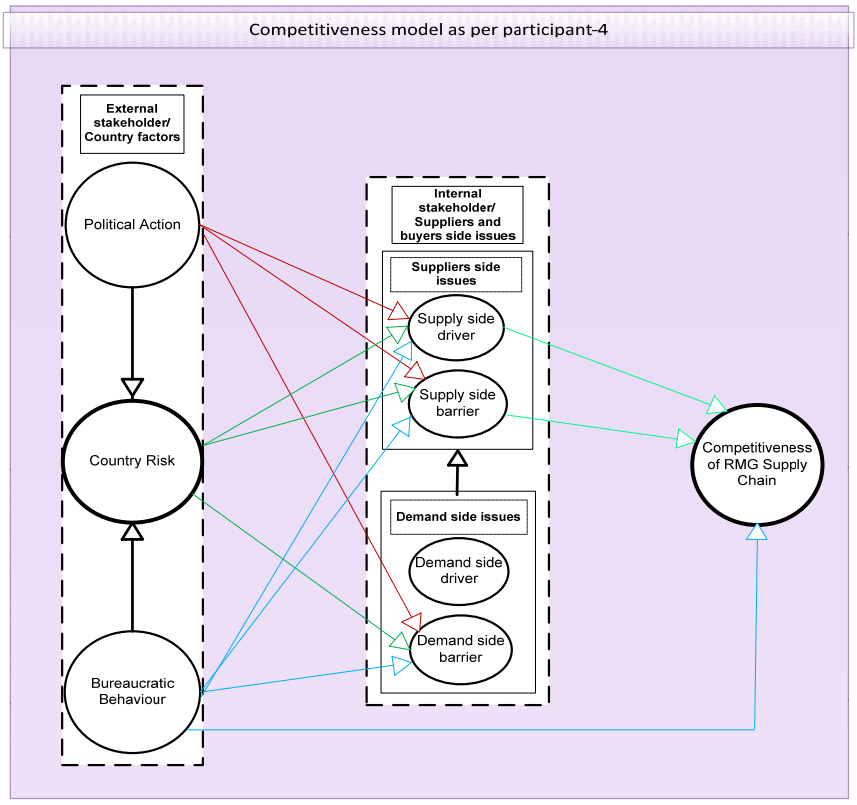


Figure A.3: Competitiveness model as per participant #3



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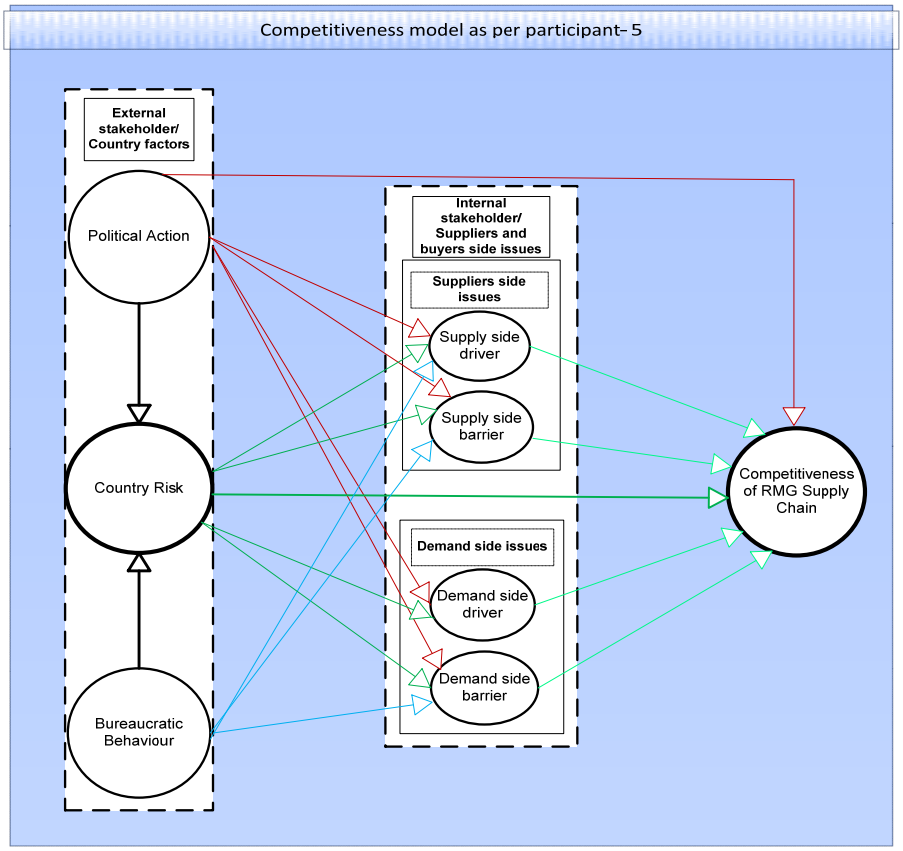

Figure A.5: Competitiveness model as per participant #5

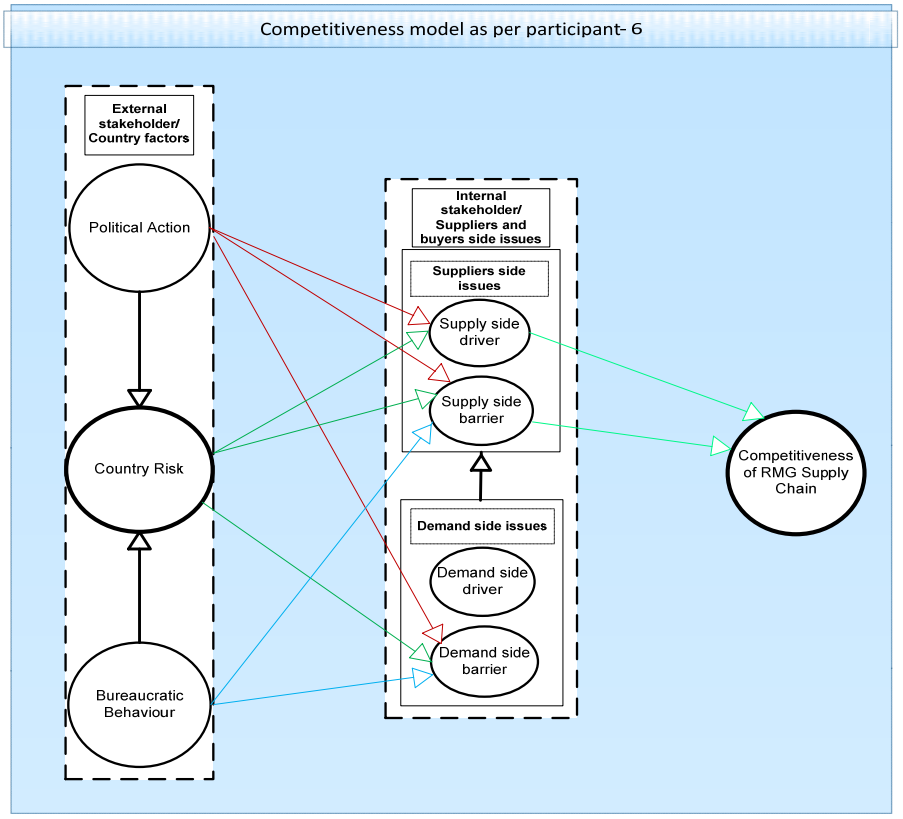

Figure A.6: Competitiveness model as per participant #6

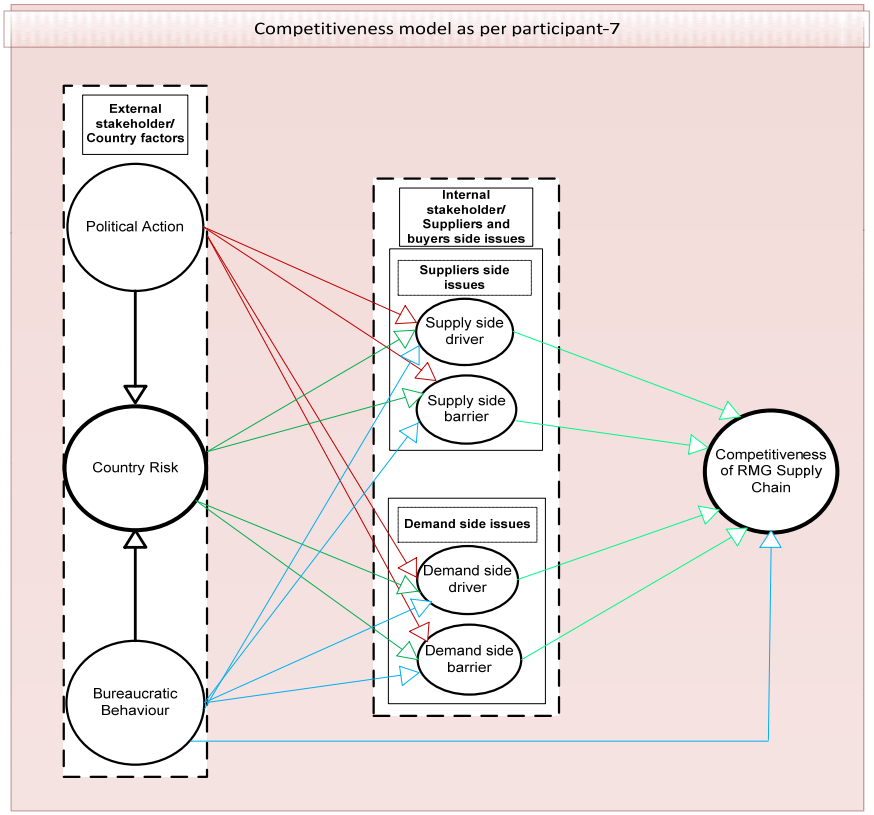

Figure A.7: Competitiveness model as per participant #7

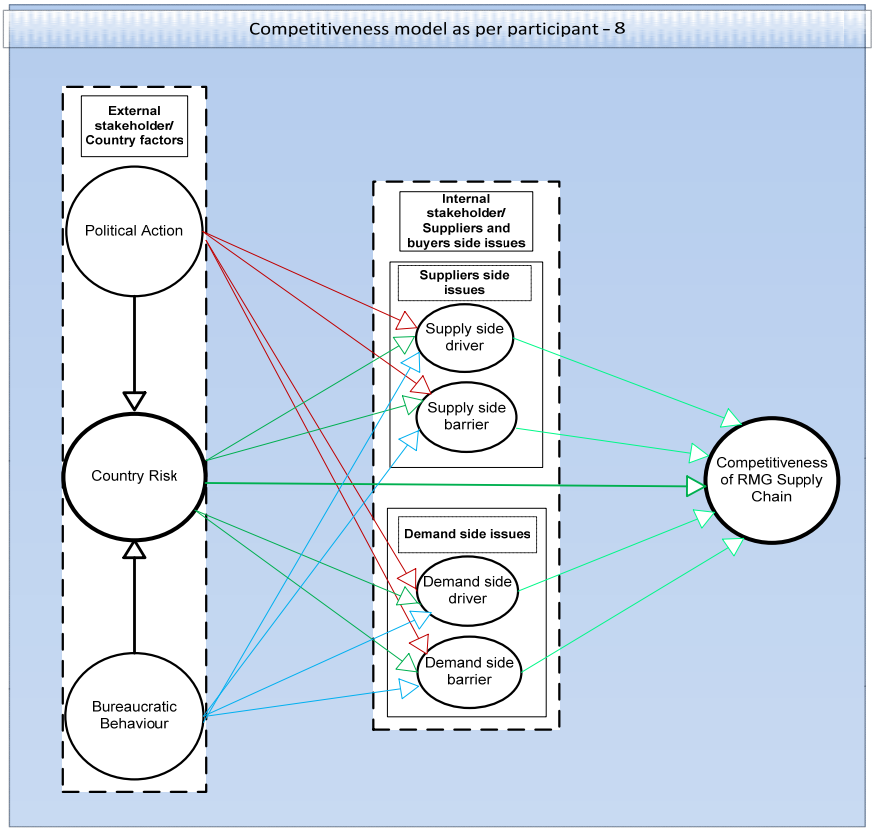

Figure A.8: Competitiveness model as per participant #8

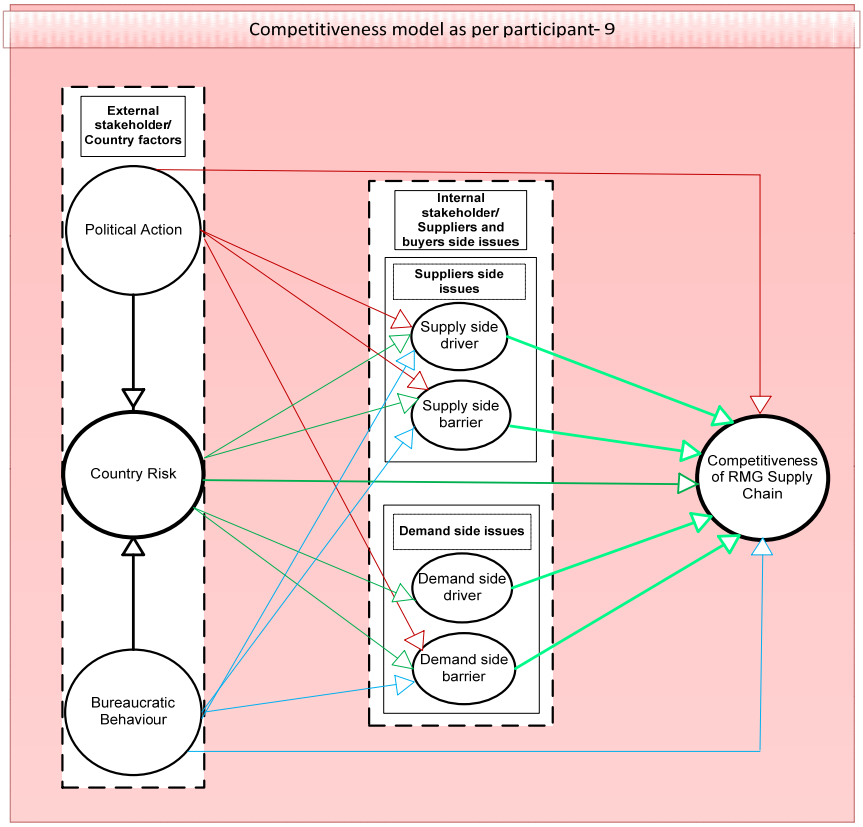

Figure A.9: Competitiveness model as per participant #9

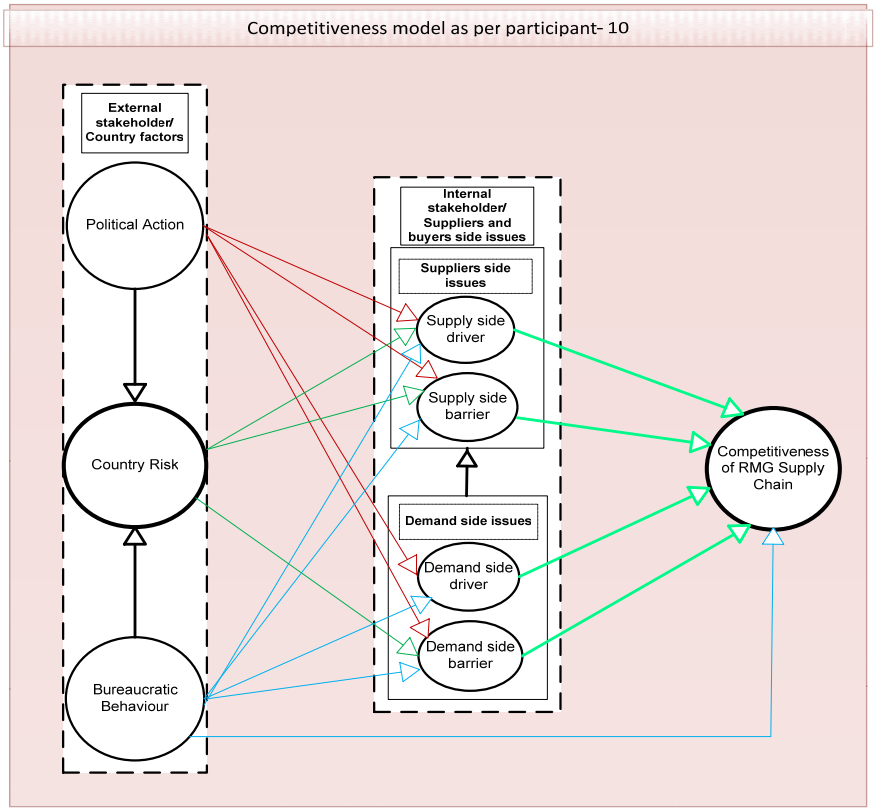

Figure A.10: Competitiveness model as per participant #10

Appendix- 2

Semi-structured questionnaire for the qualitative part

Interview Questionnaire

The primary objective of this interview is to understand the present status of supply chain in Readymade Garment (RMG) Industry in Bangladesh. In terms of its competitiveness, stakeholders and various issues related to country environment.

Introductory Questions

Your name.....

Years of Experience.....

Your present position, duties and responsibilities.....

Semi structured questions

Competitiveness

European Management Forum(1984) defines competitiveness as "the immediate and future ability of, and opportunities for, entrepreneurs to design, produce and market goods worldwide whose price and non-price qualities form a more attractive package than those of foreign and domestic competitors" (Buckley et al,1988). In the RMG industry the competitiveness is to increase or retain market share in the quota free environment by reducing lead time after the completion of Multi Fibre Agreement.

Main question

1. What is your perception about competitiveness of Bangladeshi RMG?

Probing questions

i. What are the things you usually consider to increase competitiveness?

(Order cycle time, Delivery performance, lead time, Import dependency, Responsiveness and Stakeholder relationship)

ii. Is it possible to increase competitiveness through supply chain management? In what way?

iii. Could you please tell me about supply chain management (SCM) in the RMG sector of Bangladesh?

vi. Could you tell me about the influential stakeholders in the supply chain?

(Buyers, Manufacturers or suppliers, Government and Political parties, Bureaucrats)

v. How are they influencing the competitiveness of supply chain?

vi. Are RMG businesses shifting from Bangladesh to Pakistan, India and China? If yes, provide some reasons for that.

Supply side issues (Business actor)

Main question

2. What are the supply side drivers (strengths) (from the manufacturers' side) that may enhance the competitiveness of RMG supply chain?

Probing questions (supply side drivers)

i. As a supplier what are your strengths?

(Strength or drivers: lead time, competitive price, cheap labour, quality products, efficient chain, experienced, bargaining power, government role)

ii. Do you think the government, bureaucrats and political environment of Bangladesh support you as suppliers? How?

iii. Do you think the acts of bureaucrats are drivers? How?

Main question

3. What are the supply side barriers (from the manufacturers' side) that may hinder the competitiveness of RMG supply chain?

Probing questions (supply side barriers)

i. What are the things you face as barriers (disadvantages) in the supply chain during garments supply?

(Barriers: long lead time, non-competitive price, costly labour, quality products, inefficient chain, in experienced, poor bargaining power, import dependency, poor infrastructures, lack of responsiveness, government role)

ii. Do you think the actions of the government, bureaucrats and political environments of Bangladesh hinder you as supplier? How?

iii. Do you think the acts of bureaucrats are barriers? How?

Demand/ buyer side issues (Business actor)

Main Question

4. What are the demand side drivers (strengths) (from the buyers' side) that may enhance the competitiveness of RMG supply chain?

(Bargaining power, bulk customer, brand image, having special facilities for importing garments from the LDCs, relationship, trust)

Probing questions

i. Could you please tell me about your buyers?

ii. How do you supply your product to the buyer? Do you think that the buyers are satisfied over your supply management?

iii. Is there any issue for which buyers are interested to purchase garments through the existing supply chain?

v. In your opinion in what ways political actions and bureaucratic behaviours may act as demand side drivers?

Main question

5. What are the demand side barriers (from the buyers' side) that may impede the competitiveness of RMG supply chain?

(Suppliers long lead time, complaints against human rights, different conditions and regulations imposed by both governments)

Probing questions

i. How do you supply your product to the buyer? How do you know that the buyers are not satisfied over your supply management? Why?

ii. Are the buyers giving more emphasis on some issues in the supply chain?

iii Is there any issue for which buyers are not interested to purchase garments through the existing supply chain?

iv. Do you think buyers are creating barriers to improve competitiveness? How?

v. In your opinion in what ways political actions and bureaucratic behaviours may act as demand side barriers?

Country factors (Non business actor)

Country factors are some variables which may enhance or hinder the foreign investment in a specific country or influence in negative or positive way on the local and international business environment. In this study the considered two main factors are namely; Bureaucratic Behaviour and Political Action. Country risk is another factor which is the ultimate result of those two factors. In this study bureaucratic behaviour, political actions and country risk are considered as country factors (Hadjikhani et al, 1996).

Main question

6. What is your observation about political actions over your business?

Probing questions

i. Could you tell me please about the political actions in Bangladeshi RMG which may affect the supply side and demand side issues?
ii. How do you think government or political parties are responsible for the competitiveness issue of RMG?
iii. How political action becomes as drivers or barriers to the buyers and suppliers?

Main question

7. How do you think that the bureaucratic Behaviours are weakening the competitiveness of supply chain?

Probing questions

i. Could you tell me please about the bureaucratic behaviours in Bangladesh which may affect the supply side and demand side issues in RMG business?
ii. How do you think that the bureaucrats are responsible for influencing the competitiveness of RMG supply chain?
iii. In your opinion, in what ways bureaucratic behaviours may act as drivers or barriers to the buyers and suppliers?

Main question

8. How do you think about country risk for your business? Is there any impact of country risk on the competitiveness?

Probing questions

i. How do you think political actions and bureaucratic behaviours can increase the country risk?
ii. In your opinion, in what ways 'country risk' may affect on supply side and demand side issues?
iii. How do you think country risk is responsible for competitiveness issue in the RMG supply chain?

Appendix- 3

Structured Questionnaire for the quantitative part

Questionnaire

Dear Survey Respondent

Thank you for agreeing to complete this questionnaire. Your participation in this research is voluntary. The confidentiality and anonymity of the respondents will be respected and protected. I will ensure and guarantee that none of the respondents that cooperate in the research will be identified or be capable of identification in the writing up of the research for academic publication. Any data presented will be aggregated as I am interested in general trends, not in a particular individual or organization.

The questionnaire attempts to find out the **predominant factors that influence the competitiveness of RMG sector of Bangladesh through achieving competitiveness in the process of RMG supply chain.** Your assistance in completing this questionnaire would be valuable not only to me but would also make an important contribution to our knowledge about increasing efficiency in the RMG supply chain in Bangladesh. I will value your honest response to the questionnaire and your kind participation is greatly appreciated.

This study has been approved by the Curtin University Human Research Ethics Committee. If needed, verification of approval can be obtained by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth 6845, or telephone +618-92662784. If you would like further information about the study, please feel free to contact me. My contact details are provided below. Alternatively, you can contact my supervisor Professor Mohammed Quaddus on +618-92662862 or by e-mail: mohammed.quaddus@gsb.curtin.edu.au

Consent to participate

Your involvement in the research is entirely voluntary. You have the right to withdraw at any stage without it affecting your rights or my responsibilities.

This survey is divided into four sections. Please make sure that you have completed all the items listed in these sections.

Thank you very much for taking your time and effort to complete this survey.

Yours sincerely,
Md. Nuruzzaman
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Improving Competitiveness of Readymade Garment (RMG) industry of Bangladesh-Analysis of Supply Chains

Section 1: Some information about you and your organisation

Some necessary information about you and your organisation will be collected in this section of the questionnaire. The background information will be used for statistical purposes only.

Please tick □ the most appropriate answer:

Gender

□ Male □ Female

Age group

□ 20 – 30 years old
□ 31 – 40 years old
□ 41 – 50 years old
□ 51 – 60 years old
□ Over 60 years old

Level of education

□ Higher Secondary Certificate
□ Diploma
□ Bachelor's Degree
□ Master's Degree
□ Doctorate
□ Other (please specify) _____

Your current position

□ Head of Department
□ Manager
□ Assistant General Manager
□ General Manager
□ Chief Executive
□ Managing Director
□ Director
□ Deputy General Manager
□ Chairman
□ Other (please specify) _____

Number of years you have worked in the RMG industry

□ Less than 2 years
□+2 to 5 years
□+5 to 10 years
□+10 to 15 years
□+15 to 30 years
□ Other (please specify) _____

Number of years you have been in your current position

□Less than 2 year
□+2 to 5 years
□ Other (please specify) _____
□+5 to 10 years
□+ 10 to 20 years

Please indicate the type of organisation you work in

□Public (government)
□Public + Private (quasi-governmental)
□Private

Number of employees working in your organisation

□Less than 1000 employees
□1000 – 2000 employees
□+2000 – 3000 employees
□+3000 – 4000 employees
□ More than 4000 employees

Please indicate the level of growth in terms of production of your organisation

□ Very Satisfactory
□ Somewhat Satisfactory
□ Poor
□Satisfactory
□Somewhat Poor
□Very Poor

Please indicate the level of profit of your organisation

□ Very Satisfactory
□ Somewhat Satisfactory
□Poor
□Satisfactory
□Somewhat Poor
□Very Poor

Section 2: Questionnaire about the influence of External Stakeholder

Listed below are the statements that reflects the action of political parties, governments & bureaucrats and also their influence over the internal stakeholder in the RMG supply chain and finally to competitiveness. Please read each statement carefully, then indicate the extent **to which you disagree or agree** by checking the appropriate number on a scale of 1 (Strongly Disagree) to 6 (Strongly agree). **Please circle the most appropriate answer.**	**Strongly Disagree** **1**	**Disagree** **2**	**Somewhat Disagree** **3**	**Somewhat Agree** **4**	**Agree** **5**	**Strongly Agree** **6**
Political action						
2.1 Political parties do not sincerely and carefully design good and effective policies with respect to RMG sector in Bangladesh	1	2	3	4	5	6
2.2 Political parties are not actively involved in ensuring uninterrupted utilities (power, gas, water) supply to RMG industry sector in Bangladesh.	1	2	3	4	5	6
2.3 Actions by political parties do not ensure the development of effective logistics (transportation, warehousing and shipping) systems in RMG sector.	1	2	3	4	5	6
2.4 The relation between the political parties and the RMG stakeholders in the supply chain is poor	1	2	3	4	5	6
2.5 Political parties do not take proper care in the development of effectively facilitating services (banking services, customs, export oriented support etc.) for the RMG sector.	1	2	3	4	5	6
2.6 Government and political parties do not play any role to decrease labour unrest and destructive political action.	1	2	3	4	5	6

Bureaucratic Behaviour						
Bureaucrats refer to the officials of various Government departments directly associated with the RMG sector in Bangladesh.						
2.7 Bureaucratic behaviour in office management is obstructing the increase of competitiveness of RMG industry in Bangladesh	1	2	3	4	5	6
2.8 Bureaucratic behaviour is impeding the support services (like banking services, diplomatic support etc.) for the RMG sector	1	2	3	4	5	6
2.9 There are no sufficient coordination among the external supporting offices (ministry of commerce, export promotion bureau, port authority, customs) with regard to the RMG business	1	2	3	4	5	6
2.10 Import and export related documentation process and approval systems are inefficient and slow	1	2	3	4	5	6
2.11 Bureaucrats have no proper knowledge about RMG business and their delivery of services are not good enough	1	2	3	4	5	6
2.12 Bureaucrats are not co-operative in their dealings with RMG business	1	2	3	4	5	6
Country Risk						
Country risk is a more general term that usually refers only to risks affecting all companies operating within a particular country. In reference to RMG industry the interaction of political parties and bureaucrats increases the likelihood of risk in the supply chain of RMG business in Bangladesh.						
2.13 It is risky to do business in Bangladesh due to unstable and corrupt political environment.	1	2	3	4	5	6
2.14 Lack of trust and commitment between the political parties and the suppliers increases the risk of business in RMG sector.	1	2	3	4	5	6
2.15 There is no proper initiative to educate and train the RMG workers in Bangladesh	1	2	3	4	5	6
2.16 Government does not provide proper and rational support to the development of RMG business.	1	2	3	4	5	6
2.17 The high dependency of Bangladesh on imported raw materials in the oven sector of RMG industry significantly increases RMG supply chain lead time	1	2	3	4	5	6
2.18 Government officials has no clear concept and knowledge about the RMG industry of Bangladesh	1	2	3	4	5	6
2.19 Business environment is not good enough due to poor financial services, customs facilities and poor infrastructure	1	2	3	4	5	6

Section 3: Questionnaire about the influence of Internal Stakeholder

Listed below are the statements that reflect the strength and barriers of two main internal stakeholders that is buyers and manufacturers of RMG supply chain and their influence to improve the competitiveness. Please read each statement carefully, then indicate the extent to which you disagree or agree by checking the appropriate number on a scale of 1 (Strongly Disagree) to 6 (Strongly agree). **Please circle the most appropriate answer.**	**Strongly Disagree**	**Disagree**	**Somewhat Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
	1	**2**	**3**	**4**	**5**	**6**

Supply side (manufacturers' side) drivers						
3.1 Labours are available and cheap in the RMG industry of Bangladesh	1	2	3	4	5	6
3.2 Manufacturers are capable to comply with the buyers requirements	1	2	3	4	5	6
3.3 Manufacturers are enjoying favourable international trade environment	1	2	3	4	5	6
3.4 Manufacturers are capable of offering competitive price and quality	1	2	3	4	5	6
3.5 Manufacturers are experienced and efficient enough	1	2	3	4	5	6
3.6 Manufacturers are loyal and devoted to their buyers	1	2	3	4	5	6
Supply side (manufacturers' side) barriers						
3.7 Manufacturers are facing adequate and regular lack of raw materials supply	1	2	3	4	5	6
3.8 Manufacturers are dependent on imported raw materials that increase the lead time	1	2	3	4	5	6
3.9 Manufacturers don't get proper support from the government and bureaucrats due to lack of knowledge about RMG business	1	2	3	4	5	6
3.10 Relationships are not good among the stakeholders(buyers, suppliers, government officials) in the supply chain	1	2	3	4	5	6
3.11 Many manufacturers have no sufficient business and technical knowledge to run the RMG business	1	2	3	4	5	6
3.12 Manufacturers are always facing various political disturbances	1	2	3	4	5	6
3.13 Bureaucrats are not supportive in smooth running of RMG supply chain process.	1	2	3	4	5	6
3.14 Manufacturers are not getting proper support in policy making and other facilitating services	1	2	3	4	5	6
3.15 Manufacturers are facing problems with the shortage of trained and skilled employees.	1	2	3	4	5	6
3.16 Manufacturers are facing the problem of workers' unrest due to lack of concern about workers' right	1	2	3	4	5	6
Demand side (buyers side) drivers						
3.17 Buyers have bargaining power as it is the buyers' market	1	2	3	4	5	6
3.18 Flexible and less formal buyers have more acceptability of doing business with Bangladesh RMG sector	1	2	3	4	5	6
3.19 Manufacturers are willingly to do business with buyers' reputed brand	1	2	3	4	5	6
3.20 Favourable international trade environment for Bangladesh is helpful for the buyers to do business with Bangladeshi RMG sector	1	2	3	4	5	6
3.21 Buyers who place bulk orders and purchase regularly get more advantages in RMG business.	1	2	3	4	5	6
3.22 Buyers with good transaction/credit history get greater RMG business	1	2	3	4	5	6

Demand side (buyers side) barriers						
3.23 Compliance issues arising from the buyers create obstacles to for RMG business	1	2	3	4	5	6
3.24 Terms and conditions from the buyers create problems for regular business	1	2	3	4	5	6
3.25 Buyers' side tariff and regulatory issues create problems for RMG business	1	2	3	4	5	6
3.26 Doing business via middlemen make the supply chain longer	1	2	3	4	5	6
3.27 Buyers' lack of trust over the suppliers make the supply chain inefficient	1	2	3	4	5	6
3.28 Weak relationships between buyers and suppliers make the supply chain inefficient	1	2	3	4	5	6

Section 4: Questionnaire about improving Competitiveness

Listed below are the statements that reflect the action to improve competitiveness of RMG supply chain in Bangladeshi. Please read each statement carefully, then indicate the extent to which you disagree or agree by checking the appropriate number on a scale of 1 (Strongly Disagree) to 6 (Strongly agree). **Please circle the most appropriate answer.**	**Strongly Disagree**	**Disagree**	**Somewhat Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
	1	**2**	**3**	**4**	**5**	**6**
Competitiveness						
4.1 Productivity at all stages of RMG supply chain are adequate to improve competitiveness	1	2	3	4	5	6
4.2 Cost efficiency in different stages of supply chain achieve competitiveness	1	2	3	4	5	6
4.3 Collaborative relationships among the stakeholders of the supply chain improves competitiveness	1	2	3	4	5	6
4.4 Reduction of lead time through appropriate activities(operational and transactional) in the supply chain improves competitiveness	1	2	3	4	5	6
4.5 One stop service in domestic RMG related activities in the upstream and downstream supply chain ensures competitiveness	1	2	3	4	5	6
4.6 Government support at all level of RMG related activities improves competitiveness	1	2	3	4	5	6
4.7 Competitive price and quality of RMG products ensures competitiveness	1	2	3	4	5	6
4.8 Reduction on import dependency improves competitiveness	1	2	3	4	5	6
4.9 Technological advances at all level of RMG supply chain improves competitiveness	1	2	3	4	5	6

Appendix- 4

Sample Quotes for identifying different variables

Following quotes reflect the variables "lack of raw materials"

According to 3rd interviewee, "In Bangladesh whenever an order is placed then manufacturers need to import raw materials for that order. There are some backward linkage industries in the knit sector but not in the woven sector. Maximum time per 100 dollar order, a supplier needs to spend 75-80 dollar for importing raw materials. So take home income is 20% for the manufacturers or suppliers. So lack of raw materials is the major problem for Bangladeshi RMG industry"

Following quotes reflect the variables "stakeholder relationship"

According to 5th interviewee, "It is possible to reduce country risk through diplomatic relation and involvement in the process of decision making regarding various issues of business. Financial transaction is risky in this sector. Government can take necessary action in the banking sector through central bank and ministry of commerce. Due to various political actions RMG is always facing some problem in business. Government should take supportive action to reduce any kind of unrest in the RMG. Bangladesh is import based country. To maintain the balance of payment we must export. At present RMG is playing vital role to increase export. So government and bureaucrats should be very careful about any kind of unrest in this sector".

Following quotes reflect the variables "Lack of management knowledge and delivery of performance"

According to 6th interviewee, "If we consider the financial matter like the banking service, they provide special service for the wealthy importer. This service is not in general. As they are quick payer to the exporter so they get quick service and save some valuable time from the basic 60 days (manufacturing and Voyage) of lead time.30 days for make the materials and another 30 days to get the materials in the warehouse. But for the late payer the exporter takes long time and it is not less than 60 days. However when an importer save time from the import process, that time cannot be useful due to the complexity of port management and due to the bureaucratic system in customs clearance. We the manufacturers loss 10-15 days due to inefficiency in the port management. We cannot show the efficiency in this point of our supply chain. We don't have deep sea port. We are taking our materials through feeder vessel from the mother vessel and feeder vessel takes berth at the port and unloads the materials".

Appendix- 5

Sample Transcript

1. What is your perception about competitiveness of Bangladeshi RMG?

I went through your probing question and thought that I should first discuss with you about SCM. SCM is "the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers"- it's a quotation. SCM span all movement and storage of raw materials, work in process inventory and finished good from point of origin to point of consumption.

People in General usually think that supply chain means transportation but actually I do not think so. It is actually a part of SC. I would like to inform here a thing that buyers of different countries determine who will be their transport agent. We the suppliers don't do it. 99% supply agents are selected by the buyers and only 1% is by the suppliers. Buyers are sometimes reject order for different specific reason like, did not achieve the required quality, have delayed or a nonspecific reason. As a result the ordered products become 'stock lot'. For exporting these stock lots the suppliers decide about their own supply agent. So the transportation /shipment part of final product is determined by the buyers and the buyers are major role players for the shipment. So, we the manufacturers and the particular shipping agent are suppliers for the buyers. Even when I send product by my own cost then I cannot choose any air forwarder. Because every buyers have their own supply chain dept. and the top official of that dept. decide about their forwarders. They have some selected/enlisted freight forwarders for their business. So they always give preference to those freight forwarders. We do not talk about this matter with the buyer. Some buyers request to send their product to the ICD (inland container depot), Dhaka, some request to send to the Chittagong port and some buyers informed that their agent will collect products from the suppliers production point. After two years most probably some buyers will tell to send their products to Narayangonj port and then through light vessel/ fider vessel those products will be taken to the Chittagong port. The shipment of 80% cargo is done through Chittagong port.

Yes, we don't have EDI (electronic data interchange) technology but our buyers' have. When they placed order to the suppliers that is actually information, not a formal order. We do not make garments according to that information. Buyers should place order formally to the suppliers.

At present Bangladesh (BD) is holding the 2nd position in the world clothing business as a whole considering the all RMG products. BD is far behind than the first position holder of china. China's market share about 120 billion dollar whereas the market share of Bangladeshi garments near about 18-20 billion dollar. India is just behind the Bangladesh.

Bangladeshi RMG is competitive and doing so far well within the all limitation. Now we can go to the first question, off course Bangladeshi readymade garment is competitive. As holding the second position there is huge chance to increase the competitiveness. How can we increase competitiveness? In reply to this question, I would like to say that there is absence of big issue that is price. In competitiveness supply chain is one part but you didn't consider the price. At this time when we are discussing price is a major factor and in the past it was also but I don't know about future. I will be happy if it doesn't exist in future. Other issues like lead time, delivery performance, import dependency, responsiveness and stakeholder relationships are also important. I think order cycle and lead time are same. I don't know why you make it different. As a supplier lead time and order cycle time is same to me because after finishing the order cycle time we go for shipment and the additional time in the total lead time is for another supplier i.e. buyers transport agent. Here import dependency, responsiveness and what you mentioned all are important but my point of view price is the most important factor. We can reduce the price through efficiency of supply chain. When supply chain will be efficient, definitely it's impact will go to the price. There are two types of efficiency one is, improve the physical quality of the product but it doesn't mean that our product is not in good quality at present. Our product definitely very good in

quality and that is why we are holding the second position but problem is product range. We produced garments within a very small range but there are a large range of products which are produced by our competitors. There are various high quality and high priced products in the market. But we are producing only basic products. So if we go forward to produce high quality and high priced product and at the same time if we improve supply chain related inefficiency, then we can bargain about our price. My bargaining power will increase at that time when I would become more efficient. So until or unless the increase of quality products range and efficient SC, we cannot increase bargaining power and competitiveness through supply chain.

I think you got the answer of first question. Now second probing question; yes, it is possible to increase the competitiveness. Through better quality product and efficient supply Chain (SC), I can reduce price and lead time, develop responsiveness and develop good relation among the stakeholders and finally increase the competitiveness.

We can improve competitiveness through improvement of SC. Now see, what are the parts of SC. SC includes all movement and storage of raw materials. Usually we start our production process after placing the order though we start it before but SC start after placing the final order. Before placing the final order which we do that is called merchandising. In RMG two groups of people involved in supply chain. One is merchandiser and another is commercial group. After finalisation of order a merchandiser makes a critical path or time of action. If he honestly and sincerely prepares the path then he will understand whether we will be able to deliver on time or not. This critical path will give you clear picture of your action. Critical path actually tell you when and what product you have to collect from different suppliers or placing order and when you will in house the raw materials in your factory warehouse. If the critical path is correct and tell you that you have enough space, time and capacity to deliver the goods on time, then accordingly if you can do everything as per your critical path and other activities like approval. Successfully you can do the job.

Payment term is another thing from booking to in house. Maximum time payment is made by opening letter of credit (L/C). But we have to get buyers L/C first. Then we usually open back to back L/C. Many buyers don't wait for L/C. They bring a service contract from the buyer which is like purchase order but some contract terms and some L/C terms like payment system will be mentioned there in written. Banks which are involved with these service contract and when they approve this contract then it works i.e. you can open a back to back L/C. Service contracts is a summary like L/C which is printed on a buyers pad signed by buyers. Most of the time we do not receive L/C or service contract in due time and that is why it makes delay to open a back to back L/C. If we can open a L/C in time, in house the materials in factory and all sampling approval is done timely then we start production in time according to the critical path. If we cannot hit the target timely then it would be difficult to manage time. After that it is possible to do it but we have to increase production line. But most of the time it disturb another orders. Then Management shows undecidedness and then 5-6 order disturbed or cancelled. We can run our factory legally 10 hours. Through shifting duty we can also run evening shift but how can we hire and manage workers? You can run one/two department but not a whole factory. So it cannot be a solution. These types of occurrence are happening regularly.

After that storage of raw materials that is store management is very important. Poor store management is a big problem in the RMG industry. Many goods are wasting and at the same time wastages are increasing due to inefficient store management. According to record book the amount of raw materials are oaky and has been stored timely. But during the time of production we are not getting accurate amount. There are two things may be happened, one is it has been stolen or may be misplaced. This is regular phenomenon. So storage of raw materials is very important for us. Suppose all things happened accurately and timely like merchandiser and commercial people perform their duties efficiently, buyers' documents received and back to back L/C opened timely, raw materials suppliers exported materials in time and in house has been completed in time but when production is started then, it has been observed that the amount of materials in the store is not same like before. As it is the part of supply chain and if it doesn't work and face the lack of raw materials due to a part of supply chain, there is nothing to do. After this, work in process inventory and lastly finished goods from one point to another are important. When we meet our targeted delivery date, handover

the goods to the nominated shipping forwarders within the stipulated time then our job is almost done. Because I am not working as a forwarder, I am working on the basis of FOB. After receiving the bill of lading responsibility goes to the shipping agent. But it poses a little consequence. Because of faulty system that works in Bangladesh and we didn't go to take any action even the government, bureaucrats, port management, airport management government decision makers are thinking deeply about the faulty system.

We usually provide a packing list at the time of shipment where all the things are described about product and package. Sometimes all things or formats of the packing list are provided by the buyers. After having the all necessary signature from different authority and completion of official formalities the packing list and invoice handed over to the forwarder for shipment. Whenever the goods are received by the buyers at destination we got a message from the buyers' warehouse about shortages of goods. In that case what can I do? After handed over the goods literally I have nothing to do and no control over the goods though till that time we are owner of that goods. I can firmly tell you that this type of occurrence didn't happen in my (factory) premises. So in this regard what can we do? We do everything here with emasculate protection. I am telling about the weaknesses of supply chain. How can I remove this inefficiency and develop the supply chain? Factory is a one point of my supply chain. I am sending goods from my factory to a nominated warehouse of Chittagong port. I have no means to look after these goods during transportation. It is really impossible to send a man to look after this matter. If there are five trucks go everyday to Chittagong then I need 30-35 people but how can I manage this people to monitor this task. So it's really difficult to control the things like theft in the chain.

Is it possible to increase competitiveness? How? Here I will discuss the level or stage of improvement. First we have to improve movement of raw materials and incoming. These are possible through improvement of ourselves. Just after having order we should place booking order for raw materials as soon as possible and try to in house materials as soon as possible. Second storage management that is storage of raw materials and working process inventory. Here we have to control all kind of theft and miss placing of materials. In these areas we have to increase our efficiency. We hire the transport facility. They take 12 hours to carry goods from Dhaka to Chittagong which is too much. BGMEA and other govt. organisations who are involved never uttered for that. Why we are spending 12 hours more. After that for loading, port takes 3-6 hours due to queue in the port. It has some justification but why 18-24 hours to carry goods from Dhaka to Chittagong. Another thing that is port inefficiency during incoming or importing goods. Ship cannot be unloaded timely. Due to lack of space in sea port it cannot dock timely and need to wait 3-4 days for unloading. We need to reduce this vessel turnaround time in Chittagong port. Singapore port takes only 6 hours. So why we cannot reduce two days from here. Government and port authority can do it easily if they take necessary effort. If we import from India, it takes 3 weeks and whenever we import from China it also take 3 weeks. We can easily reduce one week from here. I am not committing that we can deliver by 76 days but we should ensure and confirm that within 90 days delivery is possible. There are two areas to make efficient the SC. One, there is a scope to reduce lead time and another thing is better management in inventory and finished product or in product in process. Sampling also a critical element of supply chain. Without approval of sampling you cannot go to the next stage. Buyers are usually approved 3-4 types of sampling. First one, development sampling. As we are starting after order confirmation so we can avoid development sampling. Buyers want first fit sample, when fit sample is approved then the pattern is approved. The next stage is actual sample. This is also called pre production or red seal sample or contractual sample. On the basis of the approval red seal sample we usually go for production. From the production we sent a sample for final approval which is called gold seal sample. Buyers know that it is that product which is being shifted. If fit sample is not approved then we cannot proceed for pre production sample and when pre production sample is not approved then we cannot go for production and whenever production sample is not approved we cannot go for shipment. So, suppliers need to approve these three samples before shipment. At the same time suppliers need to go for various test and passed. Suppliers always need to arrange test from the buyer's nominated lab and for some test they need to go outside of the country. Without these formalities suppliers, cannot shipment their products. There are two reasons for taking more time in sampling process. One, most of the buyers approve their sampling from their own country and they have

specific date to check sample and issuing approval letter. Unfortunately if I fail to reach by that specific date, I had to wait for next schedule which take long time for approval. Two, when I failed to catch the schedule time for myself and third, when buyers reject the sample. In this way the critical path will be extended and the delivery time will be tightened. Therefore we can improve our efficiency and competitiveness by making all the events white.

There are many stakeholders among the chain. Among them buyers are big stakeholders. Suppliers are also a big stakeholder because of two reasons. One, it's a buyers' market when we are suppliers and it's also a suppliers market when we are buyer. In that sense manufacturers/suppliers also a big stakeholder. Government, bureaucrats, political parties are also stakeholder in that sense that there is a scope to play role to improve the prevalent environment at this moment by escaping us from the dirty and unrest political environment. If the government declare the garment sector as a thrust sector and if they declare to keep the industry free from any kind of political action that can never hamper the RMG production process then it would be a good stimulus and we can continue the production without any interruption. Bureaucratic things are those activities directly related to obtaining official permission for export, import and some financial services which may create some impediments for the suppliers.

I don't think that the businesses are shifting from Bangladesh. Due to having experience and specialisation, some businesses of special products are going to other countries unless or until we become a pro in producing those particular garment products. Due to competitive price Bangladesh can lose some business. If the buyers sharply consider the lead time then they go to another country because they know Bangladesh requires at least 90 days. Lead time is higher to those countries where value addition is not higher and lead time is smaller where value addition is higher.

2. What are the supply side drivers (from the manufacturers' side) that may enhance the competitiveness of RMG supply chain?

We would say first, cheap labour and competitive price but cheap labour and competitive price are related to each other. We would say also lead time. The most valuable element for price is labour. If I say competitive price then I cannot say cheap labour and if I say cheap labour then cannot say competitive price. Third, quality of products fourth, experience and then supply chain.

Do you think the government, bureaucrats and political environment of Bangladesh support you? How? Definitely Government and bureaucrats but not political environment. Govt. and bureaucrats are supporting by providing different types of official formalities, procedure, documentation and also some rules & regulations. I do not know how the bureaucrats but as a part of government, bureaucrats are supporting the suppliers but not in an efficient way.

Do you think the acts of bureaucrats are drivers? I don't know how bureaucrats are drivers.

3. What are the supply side barriers (from the manufacturers' side) that may hinder the competitiveness of RMG supply chain? Value addition not so good

Well long lead time again, poor bargaining power, inefficient supply chain, import dependency etc are main barriers for hindering competitiveness. Political environment - yes, because of the image of the country. Another is direct action like hartal, create chaos, damage property and indirectly influencing labour unrest. I would say in some way govt. also creates hinder because of their different types of non-action. As a part of the government, bureaucrats are also doing the same. (If we get an efficient port and it is only possible to achieved by govt. action. For other things like good banking services and stoping manipulation are possible whenever government play role).

These non-actions are actually hindering the competitiveness. I am not separating the bureaucrats from the government. Government actions means the action of bureaucrats

4. What are the demand side drivers (from the buyers' side) that may enhance the competitiveness of RMG supply chain?

First thing is bargaining power. When buyers bargaining power will be stronger then seller's bargaining power will be weaker. I don't know how this will help to increase competitiveness. It is unlikely both these two country i.e. Bangladesh and USA or whatever the other country. We know this is the time of free trade. Price is made by demand and supply. So there is no question about the influence of Government to control bargaining power. Here we didn't consider the price as a driver but we can consider it. First thing is that we know our bargaining power when we talk with each other and this power always varies from time to time. Suppose this time in Bangladesh order has been reduced. Hopefully the flow of order may increase in the month of October. This situation is abnormal but buyers are telling that it is normal, not abnormal. In this time many fashion shows are usually arranged. Many designers are attending in those fashion shows. New design will be produced or come out and then order will be placed. These are buyers' argument but from our experience we didn't see this type of environment before. These are seems to be true but they are telling like this because of buying power. They will have to import at one point of time and have to place the order but they are taking their time as much as possible because of bargaining power. They are waiting and watching the price. Actually they want to see to what extend price go down.

I am not clear with this question. Actually none can do any business with anyone without a minimum relation or understanding to each other. When we talk with each other then we come to know about bargaining power. Bargaining power is not a driver.

Yes bulk customer is a driver and at the same time as a barrier. As a supplier I will also see the price, image and relationship & trust.

Yes, GSP facility is one kind of strength. Buyers know that facility and that is why they offer minimum price.

Actually we do bargain with all buyers and suppliers. Now everybody is open in pricing. There is nothing to hide. Suppose one of our buyers Marks & Spencer. Our pricing system is open to them. Because I have to purchase all raw material from their nominated suppliers. So buyer knows the price of all raw materials. Buyer's has fair idea about my pricing system. Pricing is done on the basis of Cutting and Making cost.

Pricing, bulk customer, brand image, having GSP facility, relationship and trust are the demand side drivers but not bargaining power. Some special buyers never get special treatment. It is actually not fair. Wall mart is a single largest buyer of Bangladesh. It's a bulk customer. This type of customer sometimes good and at the same time risky. I have to realise my strength if I work with such a bulk buyer like Wall Mart. If Wall Mart cancels any order that would be a big loss but if I work with small buyer and if he or she cancel the order that would be a small one. So there is a chance of loss and gain. Gain is not remarkable when dealings with a large buyer. Because large buyer always offers lowest price.

So far I know govt. and bureaucrats are never providing any special treatment to any special buyer. I think this type of treatment never brings any change in the competitiveness. How it make any change? I have told you about a 90 days critical path. If a bulk customer places order, I have to purchase raw materials from china where lead time would be three weeks. Big customer can invest to establish backward linkage industry but due to lack of logistics support govt. of Bangladesh cannot give him permission to do so. It would be another value addition but I have to import raw materials for that industry. Because we don't have cotton. We have to think about the reality. Actually there are lots of things to increase competitiveness before giving importance to backward linkage. Is there any certainty to get buyer when I will establish backward industry and a good port? Actually not. Before that I have to achieve quality and then fix the cheapest price. To ensure quality and cheaper price we have to increase our efficiency. After a long journey we have arrived in this stage and in the long run we can give a solution but there are some short term problems. We have to meet up those first. Many cloths are produced in Bangladesh but we are importing from china because of better price and better lead time.

I think the government support on demand side drive will never do anything special that increase the competitiveness

5. What are the demand side barriers (from the buyers' side) that may impede the competitiveness of RMG supply chain?

From the buyers point of view there are some barriers which are not product related. There is no benefit if I talk about product related barriers because we are unable to produce quality product. There is no benefit of thinking and shouting if we do not achieve quality. Long lead time, at that time when I get an order from a buyer it would be declared how long time would be taken. If it breaks for any kind of reason, that is suppliers fault. Because I am buyers market. I have nothing to say if buyers delayed to send approval. We have to have approval for each sample. This sample approval procedure is a barrier. Buyers sometimes raise questions about human right (It is politically motivated in that sense that there are some group of people), who are specialised in garment industry which is also a barrier. A man named Den Carnegie has worked a lot on RMG in Bangladesh. He thought seriously about RMG and became a pressure group. He lodges complain against some compliance issues and age. Sometimes buyers raise compliance and age issue in the garment sector. There is no such type of problem in the A and B category factory. But many factories didn't maintain it. Many buyers didn't care about that and they are placing order to those suppliers. Few European buyers and buyers specially from UK always disturb us raising these issues. If any reporter of UK makes a report that Bangladeshi manufacturers are using child labour. In that case buyers will definitely fall in a problem to sell their product.

How do I supply? Already we discussed it. We actually supply through buyers nominated agent. Buyers don't ask about the SC. They told just you are delayed. Then we understand that there was a problem in SC. Buyers in general does not give emphasis on any special issue of supply chain. They are happy with quality garments and deadline maintenance. Buyers always want quality products and delivery within the time. Sometimes buyers impose some restrictions which are barriers in supply chain. A new restriction is, not to buy cotton from Uzbekistan because they use child labour.

Actually it is not a factor from where we are importing cotton. In the world cotton market that is not a factor in which country cotton is producing. The market is controlled by GINNI. Cotton is producing in African countries but through GINNI whole business controlled by the western countries.

Yes, buyers are sometime creating barriers to improve competitiveness. They are expecting quality products and at the same time offering lower or minimum price. We see that in a country same product imported from Bangladesh are sold in different places in different price. You cannot purchase a good quality shirt from Bangladesh by 1.5 pound but you can purchase it with that amount in UK. So how do you expect that particular buyer is enhancing competitiveness to RMG? They are not. Political action and bureaucratic behaviour are also creating barriers to the buyer. They are actually not playing good role and I do not expect from those so-called buyers. Because they have come to do business so, where they will find cheaper they will purchase from there and then they will consider another things like strength, quality etc. Same ways, during hartal buyers come to reschedule. When hartal is continuous then we usually go to neighbouring country to settle everything. You know about the bureaucratic behaviour problem. Okay, you are thinking about backward linkages like textile industry. Forget it just think how many foreign buyers has invested in Garments factory or through joint venture. Why? There are some in EPZ. It's different things. But you will see there are many big customers in Pakistan, India and china, why not in Bangladesh. Once they were coming but not now.

When the buyers are big, they may create some problem by cancelling the order. At that time suppliers faces huge losses due to a big order cancel. Big buyers are sometimes create problem

6. What is your observation about political actions over your business?

It has already been discussed many times. Political actions are not driver. They are barriers.

7. How do you think that the bureaucratic behaviours are weakening the competitiveness of supply chain?

Yes they are weakening the SC competitiveness. To make efficient SC we need one point of service and more efficient entry and exit point by which we can reduce lead time. Not only that but also investors will be encouraged. Should be reduced bureaucratic behaviour, red-tapism and others barriers. But due to bureaucratic behaviour we failed to create competitiveness because of many point of service and inefficient entry and exit point.

8. How do you think about country risk for your business? Is there any impact of country risk on the competitiveness?

Government, bureaucrats and political parties are not playing role which are mentioned as "non-actions" to increase competitiveness. There are two aspects. One, don't play role which are non-actions and if it is continued then we shall not become competitive. If this condition has been continued then Bangladesh will be treated as 'Risk Country '. We shall not be competitive. Order will be transferred to another country. What would be the level of play if they start to play role. One, need to cut the point of service or reduce the windows of services. We need to make more efficient of those agents who are involved in entry and exit point. Political environment should be kept in a tolerable level. There are many representatives of buyers live in Dhaka and Chittagong. Due to bad political environment like Hartal or Strike they cannot continue their work and visit the suppliers place to monitor their order. As their vehicles are attacked by the activist of political parties they cannot move like normal days. This environment is not conducing for trade development. Usually dirty politics and political unrest will demolish the image of a country. Due to hartal when production process are interrupted, buyers and suppliers cannot communicate properly and labour unrest increased then whole industry will fall in a crisis. Another thing i.e. traffic congestion is a big problem. Government should take necessary action otherwise the buyers will go back to another country.

Another things that some entrepreneurs investing in this sector without any knowledge about this sector. It is like fashion in our country. Again who are not getting desired job they are coming in this sector and working here. Due to lack of good structure, this sector is not attractive yet in our country.